## Reading Assignment

**Chapter 1:**
The Importance of MIS

## Suggested Reading

See information below.

## Learning Activities (Non-Graded)

See information below.

## Course Learning Outcomes for Unit I

Upon completion of this unit, students should be able to:

1. Distinguish the key differences between data, information, information technology, and information systems.

6. Discuss the key issues involved in managing the components of IT infrastructure.

## Unit Lesson

In this unit, we explore the importance of management information systems (MIS). The author of our textbook, Kroenke (2014), stated that the reason it is important to understand MIS is due to a principle known as Moore's Law. Moore's Law illustrates improvements in computing that result in minimal-cost data processing, communications, and data storage. If you were to look up Moore's Law in the dictionary, it would be defined as "an axiom of microprocessor development usually holding that processing power doubles about every 18 months especially relative to cost or size" (Merriam-Webster's, 2003). For example, we all know that pulp wood trees are the input in the production of paper. Moore's law implies that more and more content will be stored digitally, and there will be less printed material produced. Consequently, the demand for paper will fall. The farmer recognizes that the value of his trees will decline over time as there is less demand for paper, so he decides to use his land to produce a product with a projected value. Some other examples include Kodak shifting its business away from film cameras and film development to digital cameras and photo printers, Google's project of scanning and digitizing books, and Amazon and Sony's development of electronic reader devices.

Some other examples of the effect of Moore's Law include the following:

- 1-click shopping: Rather than ask a customer to enter shipping and payment information with every order, store this information and enable the customer to buy with only one click.
- Amazon marketplace (sell goods and optionally have Amazon fulfill your orders): Utilize existing storage and communication to take and fulfill orders for others and reap a small commission on each sale.
- Amazon web services (leasing computer infrastructure): Utilize existing storage and processing infrastructure more fully by leasing extra capacity to other businesses.
- Search inside the book: This feature stores more information about the book and enables a customer to know more about it before purchasing. Access to digitized book content is essential for this innovation.
- Amazon Kindle: This device exploits the digitization of books. It provides the ability to store digitized book content on the Kindle and the ability to transmit digitized books easily over the Internet.

This unit discussed some cost-effective business applications of Facebook and Twitter. These applications did not exist ten years ago, but, in recent years, have moved to the forefront as a communication medium. In turn, businesses recognized their potential and adopted the technology in order to gain a competitive advantage. Employees that can assess and evaluate emerging technologies will be valuable to organizations that must adapt to new technology. Facebook and Twitter are examples of reasons why business professionals should be able to recognize emerging technologies and find ways to apply them to business.

Business professionals should acquire job skills that are marketable (non-routine cognition) such as abstract reasoning, systems thinking, collaboration, and the ability to experiment. Figure 1 is a chart from your textbook that outlines these skill sets.

| Skill | Example | Jennifer's Problem at AllRoad Parts |
|---|---|---|
| Abstract reasoning | Construct a model or representation. | Hesitancy and uncertainty when conceptualizing a method for identifying parts for 3D printing. |
| Systems thinking | Model system components and show how components' inputs and outputs relate to one another. | Inability to model AllRoad Parts' supply chain. |
| Collaboration | Develop ideas and plans with others. Provide and receive critical feedback. | Unwilling to work with others on work-in-progress. |
| Ability to experiment | Create and test promising new alternatives, consistent with available resources. | Fear of failure prohibited discussion of new ideas. |

Figure 1. Examples of Critical Skills for Nonroutine Cognition
*(Kroenke, 2015, p. 7)*

*Abstract reasoning* is the ability to have flexible thinking skills, to be creative, use proper judgment, and to be able to solve problems logically. In information systems, abstract reasoning is the ability to construct and use a model or representation. Being able to construct a model or representation of a complex situation through abstract reasoning is an important skill for business professionals who frequently must make decisions in uncertain and highly complex situations. This is a highly marketable skill. Some examples include projects plans, budgets, and business process models. For example, you would use a systems development model before deploying or installing a system (Figure 2).

