

Chapter 1: Information Systems: An Overview

TRUE/FALSE

1. The most common personal digital assistant is a smartphone.

ANS: T PTS: 1 REF: 4 NAT: BUSPROG: Technology
TOP: A-head: Computers and Information Systems in Daily Life
KEY: Bloom's: Knowledge

2. Twitter is an example of a management information system (MIS).

ANS: F PTS: 1 REF: 4 NAT: BUSPROG: Technology
TOP: A-head: Computers and Information Systems in Daily Life
KEY: Bloom's: Comprehension

3. The terms “information systems” and “information technologies” are used interchangeably.

ANS: T PTS: 1 REF: 6 NAT: BUSPROG: Technology
TOP: A-head: Computers and Information Systems in Daily Life
KEY: Bloom's: Knowledge

4. Skill in using word processing software is an example of information literacy.

ANS: F PTS: 1 REF: 6 NAT: BUSPROG: Technology
TOP: A-head: Computer Literacy and Information Literacy KEY: Bloom's: Comprehension

5. Business Intelligence (BI) includes historical views and predictive views of business operations.

ANS: T PTS: 1 REF: 6 NAT: BUSPROG: Technology
TOP: A-head: Computer Literacy and Information Literacy KEY: Bloom's: Knowledge

6. Computers are most beneficial in transaction-processing operations.

ANS: T PTS: 1 REF: 7 NAT: BUSPROG: Technology
TOP: A-head: The Beginning: Transaction-Processing Systems
KEY: Bloom's: Knowledge

7. The software component of the management information system (MIS) includes input, output, and memory devices.

ANS: F PTS: 1 REF: 7 NAT: BUSPROG: Technology
TOP: A-head: Management Information Systems KEY: Bloom's: Knowledge

8. In an MIS application, processes are usually methods for performing a task.

ANS: T PTS: 1 REF: 7 NAT: BUSPROG: Technology
TOP: A-head: Management Information Systems KEY: Bloom's: Knowledge

9. In designing an MIS, the first task is to clearly define the system's objectives.

ANS: T PTS: 1 REF: 7 NAT: BUSPROG: Technology
TOP: A-head: Management Information Systems KEY: Bloom's: Knowledge

10. The data component of an information system is considered the output to the system.

ANS: F PTS: 1 REF: 8 NAT: BUSPROG: Technology
TOP: A-head: Major Components of an Information System KEY: Bloom's: Knowledge

11. Generally, there are three sources of data: internal, external, and generated.

ANS: F PTS: 1 REF: 8 NAT: BUSPROG: Technology
TOP: A-head: Major Components of an Information System KEY: Bloom's: Knowledge

12. Customers, competitors, and suppliers are examples of internal data sources.

ANS: F PTS: 1 REF: 8 NAT: BUSPROG: Analytic
TOP: A-head: Major Components of an Information System KEY: Bloom's: Knowledge

13. A database management system (DBMS) is used to create, organize, and manage databases.

ANS: T PTS: 1 REF: 9 NAT: BUSPROG: Technology
TOP: A-head: Major Components of an Information System KEY: Bloom's: Knowledge

14. The quality of information is determined by its usefulness to users.

ANS: T PTS: 1 REF: 9 NAT: BUSPROG: Analytic
TOP: A-head: Major Components of an Information System KEY: Bloom's: Knowledge

15. Most information systems avoid using graphical user interfaces.

ANS: F PTS: 1 REF: 9 NAT: BUSPROG: Technology
TOP: A-head: Major Components of an Information System KEY: Bloom's: Knowledge

16. When solving problems, the users of an information system must avoid using informal information—such as rumors, unconfirmed reports, and stories.

ANS: F PTS: 1 REF: 10 NAT: BUSPROG: Technology
TOP: A-head: Major Components of an Information System KEY: Bloom's: Knowledge

17. Timely, relevant, and accurate information is a critical tool for enhancing a company's competitive position in the marketplace.

ANS: T PTS: 1 REF: 11 NAT: BUSPROG: Analytic
TOP: A-head: Using Information Systems and Information Technologies
KEY: Bloom's: Knowledge

18. Intranets are often used to provide basic HR functions, such as employees checking how much vacation time they have left.

