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| LEARNING OBJECTIVES |  |

Q1-1 Explain why the Introduction to MIS class is the most important class in the business school.

Q1-2 Explain how MIS will affect you.

Q1-3 Define what is meant by “MIS.”

Q1-4 Explain how to use the five-component model.

Q1-5 Explain what is meant by “information.”

Q1-6 Describe necessary data characteristics.

Q1-7 Anticipate the technology of the year 2027.

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| CHAPTER OUTLINE |  |

Q1-1 Why is Introduction to MIS the most important class in the business school?

* The Information Age
* The Digital Revolution
* Evolving capabilities
  + Bell’s Law
  + Moore’s Law
  + Metcalfe’s Law
  + Nielsen’s Law
  + Kryder’s Law
* This is the most important class in the school of business

Q1-2 How will MIS affect me?

* How can I attain job security?
* How can Intro to MIS help you learn nonroutine skills?
  + Abstract Reasoning
  + Systems Thinking
  + Collaboration
  + Ability to Experiment
* What is the bottom line?

Q1-3 What is MIS?

* Components of an information system
* Management and use of information systems
* Achieving strategies

Q1-4 How can you use the five-component model?

* The most important component—You
* All components must work
* High-tech versus low-tech information systems
* Understanding the scope of new information systems
* Components ordered by difficulty and disruption

Q1-5 What is information?

* Definitions vary
* Where is information?

Q1-6 What are necessary data characteristics?

* Accurate
* Timely
* Relevant
* Just barely sufficient
* Worth its cost

Q1-7 2027?

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| SECURITY GUIDE |  |

## Passwords and Password Etiquette

1. *Here is a line from Shakespeare’s Macbeth: “Tomorrow and tomorrow and tomorrow, creeps in its petty pace.” Explain how to use these lines to create a password. How could you add numbers and special characters to the password in a way that you will be able to remember?* There are several correct ways to create a password from this line. One way might be to take the first letters from each word. The password would then be “tatatciipp.” You could then capitalize a couple of the letters and add in a special character or numbers. The resulting password could be “T&2morrow&tciiPP.” This would be a very secure password.

1. *List two different phrases that you can use to create a strong password. Show the password created by each.* There will be many correct answers to this question. Using a passphrase to create a password is done by using the first letters in the phrase, then changing some of the letters by substituting in special characters, numbers, or changes of case. For example, the phrase, “I never count my chickens before the eggs have hatched!” could create the password “iNcmCHKNSb4t3ggsHH!” This would be a great password.
2. *One of the problems of life in the cyberworld is that we all are required to have multiple passwords—one for work or school, one for bank accounts, another for eBay or other auction sites, and so forth. Of course, it is better to use different passwords for each. But in that case you have to remember three or four different passwords. Think of different phrases you can use to create a memorable, strong password for each of these different accounts. Relate the phrase to the purpose of the account. Show the passwords for each.* There will be many correct answers to this question. For example, a passphrase for a university account may look something like, “I will graduate from state university before 2020 or bust!” This could yield a password that would look like “IwgfSUb42020ORB!”
3. *Explain proper behavior when you are using your computer and you need to enter, for some valid reason, another person’s password.* In this case, say to the other person, “We need your password,” and then get out of your chair, offer your keyboard to the other person, and look away while she enters the password. Among professionals working in organizations that take security seriously, this little “do-si-do” move—one person getting out of the way so another person can enter her password—is common and accepted.
4. *Explain proper behavior when someone else is using her computer and that person needs to enter, for some valid reason, your password.* If someone asks for your password, do not give it out. Instead, get up, go over to that person’s machine, and enter your own password yourself. Stay present while your password is in use, and ensure that your account is logged out at the end of the activity. No one should mind or be offended in any way when you do this. It is the mark of a professional.

