This course supports the assessments for Information Systems Management. The course covers 10 competencies and represents 3 competency units.

**Introduction**

**Overview**
Management of the information systems that help businesses gather and analyze endless amounts of data is vital in today’s knowledge-based economy, where practically everything anyone does is tracked in a database and transmitted via networks. Effective managers are able to communicate with information technology personnel about the hardware and software that store and transmit important business data. This communication may occur in discussions about the development of a system to support the CEO’s newly announced business strategy or compliance with government privacy regulations.

This course provides an overview of the many facets of information systems applicable to businesses. As you examine the programming languages, methods of system development and implementation, networks, databases, and hardware and software used by IT professionals, you will be able to show how these tools securely facilitate e-commerce, decision support, and communication in a global marketplace. In short, you will learn to view IT as a strategic partner in your company.

**Getting Started**
Welcome to Information Systems Management! During this course you will use McGraw-Hill SmartBook to complete reading assignments, watch chapter videos, and complete homework assignments and practice quizzes with immediate feedback. It is recommended that you use the pacing guide to keep on track with your weekly learning. Complete the pre-assessment after finishing the course, in order to receive your personalized coaching report. You can use the report to help guide your studying and preparation for the objective assessment. Remember to request guidance from the course instructor as needed to help you successfully complete the course. You will demonstrate competency in this course with an objective assessment.

**Competencies**
This course provides guidance to help you demonstrate the following 10 competencies:

- **Competency 333.1.1: Information Systems and Business Functions.**
  The graduate explains the role of information systems in supporting essential business functions.

- **Competency 333.1.2: Computer Hardware and Software**
  The graduate describes the characteristics and functions of computer hardware and software in support of business.

- **Competency 333.1.3: Data Resource Management**
  The graduate describes effective techniques for managing databases and data warehouses.

- **Competency 333.1.4: Networking and E-Commerce**
  The graduate explains the importance and effective applications of telecommunications,
networking, the Internet, and e-commerce to business.

- **Competency 333.1.5: Decision Support and Artificial Intelligence**
  The graduate evaluates the use of various decision support, decision analysis, and artificial intelligence systems in business.

- **Competency 333.1.6: Planning, Analysis, and Design in Systems Development**
  The graduate describes effective strategies for planning, analysis, and design in systems development.

- **Competency 333.1.7: Implementing and Sustaining Systems**
  The graduate describes effective strategies for the implementation and maintenance of information systems.

- **Competency 333.1.8: Managing Information Technology**
  The graduate determines best practices for managing information technology in businesses and the particular challenges of global information technology implementation.

- **Competency 333.1.9: Information Security**
  The graduate describes the best practices for ensuring information security in enterprise information systems.

- **Competency 333.1.10: Ethics, Privacy, and Societal Effects**
  The graduate describes the best practices for ensuring privacy, averting ethical issues related to intellectual property, and minimizing negative societal effects in the management of information systems.

**Course Instructor Assistance**

As you prepare to successfully demonstrate competency in this subject, remember that course instructors stand ready to help you reach your educational goals. As subject matter experts, mentors enjoy and take pride in helping students become reflective learners, problem solvers, and critical thinkers. Course instructors are excited to hear from you and eager to work with you. Successful students report that working with a course instructor is the key to their success. Course instructors are able to share tips on approaches, tools, and skills that can help you apply the content you're studying. They also provide guidance in assessment preparation strategies and troubleshoot areas of deficiency. Even if things don't work out on your first try, course instructors act as a support system to guide you through the revision process. You should expect to work with course instructors for the duration of your coursework, so you are welcome to contact them as soon as you begin. Course instructors are fully committed to your success!

**Preparing for Success**

The information in this section is provided to detail the resources available for you to use as you complete this course.

**Learning Resources**

The learning resources listed in this section are required to complete the activities in this course. For many resources, WGU has provided automatic access through the course. However, you may need to manually enroll in or independently acquire other resources. Read the full instructions provided to ensure that you have access to all of your resources in a timely manner.
manner.

**Automatically Enrolled Learning Resources**

You can access the learning resources listed in this section by clicking on the links provided throughout the course. You may be prompted to log in to the WGU student portal to access the resources.

**McGraw Hill Connect**

McGraw Hill Connect is a web-based assignment platform that allows you to evaluate your knowledge of the subject matter through LearnSmart activities, reading assignments, chapter videos, homework assignments, end-of-chapter quizzes and practice tests. You must click on the chapter and the appropriate links to perform each task.


*Note: This e-text is available to you as part of your program tuition and fees, but you may purchase a hard copy at your own expense through a retailer of your choice. If you choose to do so, please use the ISBN listed to ensure that you receive the correct edition.*

**Topics and Pacing**

**Outline**

This outline suggests a weekly structure to pace your completion of learning activities. It is provided as a suggestion and does not represent a mandatory schedule. Follow these guidelines carefully to complete the course in the suggested timeframe.

- **Week 1:**
  - Introduction to Information Management Systems
- **Week 2:**
  - Electronic Business Systems
- **Week 3:**
  - Information Technology: Computer Hardware and Software
  - Data Resource Management
- **Week 4:**
  - Telecommunications, Networks, and the Internet
- **Week 5:**
  - E-Commerce
  - Decision Support and Artificial Intelligence
- **Week 6:**
  - Planning, Analysis, and Design in Systems Development
- **Week 7:**
  - Implementing and Sustaining Systems
- **Week 8:**
  - Managing Information Technology
  - Management Challenges: Security
Management Challenges: Ethics, Privacy, and Societal Effects

Information Systems and Business Functions

IT managers ideally will understand and appropriately convey to their staff the needs of the business, and other business managers will understand IT well enough to ask for the right tools to support their initiatives. When this shared understanding occurs, IT will be invited to the planning table. By including IT in business strategy and planning discussions, information systems can be built that help departments communicate better, automate manual processes, reduce errors, make decisions, and gain a competitive advantage.

