

Solutions – Chapter 1

Critical Thinking Exercise

Kroger's QueVision System Improves Customer Service

Review Questions

1. The QueVision system is an enterprise system.
2. The two components that are missing are well-trained workers and better teamwork.

Critical Thinking Questions

1. To address the concerns of the cashiers and baggers, the store manager should observe the checkout process and performance of cashiers and baggers for a few days before taking action.
2. The manager should identify and put into place the full set of organizational complements. This cannot be done without observing where the system is failing.

Critical Thinking Exercise

Reducing New Product Stockouts at Coles

Review Questions

1. One benefit of virtual teams is that they enable organizations to enlist the best people in different geographical regions to solve important organizational problems. Another benefit is that they provide the ability to staff a team with people who have a range of experience and knowledge that stems from a variety of professional experiences and cultural backgrounds.
2. Virtual organization members must be sensitive to the different cultures and practices of the various team members to avoid misunderstandings that can destroy team chemistry.

Critical Thinking Questions

1. Student responses will vary. Student should provide a paragraph briefly outlining background and experience.

2. Student responses may vary. Communications are greatly improved when participants can see one another and pick up facial expressions and body language. I would recommend initial face-to-face meetings while the team is forming and defining goals, roles, and expectations on how its members will work together. It helps if virtual team members take the time to get to know one another by sharing experiences and personal background information.

Review Questions

1. Data is the raw material from which information is composed. Information includes a context for the data. Knowledge is an awareness of how to apply the information.
2. The student can list any six of the following attributes that describe the quality of data:

Characteristics	Definitions
Accessible	Information should be easily accessible by authorized users so they can obtain it in the right format and at the right time to meet their needs.
Accurate	Accurate information is error free. In some cases, inaccurate information is generated because inaccurate data is fed into the transformation process. This is commonly called garbage in, garbage out (GIGO).
Complete	Complete information contains all the important facts. For example, an investment report that does not include all important costs is not complete.
Economical	Information should also be relatively economical to produce. Decision makers must always balance the value of information with the cost of producing it.

Flexible	Flexible information can be used for a variety of purposes. For example, information on how much inventory is on hand for a particular part can be used by a sales representative in closing a sale, by a production manager to determine whether more inventory is needed, and by a financial executive to determine the total value the company has invested in inventory.
Relevant	Relevant information is important to the decision maker. Information showing that lumber prices might drop is probably not relevant to a computer chip manufacturer.
Reliable	Reliable information can be trusted by users. In many cases, the reliability of the information depends on the reliability of the data-collection method. In other instances, reliability depends on the source of the information. A rumor from an unknown source that oil prices might go up may not be reliable.
Secure	Information should be secure from access by unauthorized users.
Simple	Information should be simple, not complex. Sophisticated and detailed information might not be needed. In fact, too much information can cause information overload, whereby a decision maker has too much information and is unable to determine what is really important.
Timely	Timely information is delivered when it is needed. Knowing last week's weather conditions will not help when trying to decide what coat to wear today.
Verifiable	Information should be verifiable. This means that you can check it to make sure it is correct, perhaps by checking many sources for the same information.

3. An information system is a set of interrelated elements or components that collect (input), manipulate and store (process), and disseminate (output) data and information and provide a feedback mechanism to meet an objective. In information systems, feedback is information from the system that is used to make changes to input or processing activities.
4. The components of computer-based information system (CBIS) include hardware, software, databases, networks, people, and procedures.