ANS: T PTS: 1 REF: 11 NAT: BUSPROG: Technology
TOP: A-head: Using Information Systems and Information Technologies
KEY: Bloom's: Knowledge

19. An effective financial information system (FIS) should provide timely, accurate, and integrated information about the marketing mix.

ANS: F PTS: 1 REF: 12 NAT: BUSPROG: Technology
TOP: A-head: Using Information Systems and Information Technologies
KEY: Bloom's: Knowledge

20. A personnel information system helps in choosing the best job candidate.

ANS: T PTS: 1 REF: 12 NAT: BUSPROG: Technology
TOP: A-head: Using Information Systems and Information Technologies
KEY: Bloom's: Knowledge

21. The focus of a top-line strategy for successfully competing in a marketplace is improving efficiency by reducing overall costs.

ANS: F PTS: 1 REF: 13 NAT: BUSPROG: Analytic
TOP: A-head: Using Information Systems and Information Technologies
KEY: Bloom's: Knowledge

22. Buyer power is high when customers have few choices and low when they have many choices.

ANS: F PTS: 1 REF: 15 NAT: BUSPROG: Analytic
TOP: A-head: Using Information Systems and Information Technologies
KEY: Bloom's: Knowledge

23. Rivalry among existing competitors is high when many competitors occupy the same marketplace position.

ANS: T PTS: 1 REF: 16 NAT: BUSPROG: Analytic
TOP: A-head: Using Information Systems and Information Technologies
KEY: Bloom's: Knowledge

24. In the context of an information systems job, a chief technology officer oversees long-range planning and keeps an eye on new developments in the field that can affect a company's success.

ANS: T PTS: 1 REF: 16 NAT: BUSPROG: Analytic
TOP: A-head: The IT Job Market KEY: Bloom's: Knowledge

25. In the context of an information systems job, a database administrator writes computer programs or software segments that allow the information system to perform a specific task.

ANS: F PTS: 1 REF: 17 NAT: BUSPROG: Analytic
TOP: A-head: The IT Job Market KEY: Bloom's: Knowledge

MULTIPLE CHOICE

1. A typical PDA includes a(n) _____.
a. external monitor c. mouse
b. calendar d. external keyboard

ANS: B PTS: 1 REF: 4 NAT: BUSPROG: Technology
TOP: A-head: Computers and Information Systems in Daily Life
KEY: Bloom's: Knowledge

2. ____ is a social networking Web site.
- a. Twitter
 - b. Google chrome
 - c. Bing
 - d. Droid

ANS: A PTS: 1 REF: 4 NAT: BUSPROG: Technology
TOP: A-head: Computers and Information Systems in Daily Life
KEY: Bloom's: Knowledge

3. ____ is understanding the role of information in generating and using business intelligence.
- a. Computer literacy
 - b. Information literacy
 - c. Information security
 - d. Information coding

ANS: B PTS: 1 REF: 6 NAT: BUSPROG: Analytic
TOP: A-head: Computer Literacy and Information Literacy KEY: Bloom's: Knowledge

4. ____ is an example of transaction-processing system.
- a. Social networking
 - b. Business intelligence
 - c. Automated payroll
 - d. Database

ANS: C PTS: 1 REF: 7 NAT: BUSPROG: Technology
TOP: A-head: The Beginning: Transaction-Processing Systems
KEY: Bloom's: Knowledge

5. Management information system's (MIS) ____ include programs developed in-house.
- a. human elements
 - b. data processes
 - c. hardware components
 - d. software components

ANS: D PTS: 1 REF: 7 NAT: BUSPROG: Technology
TOP: A-head: Management Information Systems KEY: Bloom's: Knowledge

6. In designing a management information system, the first task is to define the system's ____ clearly.
- a. objectives
 - b. database
 - c. hardware components
 - d. users

ANS: A PTS: 1 REF: 7 NAT: BUSPROG: Technology
TOP: A-head: Management Information Systems KEY: Bloom's: Knowledge

7. ____ are an example of internal source of data for an information system.
- a. Personnel records
 - b. Population statistics
 - c. Economic conditions
 - d. Competitors

ANS: A PTS: 1 REF: 8 NAT: BUSPROG: Analytic
TOP: A-head: Major Components of an Information System KEY: Bloom's: Knowledge

8. ____ are an external data source of an information system.
- a. Inventory reports
 - b. Personnel records
 - c. Labor statistics
 - d. Sales records