Introduction to Information Management Systems

In the information age in which we live, technology is all around us. We can use the information at our disposal for good or bad, and we can use it effectively or ineffectively. Being aware of how technology gathers and analyzes information can help businesses separate themselves from their competition.

This topic addresses the following competency:

- **Competency 333.1.1: Information Systems and Business Functions**
  The graduate explains the role of information systems in supporting essential business functions.

This topic highlights the following objectives:

- Recognize the concept of information as a key resource to business.
- Recognize the importance of information systems in business.
- Explain how Porter's approach relates to assessing competition and building business strategies.
- Describe the information age and its components.

Chapter 1: "Business Driven Technology"

In this chapter you will read about how information systems are integrated into all aspects of business operations and daily life.

As you complete the listed material below, make sure you can answer the following questions:

- What are some examples of data that a store might collect about its customers, and how are those data changed into information or business intelligence?
- Consider the department where you work. How do (or could) information systems improve how you do your job?

Also, pay attention to the following key points:

- the differences among data, information, business intelligence, and knowledge
- the core functions of a business and how technology affects each
- the definition of a system
Read Chapter 1 (“Business Driven Technology”) and then complete the following activities in *Business Driven Technology*:

- Chapter 1 Organizational Departments
- Chapter 1 The Roles and Responsibilities of MIS
- Chapter 1 Types of Data, Information, Business Intelligence, and Knowledge
- Chapter 1 MIS and Systems Thinking
- LearnSmart Chapter 1: Business Driven Technology
- Chapter 1 Quiz

**Chapter 2: "Identifying Competitive Advantages"**

In this chapter you will read about why it is not enough to just gather information and why it is important to use that information in a way that helps distinguish your organization from the competition.

As you complete the listed material below, make sure you can answer the following questions:

- What are Porter’s 5 Forces? How do they help build a competitive advantage?
- How are Porter’s generic strategies related to the results of a 5-Forces analysis?

Also, pay attention to the following key points:

- Porter’s 5 Forces
- Porter’s generic strategies
- why it is important to look for ways to gain a competitive advantage

Read Chapter 2 (“Identifying Competitive Advantages”) and then complete the following activities in *Business Driven Technology*:

- Chapter 2 Porter’s Five Forces Model
- Chapter 2 Porter’s Three Generic Strategies
- Chapter 2 Competitive Advantages: Zappos
- LearnSmart Chapter 2: Identifying Competitive Advantages
- Chapter 2 Quiz

**Chapter 6: "Valuing Organizational Information"**

In this chapter you will read about the various types of organizational information you have at your disposal. Some of it needs to be acted on right away to keep the business running in the short term. Some of it will help you improve the way you do business in the long term.

As you complete the listed material below, make sure you can answer the following questions:

- How does information flow up, down, in, out, and around the company where you work?
- How does the information you use differ from the information used by people above or below you in the company organization chart?
- What is an example of low-quality information you have used and what were the results?
How could you have improved the situation with better information?

Also, pay attention to the following key points:

- aspects of high quality information
- analytical vs. transactional information
- the types of information that managers and those who work with them need to do their job

Read Chapter 6 (“Valuing Organizational Information”) and then complete the following activities in *Business Driven Technology*:

- Chapter 6 The Business Benefits of High Quality Information
- Chapter 6 Transactional and Analytical Information
- Chapter 6 Political Microtargeting: What Data Crunchers Did for Obama
- LearnSmart Chapter 6: Valuing Organizational Information
- Chapter 6 Quiz

**Electronic Business Systems**

Every company gathers and uses different information; however, within a company, various departments need and use different information to perform their functions properly. Ideally they will coordinate with each other, and a good information system will help ensure that happens.

This topic addresses the following competency:

- **Competency 333.1.1: Information Systems and Business Functions**
  The graduate explains the role of information systems in supporting essential business functions.

This topic highlights the following objectives:

- Determine how information systems are used to gain strategic advantage in business.
- Explain how information systems support essential business functions.

**Chapter 3: "Strategic Initiatives for Implementing Competitive Advantages"**

In this chapter you will read about how each company is a little different than others. Streamlining the processes used to move information from department to department will help ensure everyone is on the same page, working to achieve the same competitive advantage.

As you complete the listed material below, make sure you can answer the following questions:

- How do supply chain, customer relationship management, and enterprise resource planning systems support core business functions?
- How could a supply chain, customer relationship management, or enterprise resource planning system give a company a competitive advantage?
Also, pay attention to the following key points:

- supply chain management
- customer relationship management
- enterprise resource planning

Read Chapter 3 (“Strategic Initiatives for Implementing Competitive Advantages”) and then complete the following activities in *Business Driven Technology*:

- Chapter 3 The Five Basic Supply Chain Activities
- Chapter 3 Supply Chain Management
- Chapter 3 Customer Relationship Management
- Chapter 3 Got Milk? It’s Good for You—Unless It Is Contaminated!
- LearnSmart Chapter 3: Strategic Initiatives for Implementing Competitive Advantages
- Chapter 3 Quiz

**Chapter 20: "Developing a 21st-Century Organization"**

In this chapter you will read about how technology is changing the face of business. It is no longer about competing with just the store across town, but with competitors around the globe, as well as dealing with the changing demands of customers.