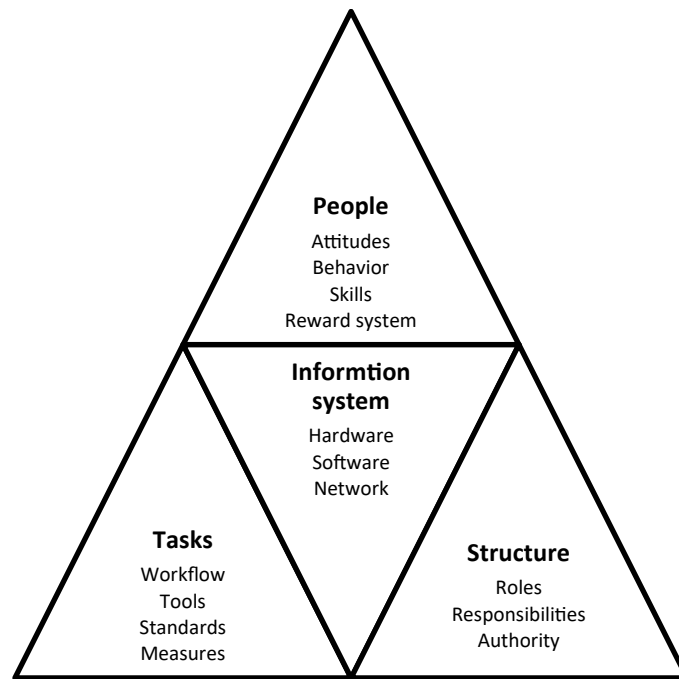
5. A business's technology infrastructure includes all the hardware, software, databases, telecommunications, people, and procedures that are configured to collect, manipulate, store, and process data into information. The technology infrastructure is a set of shared IS resources that form the foundation of each computer-based information system.
6. The three types of information systems are as follows:

Type	Description
Personal IS	An information system that improves the productivity of individual users in performing stand-alone tasks.
Group IS	An information system that improves communications and support collaboration among members of a workgroup.
Enterprise IS	An information system that an organization uses to define structured interactions among its own employees and/or with external customers, suppliers, government agencies, and other business partners.

7. The organizational complements include:
 - **Well-trained workers.** Employees must be well trained and understand the need for the new system, what their role is in using or operating the system, and how to get the results they need from the system.
 - **System support.** Trained and experienced users who can show others how to gain value from the system and overcome start-up problems.
 - **Better teamwork.** Employees must understand and be motivated to work together to achieve the anticipated benefits of the system.
 - **Redesigned processes.** New systems often require radical redesign of existing work processes as well as the automation of new processes.
 - **New decision rights.** Employees must understand and accept their new roles and responsibilities including who is responsible for making what decisions. Roles and responsibilities often change with introduction of a new system.
8. A value chain is a series (chain) of events that includes inbound logistics, warehouse and storage, production, finished product storage, outbound logistics, marketing and sales, and customer service. A supply chain is a network of suppliers, distributors, and retailers that participate in the production of a product.
9. Supply chain management (SCM) helps determine what supplies are required for the value chain, what quantities are needed to meet customer demand, how the supplies should be processed (manufactured) into finished goods and services,

and how the shipment of supplies and products to customers should be scheduled, monitored, and controlled.

10. The members of a virtual team are distributed geographically, but collaborate and complete work through the use of information systems. Members may seldom meet face to face. Virtual team members must be prepared to do work anywhere, anytime. As a result, members of a virtual team may feel that their work day never ends.
11. Sustaining innovation results in enhancements to existing products, services, and ways of operating. Such innovations are important because they enable an organization to continually increase profits, lower costs, and gain market share. A disruptive innovation is one that initially provides a lower level of performance than the marketplace has grown to accept. Over time, however, the disruptive innovation is improved to provide new performance characteristics, becoming more attractive to users in a new market.
12. Business process reengineering is the radical redesign of business processes, organizational structures, information systems, and values of the organization to achieve a breakthrough in business results.
13. Continuous improvement is a form of innovation that constantly seeks ways to improve business processes and add value to products and services.
14. The soft side of implementing change involves work designed to help employees embrace a new information system and way of working.
15. Leavitt's diamond proposes that every organizational system is made up of four main components—people, tasks, structure, and technology—that all interact; any change in one of these elements will necessitate a change in the other three elements. Thus, to successfully implement a new information system, appropriate changes must be made to the people, structure, and tasks affected by the new system.