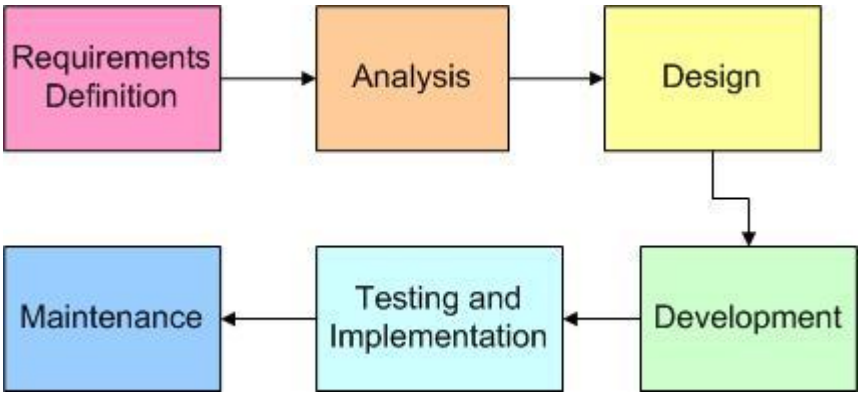


Figure 2. Systems Modeling
(*Beekman & Beekman, 2009*)

In the AllRoad scenario at the beginning of the chapter, Jennifer was unable to develop a model of the firm's supply chain. She developed a model that made no sense and had goods placed in inventory before they were even ordered. She claimed that she knew the process but could not put it down on paper.

*Systems thinking* involves identifying and modeling the components of a system and connecting the inputs and outputs among those components into a sensible whole, one that explains the phenomenon observed. This is an important skill because business people have to be able to identify and understand the relationships among the elements involved in a complex situation. For example, suppose a database system was taking too long to generate reports. You could then ask questions to help isolate the problem. Another way to use systems thinking is to illustrate the concept using flows and charts.

In the AllRoad scenario, Jennifer was unable to understand and model the correct components and relationships between components in the firm's supply chain. Systems thinking skills can be developed with practice. Applying existing models to different situations is a place to start, but actually creating the models, critiquing the models, and examining their usefulness is even more essential to developing these skills.

*Collaboration* is the ability to work productively with others when developing ideas and plans. A good collaboration results in a final work product that is superior to one that would be developed by a person working alone. Collaboration is more than just dividing the work up between the group members and assembling the individual contributions into a whole (a typical student approach to a group project assignment). Good collaboration involves several iterations in which ideas are contributed, reviewed, critiqued, and refined. All members contribute to the development and refinement of ideas.

In the AllRoad scenario, Jennifer failed to demonstrate effective collaboration skills because she was unwilling to share her ideas and work-in-progress with others because she wanted to wait until she felt she was "done." She failed to seek out the benefit of having others review her ideas as they are developing and help her improve upon them. Collaboration skills can be improved with practice. It may be hard for some people to offer half-formed ideas to others and to subject themselves to criticism, but the benefits will help them overcome this reluctance.

*Ability to experiment* involves creating and testing promising new alternatives, consistent with available resources. In today's demanding business environment, new ideas will be essential to success, and business people have to overcome their fear of failure and pursue new approaches rationally. When someone says, "that will never work," he or she may be reflecting their own fear of failure. Unwilling to try a new way of doing things may be an accurate assessment that the approach is unworkable, but it could also be an unwillingness to work in a new way.

A company that is serious about innovation would not tolerate employees who are fearful of taking risks and experimenting. Employees in such companies will be expected to do things they do not know how to do all the time! A boss is likely to tell the employee that he or she was hired not for what they already know how to do, but for the new things they can figure out how to do. It is that willingness to push into the unknown that is valued. Employees who cannot tolerate this expectation will not stay employed at that company for long.