As you complete the listed material below, make sure you can answer the following questions:

- What are the important recent trends in modern organizations that affect their ability to gain a strategic advantage?
- How do the key technology trends affect an organization’s core business functions?

Also, pay attention to the following key points:

- changing industry trends
- important areas to focus on to improve the IT infrastructure
- integration of all parts of the business

Read Chapter 20 (“Developing a 21st-Century Organization”) and then complete the following activities in *Business Driven Technology*:

- Chapter 20 Case: Disaster at Denver International Airport
- LearnSmart Chapter 20: Developing a 21st-Century Organization
- Chapter 20 Quiz

**Chapter 21: "Business Basics"**

In this chapter, you will read about how IT should not operate alone within the organization. Business leaders need to be able to communicate effectively with the IT department, just as IT personnel need to understand how their efforts align with the mission of the company.

As you complete the listed material below, make sure you can answer the following questions:
- How do the departments other than where you currently work add value to your company?
- How does (or should) your department integrate with those other departments?

Also, pay attention to the following key points:

- common business forms
- common departments within a business
- the product life cycle

Read Chapter 21 (“Business Basics”) and then complete the following activity in *Business Driven Technology*:

- LearnSmart Chapter 21/Business Plug-in 1

**Computer Hardware and Software**

While the essential elements of computer hardware (e.g., processor, storage, input devices, and output devices) and computer software (e.g., operating system, utilities, drivers, and application software) remain largely the same, the format in which these elements are presented is going through constant change. Ultra-portable computers in the form of phones and tablets are pervasive. Many applications have moved from expensive, processor-intensive, locally installed desktop software to free or cheap web-based software accessed through a browser or light apps that are maximized for mobile devices. Input alternatives to the keyboard and mouse such as voice, handwriting, and motion are becoming more commonplace.

Understanding how your computer works is as important as ever. You should be able to analyze the relative costs, performance, security, storage, power consumption, ease of use, available software, compatibility, portability, and networking of various devices so you can coordinate their use.

**Information Technology: Computer Hardware and Software**

Whether using traditional servers or offloading processing on rented space on a service provider’s cloud, the hardware that actually does the heavy lifting and processing needs to be sufficient to get the job done without going overboard and paying for something that is too big for those needs. In addition, the hardware selected should integrate appropriately into the rest of the organization and be designed in such a way to support the core mission of the organization. A credit card processor may need 24/7 availability, while a small non-profit may not need such high availability but rather something that is easy for them to manage with a small budget. Hardware is important, but without software, there would be no need to have so much processing power. The system software tells the hardware what to do, and application software performs tasks that the user tells it to. It is important to understand the various types of software, from a mainframe operating system to a smartphone app.

This topic addresses the following competency:

- **Competency 333.1.2: Computer Hardware and Software**
The graduate describes the characteristics and functions of computer hardware and software in support of business.

This topic highlights the following learning objectives:

- Distinguish between the various types of computer systems.
- Identify the characteristics of input, output, and storage technology.
- Classify types of application software based on the functions they perform.
- Compare the characteristics of different operating system software.

Chapter 23: "Hardware and Software Basics"

In this chapter you will read about how hardware can be anything from a single-user device like a USB drive or tablet to a mainframe server to which thousands of people back up their files every day. In addition, operating system software manages the hardware, applications, security, and all aspects of a computer system. Application software is the real reason we have a computer to begin with, which includes the word processors, spreadsheets, databases, multimedia players, and other programs as needed. Application software may be complicated and expensive or simple and free, but should be selected carefully to provide the user the experience they expect.

As you complete the listed material below, make sure you can answer the following questions:

- What are the key components of the primary computer you use at work or at home? Which of those components do you see and interact with directly, compared to those that are “under the hood” and you never see?
- Have you ever accessed information on a mainframe? How was that different from accessing information stored on your local PC?
- What are some common operating systems and the differences among them?
- What are some common applications used by people in a variety of job situations?

Also, pay attention to the following key points:

- system components
- input and output devices
- types of computer systems
- operating system software
- utility software
- application software

Read Chapter 23 (“Hardware and Software Basics”) and then complete the following activity in Business Driven Technology:

- LearnSmart Chapter 23/Business Plug-in 3

Data Resource Management
Everything we do, from purchasing groceries at the store to applying for a new job, is stored in a database, whether directly or indirectly. By storing data in a way that it can be accessed again in a meaningful way, you harness the power of the database to analyze your clients’ habits, identify inefficiencies in manufacturing processes, track the performance of business units, and answer your boss’s questions with authority.

**Data Resource Management**

Databases store data on everything we do online. Some databases use information immediately to carry out current transactions, while others use historical data to help guide strategic decisions in the future. Either way, it is important to plan out what you are trying to accomplish in order to end up with a database that gives you what you need.

This topic addresses the following competency:

- **Competency 333.1.3: Data Resource Management**
  The graduate describes effective techniques for managing databases and data warehouses.

This topic highlights the following learning objectives:

- Recognize the features of the relational database model and relate it to working with a database.
- Recommend effective techniques for managing databases and data warehouses in the process of information management.

**Chapter 7: "Storing Organizational Information—Databases"**

In this chapter you will read about what a relational database is and how it is designed to carry out the day-to-day transactions of an organization. Planning correctly will help ensure you have the data you need when you need it, and all established business processes are followed correctly.

As you complete the listed material below, make sure you can answer the following questions:

- What is the purpose of primary and foreign keys in a relational database?
- How can a database be used to ensure business rules and processes are being followed correctly by system users?