16. Student responses will vary. Three sites might include:

- a. CareerBuilder: This site is one of the biggest job boards, and its robust search function allows you to filter by several criteria, including location, degree required and pay range. CareerBuilder partners with news media around the country and collects job listings from them. It also provides career advice and resources for candidates.
- b. TheLadders: This site focuses on job openings for upper-level executives and professionals who are aiming for the management suite.
- c. Glassdoor: This site promotes itself as giving job seekers insights into a company's work conditions, interview processes, salaries and benefits. In addition to providing job listings, Glassdoor allows employers to identify job candidates and market their companies to job seekers.

Source: <https://www.roberthalf.com/job-seekers/career-center/job-hunting-tips/10-best-job-search-websites>

17. The role of CIO is to employ an IS department's equipment and personnel to help the organization attain its goals. CIOs also understand the importance of finance, accounting, and return on investment. They can help companies avoid damaging ethical challenges by monitoring how their firms are complying with a large number of laws and regulations.

18. Shadow It is the term used to describe the information systems and solutions built and deployed by departments other than the information systems department. In

many cases, the information systems department may not even be aware of these efforts.

Discussion Questions

1. Regardless of major or interest areas, information systems will play a central role in all business careers. Even now, students use information technology daily ranging from grocery purchases to filing taxes to using the postal system. Information technology is present in all aspects of life and business. Information systems improve planning, communication, data management, report formatting and generation, input collection, and decision-making. A student may respond with a statement similar to this, “By becoming information systems literate, I hope to be competitive in the work force and develop skills that enhance my career and make me an asset to the business I join.”
2. Students answers will vary. Examples of how information systems can be used by teachers:
 - Teachers can post lesson plans and grades for parents and other staff to view
 - Student and teacher information can be kept in a database to be accessed by the county schools
3. Student’s answers will vary. As mentioned above, information systems improve planning, communication, data management, report formatting and generation, input collection, and decision-making. These are all important aspects of any course taken in any subject.
4. Student responses may vary. As an example of a simple value chain, the gift wrapping department of an upscale retail store takes packages from customers, covers them with appropriate, decorative wrapping paper, and gives the package back to the customer, thus increasing the customer’s (and the recipient’s) perceived value of the gift.
5. Student answers will vary. Students should detail a virtual team they are a member of.
6. Student answers may vary, but some examples might include the failure to promote creativity among the employees and failure to receive employee input prior to decisions. To encourage innovation, some IS departments are creating separate groups that explore new, innovative ideas. Innovative companies include Apple, Facebook, Google, Amazon, Twitter, Kickstarter, and PayPal.
7. Student answers will vary.

8. Student responses will vary. Perceived usefulness and ease of use can influence an individual's attitude toward the system, which also affects the worker's behavioral intention to use the system.
9. Technology diffusion is a measure of how widely technology is spread throughout an organization. An organization in which computers and information systems are located in most departments and areas has a high level of technology diffusion. Therefore, you would need to measure the use of the new system across the organization.
10. Students who use the Internet and other nontraditional sources to find IS jobs have more opportunities to land a job. Most large companies list job opportunities on their Web sites. These sites allow prospective job hunters to browse job opportunities, locations, salaries, benefits, and other factors. In addition, some sites allow job hunters to post their résumés.

Note that students are often warned to be careful of what they post on social media sites, including Facebook. Employers often search the Internet to get information about potential employees before they make hiring decisions.

11. The CIO should be a customer relationship manager, a strategic communicator, and a project manager, delicately balancing project portfolios, available resources, and governance. He/she should also be a leader, not a dictator; a technologist, not a technician; a business person, not an accountant; and finally, a diplomat, not a politician.
12. Student responses will vary.