ANS: C PTS: 1 REF: 8 NAT: BUSPROG: Analytic
TOP: A-head: Major Components of an Information System KEY: Bloom's: Knowledge

9. Microsoft Access is an example of _____ in an information system.
- a. internal data
 - b. external data
 - c. database management system
 - d. knowledge base management system

ANS: C PTS: 1 REF: 9 NAT: BUSPROG: Technology
TOP: A-head: Major Components of an Information System KEY: Bloom's: Comprehension

10. The output of an information system is _____.
- a. data
 - b. a database
 - c. a process
 - d. information

ANS: D PTS: 1 REF: 9 NAT: BUSPROG: Analytic
TOP: A-head: Major Components of an Information System KEY: Bloom's: Knowledge

11. The purpose of an information system's _____ component is generating the most useful type of information for making decisions.
- a. process
 - b. internal data
 - c. external data
 - d. database

ANS: A PTS: 1 REF: 9 NAT: BUSPROG: Analytic
TOP: A-head: Major Components of an Information System KEY: Bloom's: Knowledge

12. The four *M*s of resources are _____.
- a. management, motivation, manpower, and monitoring
 - b. materials, money, modeling, and monitoring
 - c. manpower, machinery, materials, and money
 - d. manpower, monitoring, movement, and modeling

ANS: C PTS: 1 REF: 11 NAT: BUSPROG: Analytic
TOP: A-head: Using Information Systems and Information Technologies
KEY: Bloom's: Knowledge

13. Scheduling and assigning employees might be handled by a _____.
- a. personnel information system
 - b. manufacturing information system
 - c. financial information system
 - d. logistics information system

ANS: A PTS: 1 REF: 12 NAT: BUSPROG: Technology
TOP: A-head: Using Information Systems and Information Technologies
KEY: Bloom's: Knowledge

14. Managers could use a _____ to assess the effect on final product costs of a nine percent increase in raw materials.
- a. human resource information system
 - b. manufacturing information system
 - c. financial information system
 - d. marketing information system

ANS: B PTS: 1 REF: 12 NAT: BUSPROG: Technology
TOP: A-head: Using Information Systems and Information Technologies
KEY: Bloom's: Knowledge

15. _____ is one of the strategies of Michael Porter's three strategies for successfully competing in the marketplace.
- a. Groupthink
 - b. Emotion
 - c. Simulation
 - d. Focus

ANS: D PTS: 1 REF: 13 NAT: BUSPROG: Analytic

TOP: A-head: Using Information Systems and Information Technologies
KEY: Bloom's: Knowledge

16. A successful _____ program helps improve client service and create a long-term relationship between an organization and its clients.
- a. customer relationship management
 - b. database management
 - c. enterprise management
 - d. supply chain management

ANS: A PTS: 1 REF: 13 NAT: BUSPROG: Technology
TOP: A-head: Using Information Systems and Information Technologies
KEY: Bloom's: Knowledge

17. In accordance with Porter's Five Forces model, _____ power is high when customers have fewer options and low when customers have more options.
- a. buyer
 - b. prospect
 - c. user
 - d. supplier

ANS: D PTS: 1 REF: 15 NAT: BUSPROG: Analytic
TOP: A-head: Using Information Systems and Information Technologies
KEY: Bloom's: Knowledge

18. Online brokerage firms operate in a highly combative and ambitious environment, so they use information technologies to make their services more unique in order to combat _____.
- a. supplier power
 - b. buyer power
 - c. rivalry among existing competitors
 - d. the threat of new entrants

ANS: C PTS: 1 REF: 16 NAT: BUSPROG: Analytic
TOP: A-head: Using Information Systems and Information Technologies
KEY: Bloom's: Knowledge

19. Within the context of the various categories of IT jobs, a _____ must have knowledge and understanding of data warehouse and data-mining tools.
- a. systems mining analyst
 - b. data design officer
 - c. webmaster
 - d. database administrator

ANS: D PTS: 1 REF: 17 NAT: BUSPROG: Analytic
TOP: A-head: The IT Job Market KEY: Bloom's: Knowledge

20. Future progress in _____ includes further development in natural language processing that should make information systems easier to use.
- a. artificial intelligence
 - b. computer literacy
 - c. personal computing power
 - d. computer criminals

ANS: A PTS: 1 REF: 17 NAT: BUSPROG: Technology
TOP: A-head: Outlook for the Future KEY: Bloom's: Knowledge

COMPLETION

1. In grocery and retail stores, a(n) _____ system speeds up service by reading the universal product codes (UPCs) on items in a shopping cart.