Also, pay attention to the following key points:

- aspects of the relational database model
- how relational databases are used to carry out business functions
- quality and security of data

Read Chapter 7 ("Storing Organizational Information—Databases") and then complete the following activities in Business Driven Technology:
Chapter 8: "Accessing Organizational Information—Data Warehouse"

In this chapter you will read about how a data warehouse is designed to gather historical information that can be analyzed quickly and easily to facilitate decisions about how to improve business processes.

As you complete the listed material below, make sure you can answer the following questions:

- What are some useful tools for analyzing data stored in a data warehouse?
- Why is the structure of a data warehouse optimized for strategic analysis rather than operational transaction processing?

Also, pay attention to the following key points:

- the purpose of data warehouses and data marts
- aspects of the multidimensional database model
- using data to create and use business intelligence

Read Chapter 8 (“Accessing Organizational Information—Data Warehouse”) and then complete the following activities in Business Driven Technology:

- Chapter 8 Business Difficulties with Operational Databases
- Chapter 8 Using Data Marts for Business Analysis
- Chapter 8 Visualization
- Chapter 8 Case: Mining the Data Warehouse
- LearnSmart Chapter 8: Accessing Organizational Information—Data Warehouse
- Chapter 8 Quiz

Networking and E-Commerce

It is important to understand how your company uses public and private networks to communicate internally, with partners and suppliers, and with customers. The security and stability of your network is directly associated with the security and stability of your company.

In addition to understanding the technology that supports the network, it is vital to understand the e-commerce models that rely on that network. Some of the most successful companies are those who have mastered not only online sales to consumers but building a supply chain that provides just-in-time information about trends, inventory levels, and sales forecasts to suppliers and customers in order to smooth the flow of information, shipments, payments, and other
aspects of their business.

**Telecommunications, Networks, and the Internet**

There is power in stand-alone workstations, but the biggest advantage can be gained by using the Internet and other networks to share information with each other.

This topic addresses the following competency:

- **Competency 333.1.4: Networking and E-Commerce**
  The graduate explains the importance and effective applications of telecommunications, networking, the Internet, and e-commerce to business.

This topic highlights the following learning objectives:

- Explain how networking and emerging communications standards are used in business information systems.
- Explain networks and their types of components.
- Identify the technical aspects of the Internet.
- Recognize how the use of the Internet has affected the scope, implementation, and management of information systems.
- Detail the features and applications of various wireless applications.
- Recognize various Internet-based trends and technologies.

**Chapter 25: "Networks and Telecommunications"**

In this chapter, you will read about how as a society we are more connected than ever, from home users to high-speed business connections to mobile networks.

As you complete the listed material below, make sure you can answer the following questions:

- What is a network protocol, and why is it important?
- Why would some organizations use a peer-to-peer versus a client/server network?

Also, pay attention to the following key points:

- basic components of a network
- client/server and peer-to-peer networks
- the Internet

Read Chapter 25 ("Networks and Telecommunications") and then complete the following activities in *Business Driven Technology*:

- Connect Chapter 25/B5 Overview of a Connected World
- LearnSmart Chapter 25/Business Plug-in 5. Networks and Telecommunications

**Chapter 13: "Creating Innovative Organizations"**

In this chapter you will read about how the Internet has disrupted traditional business models
and created new ways of connecting to customers and suppliers.

As you complete the listed material below, make sure you can answer the following questions:

- How has the change from Web 1.0 to Web 2.0 affected individuals and companies?
- What is the biggest shift in Internet usage you have seen over the past 5 years?

Also, pay attention to the following key points:

- World Wide Web
- Web 1.0 to Web 2.0

Read Chapter 13 (“Creating Innovative Organizations”) in Business Driven Technology. Chapter 15: "Creating Collaborative Partnerships"

In this chapter, you will read about how individuals can harness the power of the network to collaborate with others and take advantage of multiple points of view, giving them the potential to work together to change the world.

As you complete the listed material below, make sure you can answer the following questions:

- What are some of the available tools for collaborating and communicating in a business environment?
- What is an example of how crowdsourcing has worked well to improve the way information systems function?

Also, pay attention to the following key points:

- characteristics and benefits of Web 2.0
- social networking
- collaboration tools

Read Chapter 15 (“Creating Collaborative Partnerships”) and then complete the following activities in Business Driven Technology:

- Chapter 15 Web 2.0: Advantages of Business 2.0
- Chapter 15 Networking Communities with Business 2.0
- Chapter 15 Business 2.0 Tools for Collaborating
- Chapter 15 Understanding Social
- Chapter 15 Advantages of Business 2.0
- Chapter 15 Tools for Collaboration

Chapter 16: "Integrating Wireless Technology in Business"

In this chapter, you will read about how there is a power in a high-speed, stable network connection, which traditional wired networks provide. Sometimes it is not feasible to run physical lines between locations, so fixed or mobile wireless solutions become an attractive option.
As you complete the listed material below, make sure you can answer the following questions:

- What are some common wireless communication technologies you use on a regular basis?
- What are the drawbacks of wireless? Why is it so popular even though there are many problems associated with it?