In the AllRoad scenario, Jennifer failed to demonstrate the ability to experiment because she was unable to share new ideas with others. She was willing to do what she was told, but did not have the confidence to discuss any new ideas she had with others in case the ideas did not work out. It is hard for some people to change their innate willingness to take risks. The best way to overcome this is to work with a group

that accepts new ideas with enthusiasm and does not ridicule a member for suggesting a new approach. Once some success is gained, it will be easier to take risks in the future.

The textbook defines job security as “a marketable skill and the courage to use it” (Kroenke, 2015, p. 7). The textbook also argues that marketable skills are no longer specific task-related skills, but rather “strong nonroutine cognitive skills” (Kroenke, 2014, p. 7). Unfortunately, the more traditional task-oriented skills you learn (e.g., computer programming, accounting) will not provide you with job security. Technical skills are not irrelevant to job security, but they are not sufficient to guarantee job security. This circumstance is very different than in 1990, when technical skills probably were sufficient to get and keep a decent job.

An information system contains five important components: hardware, software, data, procedures, and people.

*Hardware:* The hardware consists of a dozen or more computers linked together by telecommunications hardware. Hand-held devices used as orders are picked, packed, and shipped are also included in the hardware category.

*Software*: The software consists of hundreds of different programs that coordinate communications among the computers, and still other programs that communicate the orders to the warehouses and the shipping companies.

*Data:* The system must store millions upon millions of characters of data about orders, customers, products, shipments, and other facts.

*Procedures:* Hundreds of different procedures are followed by warehouse personnel, shipping companies, and customers.

*People:* Including not only the people who use the system, but also those who operate and service the computers, those who maintain the data, and those who support the networks of computers.

What is *information*? Information is made of data that has been processed in some way so as to provide meaning and insight to the recipient of the data. Information can also be defined as data that is meaningful within a context. For example, a transcript from a prospective employee is meaningful to an employer trying to fill a position. The content of the transcript (courses taken, grades earned) has value in the hiring context. The employer will view the transcript (data) and make judgments about the prospect as to how well he or she fulfills the position requirements (information). Therefore, the transcript can help the employer produce information as to the suitability and desirability of a candidate. In this case, the only thing that the prospective employee controls is the content of the transcript—the input, or the data. By taking rigorous courses from exceptional educational institutions and performing well in those courses, the prospective employee can influence the information conceived by the employer in a favorable way.

References

Beekman, G., & Beekman, B. (2009). *Tomorrow's technology and you* (9th ed.). Columbus, OH: Prentice Hall.

Kroenke, D. (2015). *Using MIS 2014* (7th ed.). Upper Saddle River, NJ: Prentice Hall.

Merriam-Webster's collegiate dictionary (11th ed.). (2003). Springfield, MA: Merriam-Webster.

## Suggested Reading

Chapter 1 Presentation

Five Component Model

General Components of an Information System

Hudson, S. E. (2014). Printing teddy bears: A technique for 3D printing of soft interactive objects. Retrieved from http://www.disneyresearch.com/wp-content/uploads/Printing-Teddy-Bears-A-Technique-for-3D-Printing-of-Soft-Interactive-Objects-Paper.pdf

## Learning Activities (Non-Graded)

How Systems Can Help Your Business:
https://www.youtube.com/watch?v=MmJWgoSGlj8&feature=related

Course Flashcards:
http://media.pearsoncmg.com/ph/bp/bp_kroenke_umis_7/flashcards/index.html

From the Textbook:
Using MIS InClass 1, Information Systems and Online Dating, p. 14
Ethics Guide, Ethics and Professional Responsibility, pp. 20-21
Security Guide, Password and Password Etiquette, pp. 24-25
Guide, Five-Component Careers, pp. 26-27
Using Your Knowledge, pp. 29-30
Case Study 1, The Amazon Innovation, pp. 31-32

Non-graded Learning Activities are provided to aid students in their course of study. You do not have to submit them. If you have questions, contact your instructor for further guidance and information.