ANS:
point-of-sale (POS)

point-of-sale
POS

PTS: 1 REF: 3 NAT: BUSPROG: Technology
TOP: A-head: Computers and Information Systems in Daily Life
KEY: Bloom's: Knowledge

2. Computer _____ means having a basic knowledge of hardware and software, the Internet, and collaboration tools and technologies.

ANS: literacy

PTS: 1 REF: 6 NAT: BUSPROG: Technology
TOP: A-head: Computer Literacy and Information Literacy KEY: Bloom's: Knowledge

3. The major reason for using transaction-processing systems in an organization is _____.

ANS: cost reduction

PTS: 1 REF: 7 NAT: BUSPROG: Technology
TOP: A-head: The Beginning: Transaction-Processing Systems
KEY: Bloom's: Knowledge

4. A(n) _____ is an organized integration of hardware and software technologies, data processes, and human elements designed to produce timely, integrated, relevant, accurate, and useful information for decision making purposes.

ANS:
management information system (MIS)
management information system
MIS

PTS: 1 REF: 7 NAT: BUSPROG: Technology
TOP: A-head: Management Information Systems KEY: Bloom's: Knowledge

5. The _____ component of an information system is considered the input to the system.

ANS: data

PTS: 1 REF: 8 NAT: BUSPROG: Technology
TOP: A-head: Major Components of an Information System KEY: Bloom's: Knowledge

6. A(n) _____ is the heart of an information system.

ANS: database

PTS: 1 REF: 9 NAT: BUSPROG: Technology
TOP: A-head: Major Components of an Information System KEY: Bloom's: Knowledge

7. The purpose of an information system's _____ component is generating the most useful type of information for making decisions.

ANS: process

PTS: 1 REF: 9 NAT: BUSPROG: Technology
TOP: A-head: Major Components of an Information System KEY: Bloom's: Knowledge

8. The ultimate goal of a(n) _____ is to generate business intelligence (BI).

ANS: information system

PTS: 1 REF: 10 NAT: BUSPROG: Technology
TOP: A-head: Major Components of an Information System KEY: Bloom's: Knowledge

9. The Internet is an example of an information _____.

ANS: technology

PTS: 1 REF: 10-11 NAT: BUSPROG: Technology
TOP: A-head: Using Information Systems and Information Technologies
KEY: Bloom's: Knowledge

10. A(n) _____ is designed to reduce the cost of transporting materials while maintaining safe and reliable delivery.

ANS:
logistics information system (LIS)
logistics information system
LIS

PTS: 1 REF: 12 NAT: BUSPROG: Technology
TOP: A-head: Using Information Systems and Information Technologies
KEY: Bloom's: Knowledge

11. The goal of a(n) _____ is to provide information to financial executives in a timely manner.

ANS:
financial information system (FIS)
financial information system
FIS

PTS: 1 REF: 12 NAT: BUSPROG: Technology
TOP: A-head: Using Information Systems and Information Technologies
KEY: Bloom's: Knowledge

12. The Five Forces Model was created by _____.

ANS:
Michael Porter
Porter

PTS: 1 REF: 14 NAT: BUSPROG: Analytic
TOP: A-head: Using Information Systems and Information Technologies
KEY: Bloom's: Knowledge

13. The top information systems job belongs to the _____.

ANS:
chief technology officer (CTO)/ chief information officer (CIO)
chief technology officer/ chief information officer
CTO/CTO

PTS: 1 REF: 16 NAT: BUSPROG: Analytic
TOP: A-head: The IT Job Market KEY: Bloom's: Knowledge

14. In the context of the popular jobs in the information system's field, part of the _____'s responsibility is to provide network and cybersecurity.

ANS: network administrator

PTS: 1 REF: 17 NAT: BUSPROG: Analytic
TOP: A-head: The IT Job Market KEY: Bloom's: Knowledge

15. In the context of the popular jobs in the information system's field, a (n) _____ designs and maintains the organization's Web site.