Also, pay attention to the following key points:

- types of wireless networks
- business applications of wireless
- mobility

Read Chapter 16 (“Integrating Wireless Technology in Business”) and then complete the following activities in *Business Driven Technology*:

- Chapter 16 Benefits and Challenges of a Connected World
- Chapter 16 Geographic Information Systems
- Chapter 16 Protecting Wireless Connections
- Chapter 16 Radio-Frequency Identification—Part 1
- Chapter 16 Radio-Frequency Identification—Part 2
- Chapter 16 Business Applications of Wireless Networks
- Chapter 16 Mobile Business: Cell Phones for Soldiers
- Chapter 16 Mobile Business: Twitter Takeover
- LearnSmart Chapter 16: Integrating Wireless Technology in Business
- Chapter 16 Quiz

**Chapter 32: "Global Trends"

In this chapter you will read about how the world is being changed by networks and other technologies.

As you complete the listed material below, make sure you can answer the following questions:

- What are some new jobs that exist today because of advances in networking and other technologies?
- What are some of the Internet-related trends that have the potential to change the way businesses function in the next decade?

Also, pay attention to the following key points:

- how societal shifts affect business
- how technology advances affect society
- the impact of the Internet

Read Chapter 32 (“Global Trends”) and then complete the following activities in *Business Driven Technology*.
E-Commerce
Networks are not just about sharing information but about actually carrying out business transactions online; in other words, e-commerce, the buying and selling of goods and services over the internet.

This topic addresses the following competency:

- **Competency 333.1.4: Networking and E-Commerce**
  The graduate explains the importance and effective applications of telecommunications, networking, the Internet, and e-commerce to business.

This topic highlights the following learning objectives:

- Describe the concept of e-business.
- Classify various e-business models.
- Detail the various tools of e-business.
- Identify the applications of e-business and challenges encountered.
- Relate emerging technology trends to the concept of an e-society.

Chapter 13: "Creating Innovative Organizations"

In this chapter, you will read about how the Internet has expanded the reach of businesses around the world. The internet improves the flow of information, connects companies to new suppliers, and ensures efficiency through increased competition.

As you complete the listed material below, make sure you can answer the following questions:

- *Mass customization* and *disintermediation* are big terms that don’t seem like they mean much, but how do they affect you and the things you buy online, or even in a brick-and-mortar store?
- What web metrics do you think are most important to a small online store? Would it be different than what a large, established retailer would want to measure?

Also, pay attention to the following key points:

- Internet innovation
- reducing the costs of multiple intermediaries
- measuring effectiveness

Review Chapter 13 (“Creating Innovative Organizations”) and then complete the following activities in *Business Driven Technology*:

- Chapter 13 Expanding the Global Reach of Ebusiness
Chapter 13 Understanding the Different Intermediaries
Chapter 13 Case: Failing to Innovate
LearnSmart Chapter 13: Creating Innovative Organizations
Chapter 13 Quiz

Chapter 14: "Ebusiness"

In this chapter you will read about how we can buy and sell online. Some individuals may just be trying to clean out the closet, while others are multi-million dollar operations.

As you complete the listed material below,

- Why is Search Engine Optimization so important for e-business? Is SEO cheating when it comes to fair business? What happens if your company doesn't do it?
- What are examples of the types of sales that would happen using each of the four most common e-business models?

Also, pay attention to the following key points:

- primary e-business models
- tools for facilitating e-business
- challenges of e-business

Read Chapter 14 ("Ebusiness") and then complete the following activities in Business Driven Technology:

- Chapter 14 Business-to-Consumer Business Forms
- Chapter 14 Searching the Web
- Chapter 14 e-business Models
- LearnSmart Chapter 14: Ebusiness
- Chapter 14 Quiz

Chapter 15: "Creating Collaborative Partnerships"

In this chapter you will read about how, by harnessing the power of the masses to collaborate and take advantage of multiple points of view, one has the potential to change the world.

As you complete the listed material below, make sure you can answer the following questions:

- As governments have gotten in on the e-business revolution, what kinds of changes have occurred in how they have adopted technology? How have those changes affected society?
- What are some of the problems traditional companies have in moving to the e-business marketplace?

Also, pay attention to the following key points:

- characteristics and benefits of Web 2.0
Read Chapter 15 (“Creating Collaborative Partnerships”) and then complete the following activities in *Business Driven Technology*:

- Chapter 15 The Challenges of Business 2.0
- Chapter 15 Web 3.0: Defining the Next Generation of Online Business Opportunities
- Chapter 15 Case: Social Media And Ashton Kutcher
- LearnSmart Chapter 15: Creating Collaborative Partnerships
- Chapter 15 Quiz

### Chapter 32: "Global Trends"

In this chapter you will read about how important technology innovations may impact organizations in the coming years.

As you complete the listed material below, make sure you can answer the following questions:

- How do the changes in the way the world functions affect the technology and business landscape?
- How could the technology advances discussed affect society?

Also, pay attention to the following key points:

- key trends in a changing world
- upcoming technologies

Read Chapter 32 (“Global Trends”) and then complete the following activities in *Business Driven Technology*:

- Chapter 32 Trends Shaping our Future
- Chapter 32 Technologies Shaping Our Future

### Decision Support and Artificial Intelligence

Customer buying habits are analyzed to determine what items to put on sale together or which coupons to publish each week. You may look up information online to help with homework problems, and then scores on the homework and end-of-year testing are stored in databases that are used to determine how federal and state funding are appropriated, and whether teacher contracts are renewed. An algorithm may drop you from consideration for a job before a human even sees your information, if a certain word isn’t present somewhere in your application materials. Some of these decisions are made automatically by the computer, while others are made by a person with the help of the computer analysis. Regardless of how decisions are made, it is clear that the data need to be high quality, and the algorithms used to analyze and present that information need to be solid so the actions taken have the desired result.
Decision Support and Artificial Intelligence
Decision making can make or break a company. Decisions need to be made faster than ever based on more information than ever and only the best technology tools will be able to facilitate those decisions in the most effective way.