Problem-Solving Exercises

1. Student should create a spreadsheet similar to Figure 1.13 using five occupations of his choice.
2. Students should create a table that lists 10 or more possible career areas, annual salaries, and brief job descriptions, and rate how much they would like the career area on a scale from 1 (don't like) to 10 (like the most).
3. Students should use presentation software to create three slides identifying what he hopes to learn from this course.

Team Activities

1. Students should form teams and find out one interesting fact about each member.
2. Students should develop interview questions and an assessment process to evaluate user satisfaction or a new system.
3. Students should search through several business periodicals (Bloomberg, Businessweek, Computerworld, PC Week, etc.) or use an Internet search engine to find recent articles that describe potential social or ethical issues related to the use of an information system.

Web Exercises

1. Students should search for information on the top-ranked places to work.
2. Students should research how recruiters use social network data to screen applicants. Recruiters can use social media data in a number of ways. Some examples might include:
 - Interested in seeing which candidates are the most (or least) connected
 - Use a candidate's social media pages to test the candidate's professionalism.
 - Look for specific traits of interest to the company.
3. Students should use a graphics program to illustrate the growth of the 10 fastest growing occupations and provide a summary on his findings.

Career Exercises

1. Students should identify 10 job characteristics that are important to them in selecting a career.
2. Student response will vary.
3. Student response will be based on ideal job.

Case Studies

Case One: BMW: Automaker Competes on the Digital Front

Critical Thinking Questions

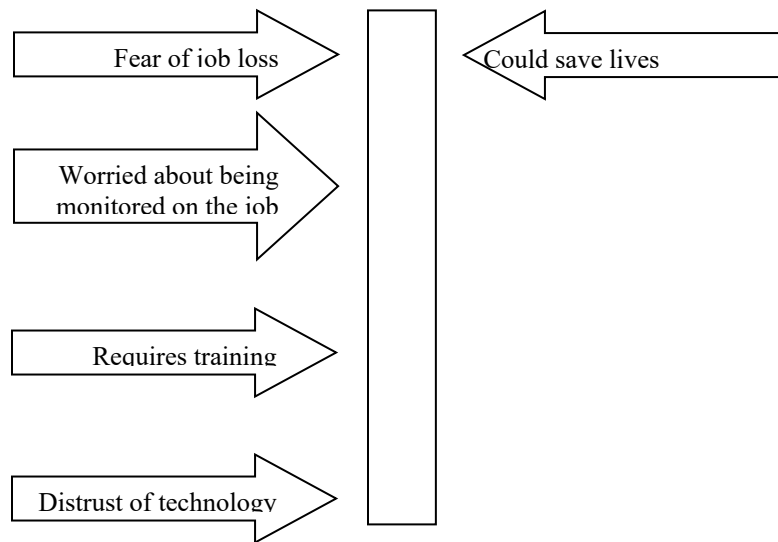
1. Student response will vary. Connected-car technologies can increase customer loyalty.

2. BMW has the responsibility of keeping its customer data safe.
3. Supply chain management and product lifecycle management would be important components in the ERP system. These tools would have to shift their focus and goal if BMW establishes a partnership with a technology company, as it will no longer need to develop technology in-house.

Case Two: Railroads struggle to Implement Positive Train Control

Critical Thinking Questions

1. Student answers may vary. This is an example of a simple analysis.



2. Responses will vary. Arguments for PTC might include:
 - Rail worker safety
 - Passenger safety
 - Enforcement of line speeds/monitor trains

Arguments against PTC might include:

- High cost
 - High time commitment
 - Frequency conflicts
3. Students should research the current status of PTC. They should note that congress extended the original PTC implementation deadline from December 31, 2015 to at least December 31, 2018. In addition, in August 2016, the U.S.

Department of Transportation's (DOT) Federal Railroad Administration (FRA) awarded \$25 million in grants for 11 projects in six states and the District of Columbia to assist in implementing PTC.

Source: <https://www.transportation.gov/briefing-room/fra-awards-25-million-grants-positive-train-control-implementation>