ANS: webmaster

PTS: 1 REF: 17 NAT: BUSPROG: Analytic
TOP: A-head: The IT Job Market KEY: Bloom's: Knowledge

SHORT ANSWER

1. What are some ways in which students come into contact with information systems?

ANS:
Students use computers and office suite software and might take online classes. Computers are often used to grade exam answers and generate detailed reports comparing the performance of each student in a class. Computers and information systems also calculate grades and GPAs and can deliver this information to students.

PTS: 1 REF: 3 NAT: BUSPROG: Analytic
TOP: A-head: Computers and Information Systems in Daily Life
KEY: Bloom's: Knowledge

2. How can banks use computers and information systems?

ANS:
Banks may use computers and information systems for generating a customer's monthly statement, running ATM machines, and for many banking activities.

PTS: 1 REF: 3 NAT: BUSPROG: Analytic

TOP: A-head: Computers and Information Systems in Daily Life
KEY: Bloom's: Knowledge

3. How do organizations use social networking sites?

ANS:

Organizations use social networking sites to give customers up-to-date information and even how-to support via videos.

PTS: 1 REF: 4 NAT: BUSPROG: Analytic
TOP: A-head: Computers and Information Systems in Daily Life
KEY: Bloom's: Knowledge

4. Compare information systems and information technologies.

ANS:

Information systems are broader in scope than information technologies, but the two overlap in many areas. Both are used to help organizations be more competitive and to improve their overall efficiency and effectiveness. Information technologies offer many advantages for improving decision making but involve some challenges, too, such as security and privacy issues.

PTS: 1 REF: 6 NAT: BUSPROG: Technology
TOP: A-head: Computers and Information Systems in Daily Life
KEY: Bloom's: Knowledge

5. Give an example of how an MIS might be used in the public sector.

ANS:

In the public sector, an MIS for a police department, for example, could provide information such as crime statistics, crime forecasts, and allocation of police units. Management can examine these statistics to spot increases and decreases in crime rates or types of crimes and analyze this data to determine future deployment of law enforcement personnel.

PTS: 1 REF: 7 NAT: BUSPROG: Technology
TOP: A-head: Management Information Systems KEY: Bloom's: Knowledge

6. List four qualities information must have to make it useful.

ANS:

To be useful, information must have the following qualities:

Timeliness

Integration with other data and information

Consistency and accuracy

Relevance

PTS: 1 REF: 9 NAT: BUSPROG: Analytic
TOP: A-head: Major Components of an Information System KEY: Bloom's: Knowledge

7. Describe how a personnel information system (PIS) helps decision makers.

ANS:

A personnel information system (PIS) or human resource information system (HRIS) is designed to provide information that helps decision makers in personnel carry out their tasks more effectively.

PTS: 1 REF: 11 NAT: BUSPROG: Technology
TOP: A-head: Using Information Systems and Information Technologies
KEY: Bloom's: Knowledge

8. Explain the main difference between an intranet and the Internet.

ANS:

The main difference between an intranet and the Internet is that intranets are private and the Internet is public.

PTS: 1 REF: 12 NAT: BUSPROG: Technology
TOP: A-head: Using Information Systems and Information Technologies
KEY: Bloom's: Knowledge

9. Define and describe a manufacturing information system (MFIS).

ANS:

A manufacturing information system (MFIS) is used to manage manufacturing resources so that companies can reduce manufacturing costs, increase product quality and make better inventory decisions. MFISs can perform many types of analysis with a high degree of timeliness and accuracy.

PTS: 1 REF: 12 NAT: BUSPROG: Technology
TOP: A-head: Using Information Systems and Information Technologies
KEY: Bloom's: Knowledge

10. Explain the difference in focus for a bottom-line strategy and a top-line strategy.

ANS:

The focus of a bottom-line strategy is improving efficiency by reducing overall costs. A top-line strategy focuses on generating new revenue by offering new products and services to customers or increasing revenue by selling existing products and services to new customers.

PTS: 1 REF: 13 NAT: BUSPROG: Analytic
TOP: A-head: Using Information Systems and Information Technologies
KEY: Bloom's: Knowledge

11. How might an organization combat the threat of new entrants?

ANS:

Organizations often use focus strategies to ensure that threat of new entrants remains low. For example, developing a search engine that could compete successfully with Google would be difficult.

PTS: 1 REF: 16 NAT: BUSPROG: Analytic
TOP: A-head: Using Information Systems and Information Technologies
KEY: Bloom's: Knowledge

12. Describe the role of the chief privacy officer.

ANS:

The chief privacy officer is an executive position that includes responsibility for managing the risks and business impacts of privacy laws and policies.