This topic addresses the following competency:

- **Competency 333.1.5: Decision Support and Artificial Intelligence**
  The graduate evaluates the use of various decision support, decision analysis, and artificial intelligence systems in business.

This topic highlights the following learning objectives:

- Analyze the various types of decision-support systems.
- Categorize various analytical processing techniques.
- Apply decision analysis in the development of decision-support systems.
- Recognize various artificial intelligence technologies and their features.
- Describe how artificial intelligence technologies are used in business.

**Chapter 9: "Enabling the Organization—Decision Making"**

In this chapter you will read about how technology can help us to make decisions. Decision-support systems can give us that help. Artificial intelligence even makes it possible to have the decisions made for us.

As you complete the listed material below, make sure you can answer the following questions:

- What are some common systems used to make daily operational decisions?
- What are some common problems in business and how can artificial intelligence technology solve these problems?

Also, pay attention to the following key points:

- decision making
- decision-support systems
- artificial intelligence

Read Chapter 9 (“Enabling the Organization—Decision Making”) and then complete the following activities in **Business Driven Technology**:

- Chapter 9 Examples of Artificial Intelligence
- Chapter 9 The Decision Making Process
- Chapter 9 Making Business Decisions
- Chapter 9 Enhancing Decision Making with MIS
- Chapter 9, B2: FedEx: Decisions and Processes
- Chapter 9, B2: Business Process Reengineering: Netflix
Planning, Analysis, and Design in Systems Development

Software comes in many forms, from a simple single-user program installed on one computer to complex systems that coordinate the work of thousands of users across a variety of networks and devices. No matter how many lines of code or concurrent users, a software product can only be as good as its design. A systems analyst starts by reviewing the need for a new system and documenting the internal and external requirements, such as budget, user buy-in, and relevant government or industry regulations. If the case can be made to move forward, the system is designed to show how information is stored and transmitted throughout the system, how users interact with it, and how errors are prevented.

Planning, Analysis, and Design in Systems Development

A variety of methods may be used in development, depending on the nature of the system and the organization, but the method is generally an iterative process where the developers create the system according to the design, it is tested, and problems are fixed before moving on to the next phase. It is important to understand how this process occurs so the planning and design phases are fully supported and the specifications handed off to the developers provide a true and complete picture of the desired system.

This topic addresses the following competency:

- Competency 333.1.6: Planning, Analysis, and Design in Systems Development
  The graduate describes effective strategies for planning, analysis, and design in systems development.

This topic highlights the following learning objectives:

- Recognize the importance of investigation in the planning and analysis phases of systems development.
- Detail the process of systems design and the prototyping approach to design.
- Detail the key problems in system development projects.

Chapter 17: "Developing Software to Streamline Operations"

In this chapter you will read about how information systems are logical components that work together. The process used to develop an information system is based on logic. This logical process, called the system-development life cycle, breaks down a project into multiple phases that get increasingly detailed until the plans can be handed off to developers to build it according to the blueprints they are given.

As you complete the listed material below, make sure you can answer the following questions:

- Who is involved in the planning and analysis phases? How are those phases similar to and different from each other?
- How does the design phase differ from the planning and analysis phases? Why is it so
important that planning and analysis be done correctly in order for the design phase to be successful?

Also, pay attention to the following key points:

- Systems Development Life Cycle (SDLC) phases
- how planning, analysis, and design build on each other
- problems from not following the system-development life cycle

Read Chapter 17 (“Developing Software to Streamline Operations”) and then complete the following activities in *Business Driven Technology*:

- Chapter 17 The Systems Development Life Cycle
- Chapter 17 Systems Development Life Cycle 1
- Chapter 17 Systems Development Life Cycle 2
- Chapter 17 Different Forms of Testing
- Chapter 17 Different Methods of Implementation
- Chapter 17 Systems Development and Project Management: Entrepreneurship
- Chapter 17 Systems Development and Project Management: Beyond Metals
- Chapter 17 Case: Reducing Ambiguity in Business Requirements
- LearnSmart Chapter 17: Developing Software to Streamline Operations
- Chapter 17 Quiz

**Chapter 18: "Methodologies for Supporting Agile Organizations"**

In this chapter you will read about how the SDLC can be a comprehensive, one-cycle process or it can be a cyclical process that includes many small iterations. Regardless of the particular methodology used, the components of the SDLC still need to be applied properly.

As you complete the listed material below, make sure you can answer the following questions:

- In what type of situation would the waterfall methodology be the only possible solution?
- Why have many of the agile methods been increasingly adopted over the last few years?

Also, pay attention to the following key points:

- waterfall method
- agile methods

Read Chapter 18 (“Methodologies for Supporting Agile Organizations”) and then complete the following activities in *Business Driven Technology*:

- Chapter 18 Feasibility Studies
- LearnSmart Chapter 18: Methodologies for Supporting Agile Organizations
- Chapter 18 Quiz

**Chapter 19: "Managing Organizational Projects"**
In this chapter you will read about how it is important for any project to have a solid project management plan, as well as to pick the best project team. Effective management of the team will lead to adherence to the plan and development of the best system.

As you complete the listed material below, make sure you can answer the following questions:

- What is the role of feasibility studies in putting together a successful project plan?
- What project planning diagrams could be useful at which stages of the system-development life cycle?