PTS: 1 REF: 16 NAT: BUSPROG: Analytic
TOP: A-head: The IT Job Market KEY: Bloom's: Knowledge

13. Describe the role of the systems analyst and the knowledge required for the position.

ANS:

The systems analyst is responsible for the design and implementation of information systems. In addition to computer knowledge and an information systems background, this position requires a thorough understanding of business systems and functional areas within a business organization.

PTS: 1 REF: 16-17 NAT: BUSPROG: Analytic
TOP: A-head: The IT Job Market KEY: Bloom's: Knowledge

14. Describe how networking technologies will improve in the future.

ANS:

Networking technologies will improve, so connecting computers will be easier, and sending information from one location to another will be faster. Compatibility issues between networks will become more manageable, and integrating voice, data, and images on the same transmission medium will improve communication quality and information delivery.

PTS: 1 REF: 17 NAT: BUSPROG: Technology
TOP: A-head: Outlook for the Future KEY: Bloom's: Knowledge

15. Describe the impact of Internet growth in the future.

ANS:

Internet growth and acceptance will continue, which will put small and large organizations on the same footing, regardless of their financial status. Internet growth will also make e-collaboration easier, despite geographical distances.

PTS: 1 REF: 17 NAT: BUSPROG: Technology
TOP: A-head: Outlook for the Future KEY: Bloom's: Knowledge

ESSAY

1. What are personal digital assistants (PDAs) and smartphones?

ANS:

A typical PDA includes a calendar, address book, and task-list programs; more advanced PDAs often allow for wireless connection to the Internet and have built-in MP3 players. The most common PDA is a smartphone (such as an iPhone, Droid, or a Blackberry). Smartphones are mobile phones with advanced capabilities, much like a mini PC. They include e-mail and Web-browsing features, and most have a built-in keyboard or an external USB keyboard.

PTS: 1 REF: 4 NAT: BUSPROG: Technology
TOP: A-head: Computers and Information Systems in Daily Life
KEY: Bloom's: Knowledge

2. What should a knowledge worker know about Business Intelligence?

ANS:

- a) Knowledge workers should know the following:
- b) Internal and external sources of data
- c) How data is collected
- d) Why data is collected
- e) What type of data should be collected
- f) How data is converted to information and eventually to business intelligence
- g) How data should be indexed and updated
- h) How data and information should be used to gain a competitive advantage

PTS: 1 REF: 6 NAT: BUSPROG: Technology
TOP: A-head: Computer Literacy and Information Literacy KEY: Bloom's: Knowledge

3. What is a database? What role does a database play in an information system?

ANS:

A database, the heart of an information system, is a collection of all relevant data organized in a series of integrated files. A comprehensive database is essential for the success of any information system. To create, organize, and manage databases, a database management system (DBMS) is used, such as Microsoft Access or FileMaker Pro for home or small-office use. In a large organization, a DBMS, such as Oracle or IBM DB2, might be used.

Databases are also important for reducing personnel time needed to gather, process, and interpret data manually. With a computerized database and a DBMS, data can be treated as a common resource that's easy to access and use.

PTS: 1 REF: 9 NAT: BUSPROG: Technology
TOP: A-head: Major Components of an Information System KEY: Bloom's: Knowledge

4. What types of decisions are supported by a logistics information system(LIS)?

ANS:

The following are a few examples of decisions supported by an LIS:

- a) Improving routing and delivery schedules
- b) Selecting the best modes of transportation
- c) Improving transportation budgeting
- d) Improving shipment planning

PTS: 1 REF: 12 NAT: BUSPROG: Technology
TOP: A-head: Using Information Systems and Information Technologies
KEY: Bloom's: Knowledge

5. Describe the threat of substitute products or services and how organizations fight this threat.

ANS:

The threat of substitute products or services is high when many alternatives to an organization's products or services are available. Some organizations use services to make them more distinct in the marketplace, such as Amazon.com's personalized recommendations. Other organizations use fees to discourage customers from switching to a competitor, such as cell phone companies adding charges for switching to another provider before the customer contract is up.

PTS: 1 REF: 16 NAT: BUSPROG: Analytic
TOP: A-head: Using Information Systems and Information Technologies
KEY: Bloom's: Knowledge