Also, pay attention to the following key points:

- project management
- Gantt charts and the critical path
- triple constraint

Read Chapter 19 ("Managing Organizational Projects") and then complete the following activities in Business Driven Technology:

- Chapter 19 Using Project Management to Deliver Successful Projects
- Chapter 19 PMBOK Elements of Project Management Parts 1
- Chapter 19 PMBOK Elements of Project Management Parts 2
- Chapter 19 Planning Projects

### Implementing and Sustaining Systems

If IT is to be a true strategic partner in your business, it is essential that you are able to measure the value that IT systems add. When it comes time to upgrade, the time and expense of doing so is large enough that you need to get it right the first time. Knowing that your competitors are moving forward with IT initiatives that make them better able to respond to customer needs means that you must act quickly, so your company is not left behind.

**Implementing and Sustaining Systems**

By using the techniques covered in this section, you will be able to implement the hardware, software, processes, networks, and other aspects of a new information system with proven levels of performance. Using the appropriate combination of cost-benefit analysis and benchmarking performance against competitors and industry standards, your company can select the best system. Implementing the chosen system with proven change-management techniques will ensure the system is accepted by users and does not cause disruptions to business operations.

This topic addresses the following competency:

- **Competency 333.1.7: Implementing and Sustaining Systems**
  The graduate describes effective strategies for the implementation and maintenance of information systems.
This topic highlights the following learning objectives:

- Describe the process of implementing information systems.
- Identify methods of measuring the effectiveness of hardware, software, and services implementation.
- Detail the processes of testing, data conversion, documentation, training, and business continuity planning.

Chapter 24: "MIS Infrastructures"

In this chapter you will read about how much of business depends on technology to keep it running and that it is imperative that the technology infrastructure be stable and available.

As you complete the listed material below, make sure you can answer the following questions:

- What are the similarities and differences between scalability and reliability?
- How do disaster recovery and backups play into business continuity planning? What else is an important component of a business continuity plan?

Also, pay attention to the following key points:

- business continuity planning, backups, and disaster recovery
- agile infrastructure
- virtualization

Read Chapter 24/B4 (“MIS Infrastructures”) and then complete the following activities in Business Driven Technology:

- Chapter 24/Plug-in B4: Agile MIS Infrastructure
- Chapter 24/Plug-in B4 Information MIS Infrastructure
- Chapter 24/Plug-in B4: Infrastructures and Sustainable Technologies: Cloud Computing

Chapter 29: "Sustainable MIS Infrastructures"

In this chapter you will read about how technology needs to be sustainable, from an environmental as well as a business perspective.

As you complete the listed material below, make sure you can answer the following questions:

- What is the big benefit of virtualization over deploying standalone servers?
- What are the key environmental impacts of technology use and how do current technology advances mitigate those issues?

Also, pay attention to the following key points:

- mitigating environmental impacts
- cloud computing and virtualization
- service-oriented architecture
Read Chapter 29 (“Sustainable MIS Infrastructures”) and then complete the following activity in Business Driven Technology:

- LearnSmart Chapter 29/Business Plug-in 9

Chapter 4: "Measuring the Success of Strategic Initiatives"

In this chapter you will read about how entire companies and individual departments use data and appropriate metrics to help them know if they are meeting their goals.

As you complete the listed material below, make sure you can answer the following questions:

- If you are trying to increase sales for your department, what are some KPIs that would help determine if you are on track to meet your goals?
- Why is conversion rate so important, and what variables does it affect?

Also, pay attention to the following key points:

- critical success factors and key performance indicators
- efficiency and effectiveness metrics
- Web metrics

Read Chapter 4 (“Measuring the Success of Strategic Initiatives”) and then complete the following activities in Business Driven Technology:

- Chapter 4 Critical Success Factors and Key Performance Indicators
- Chapter 4 Efficiency and Effectiveness Metrics
- LearnSmart Chapter 4: Measuring the Success of Strategic Initiatives
- Chapter 4 Quiz

Chapter 17: "Developing Software to Streamline Operations"

In this chapter you will read about what happens after a system has been built in the first half of the system development life cycle. The newly created system is testing to ensure it meets the established business requirements, and then it is rolled out to users.

As you complete the listed material below, make sure you can answer the following questions:

- What are the types of testing and what role does each play in the system-development life cycle?
- What are the differences among the various implementation methods discussed?

Also, pay attention to the following key points:

- testing methods
- implementation methods

Review Chapter 17 (“Developing Software to Streamline Operations”) and then complete the
following activities in *Business Driven Technology*:

- Chapter 17 Different Forms of Testing
- Chapter 17 Different Methods of Implementation

**Managing Information Technology**

There are many roles required to perform the varied tasks that fall under the IT department. With the rate of technology change, the IT department seems to always be in the middle of adjusting, reorganizing, and updating themselves and the company. It is important for business leaders to understand the IT department organization in order to include appropriate representatives from IT in discussions about business strategy and upcoming projects.

**Managing Information Technology**

A balance has to be made between hiring internal IT employees who are loyal and who know the business inside and out and bringing in outside experts who are up to date on the latest technology. Utilizing some combination of the two can help increase the quality and responsiveness of your IT department while controlling costs.

This topic addresses the following competency:

- **Competency 333.1.8: Managing Information Technology**
  The graduate determines best practices for managing information technology in businesses and the particular challenges of global information technology implementation.

This topic highlights the following learning objectives:

- Determine how businesses can effectively implement strategies of outsourcing and offshoring.
- Analyze the challenges, concerns, and effective approaches of managing global information technology.

**Chapter 19: "Managing Organizational Projects"**

In this chapter you will read about how it is important for any project to have a solid project-management plan, as well as to pick the best project team. This team may come from inside or outside the company. Either way, effective management of the team will lead to adherence to the plan and development of the best system.

As you complete the listed material below, make sure you can answer the following questions:

- What do you gain by hiring an outside company to build a system for you?
- What do you lose by outsourcing?
- What are the challenges and benefits of offshoring?

Also, pay attention to the following key points:
● project management
● Gantt charts and the critical path
● outsourcing

Read Chapter 19 ("Managing Organizational Projects") and then complete the following activities in Business Driven Technology:

● Chapter 19 Outsourcing Projects
● Chapter 19 Outsourcing Projects
● Chapter 19 Planning Projects
● Chapter 19 Project Outsourcing
● LearnSmart Chapter 19: Managing Organizational Projects
● Chapter 19 Quiz

Chapter 31: "Global Information Systems"

In this chapter you will read about how even though technology knocks down barriers around the world, there remain logistical and political barriers. Being aware of these challenges will allow you to address them directly rather than be surprised when your international expansion effort fails.

As you complete the listed material below, make sure you can answer the following questions:

● What are some of the key business challenges when expanding operations in a global technology environment?
● What important differences in privacy expectations and laws exist around the globe?

Also, pay attention to the following key points:

● cultural, political, and economic challenges of globalization
● global IT business drivers
● differences in privacy laws and expectations around the globe

Read Chapter 31/B11 ("Global Information Systems") and then complete the following activity in Business Driven Technology:

● LearnSmart Chapter 31/Business Plug-In 11. Global Information Systems

Information Security

In order to keep your company protected against the multitude of security threats that are out there, it is imperative that you know what those threats are. Security threats come in many forms, from some of the low-tech social engineering techniques to the high-tech cracking of encryption keys. Whether the bad guys harness the power of a supercomputer to force entry into your system through the network, or dress up nicely and ask politely for the server room like they’re supposed to be there, the end result is that they can steal or destroy your data quickly once they have gained access to it.
Management Challenges: Security

Once you know how you can be attacked, the next step is understanding how to implement multiple levels of protection against those threats. Block physical and network access to information and systems, and encrypt the information in case they do get inside. Security measures such as access logs and audits can protect against malicious or incompetent employees who do have legitimate access to your systems. Of course, hardware occasionally fails, so it is important that backups and redundant hardware provide a defense against this type of risk as well.

This topic addresses the following competency:

- **Competency 333.1.9: Information Security**
  The graduate describes the best practices for ensuring information security in enterprise information systems.

This topic highlights the following learning objectives:

- Differentiate among different sources of threats to information security.
- Identify techniques for mitigating common security risks.

**Chapter 26: "Information Security"**

In this chapter you will read about the importance of information security in business today. You should be aware of the threats your company faces and how to address these threats.

As you complete the listed material below, make sure you can answer the following questions:

- What are some common security threats?
- What measures can be used to best counteract them?

Also, pay attention to the following key points:

- hackers and viruses
- social engineering and training users to be aware of common attacks
- using technology to enforce policies and mitigate threats

Read Chapter 26/B6 ("Information Security") and then complete the following activities in *Business Driven Technology*:

- Chapter 26/Plug-In B6, B7: Ethics and Information Security: The Motley Fool
- Chapter 26/Plug-In B6, B7: Information Ethics and Security: Tim O’Reilly on Lessons from Facebook and Privacy
- Chapter 26/Plug-In B6: The Second Line of Defense: Technology
- LearnSmart Chapter 26/Business Plug-in 6. Information Security

**Ethics, Privacy, and Societal Effects**
With technology developing faster than laws can keep up, society is constantly faced with ethical issues to deal with. Employees may waste company resources, and employers may track employee or customer behavior without their knowledge or consent. Even if nothing overtly illegal is done, there still exist ethical responsibilities to respect the rights of others.

**Management Challenges: Ethics, Privacy, and Societal Effects**

When creating policies and practices or implementing new systems, it is important to both respect others and obey the law while protecting company assets and gathering information that is useful in making the company more efficient. While there is no one right way to do things, by being aware of specific legal requirements related to medical records, school records, and other information protected by privacy laws as well as how policy decisions affect others, the appropriate balance between respect and productivity can be achieved.

This topic addresses the following competency:

- **Competency 333.1.10: Ethics, Privacy, and Societal Effects**
  The graduate describes the best practices for ensuring privacy, averting ethical issues related to intellectual property, and minimizing negative societal effects in the management of information systems.

This topic highlights the following learning objectives:

- Determine how ethical guidelines can avert ethical issues related to information technology and intellectual property.
- Explain the right to privacy in the context of information technology, and relate it to privacy laws.
- Describe the impact of business applications of information technology in the areas of employment, working conditions, individuality, and health.

**Chapter 27: "Ethics"**

In this chapter you will read about the importance of personal and organizational ethics and policies, as well as several information-related laws.

As you complete the listed material below, make sure you can answer the following questions:

- How do ethical guidelines stop ethical issues related to information technology?
- Why are individual ethics and organizational policies necessary if we already have information laws to protect us?

Also, pay attention to the following key points:

- intellectual property
- information laws
- information policies

Read Chapter 27/B7 (“Ethics”) and then complete the following activities in *Business Driven*.
Final Steps

Practice Test

Complete the following activity in Business Driven Technology:

- **Practice Test**

After completing this practice test:

- review the feedback provided for each question,
- use the e-text and Connect activities to get help with any content questions, and
- retake the practice test as needed.

Congratulations on completing the activities in this course! This course has prepared you to complete the assessments associated with this course. If you have not already been directed to complete the assessments, schedule and complete your assessments now.