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| SO WHAT? |  |

***A is for Alphabet***

1. *The article identifies the Internet as being a catalyst for the information age. What other innovations have contributed to this period of time in which large percentages of people around the world have access to infinite amounts of information through the use of computers?* Other innovations that have contribution to the information age include: dropping costs associated with buying computer hardware and software, increasing Internet speeds, the ubiquity of Internet access, smartphones tablets and other mobile devices, increases in computing power allowing different types of processor-intensive functions to be carried out by basic systems, etc.
2. *Think about your daily use of phones, tablets, and traditional desktop/laptop computers. How many searches do you perform a day? What types of things do you search for on the Internet? Do you use Google for these searches, and if not, what alternative search engine do you use? Why do you use this search engine?* Students’ search activities will vary but the vast majority will report that they use Google as their default search engine. Students who do not use Google may report that they simply use the default search engine selected by their browser (e.g., Firefox defaults to using Yahoo’s search engine). It will be interesting to learn about the reasons some students may actively choose to not use Google (some privacy-minded individuals avoid using Google services in light of claims that Google regularly commits invasions of privacy).
3. *Conduct an Internet search to find a project or product offered by Alphabet which you had not heard about before reading this article. Are you surprised at the diversity of the company and its projects/research initiatives?* Students will find a variety of examples as a result of their respective searches. Instructors should carry out a brief search of their own prior to having a discussion as the products and services offered by Alphabet are dynamic and will change over time.
4. *What new technological innovation do you think will drive the next great era in humanity? What do you think the defining elements of this era will be?* Many technology experts predict that the future of computers will center on machine-to-machine interaction. The Internet of Things promises to change how we make decisions as more and more sensors are deployed and data analytics tools improve. Automation will also likely play a prominent role in many industries, especially manufacturing. Recent statistics have identified that roughly 10% of the jobs that can be automated have been automated, and that this percentage will increase over time as technology costs drop and various industries learn how to deploy new technologies most effectively.

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| COLLABORATION EXERCISE 1 |  |

*Collaborate with a group of fellow students to answer the following questions. For this exercise, do not meet face to face. Coordinate all of your work using email and email attachments, only. Your answers should reflect the thinking of the entire group, and not just one or two individuals.*

1. *Abstract reasoning*
2. *Define* abstract reasoning, *and explain why it is an important skill for business professionals.*

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 under uncertain and highly complex situations. This is a highly marketable skill. (LO: 1, Learning Outcome: Describe the components of an information system (IS), AACSB: Reflective Thinking)

1. *Explain how a list of items in inventory and their quantity on hand is an abstraction of a physical inventory.*

The inventory list and quantity on hand are a representation of the actual items on shelves in the warehouse. (LO: 1, Learning Outcome: Describe the components of an information system (IS), AACSB: Reflective Thinking)

1. *Give three other examples of abstractions commonly used in business.*

Student answers will vary, but some examples include project plans, budgets, and business process models. (LO: 1, Learning Outcome: Describe the components of an information system (IS), AACSB: Reflective Thinking)

1. *Explain how Jennifer failed to demonstrate effective abstract-reasoning skills.*

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 couldn’t put it down on paper. (LO: 1, Learning Outcome: Describe the components of an information system (IS), AACSB: Reflective Thinking)

1. *Can people increase their abstract-thinking skills? If so, how? If not, why not?*

Yes, abstract thinking skills can be developed with practice. Working with existing models is a place to start, but actually creating the models and examining their usefulness is even more essential to develop these skills. (LO: 1, Learning Outcome: Describe the components of an information system (IS), AACSB: Reflective Thinking)

1. *Systems thinking.*
2. *Define* systems thinking, *and explain why it is an important skill for business professionals.*

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. (LO: 1, Learning Outcome: Describe the components of an information system (IS), AACSB: Reflective Thinking)

1. *Explain how you would use systems thinking to define why Moore’s Law caused a farmer to dig up a field of pulp wood trees. Name each of the elements in the system and explain their relationship to each other.*

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 higher projected value. (LO: 1, Learning Outcome: Describe the components of an information system (IS), AACSB: Reflective Thinking)

1. *Give three other examples of the use of systems thinking with regard to the consequences of Bell’s Law, Moore’s Law, or Metcalf’s Law.*

Student answers will vary. Bell’s Law, for example, states that digital devices will evolve so quickly that they will enable new platforms, programming environments, industries, networks, and information systems every 10 years. Right now, smartphones and tablet devices are predominant platforms for consumers, but how will that evolve and what does that mean for current smartphone/tablet providers? Will smart watches finally catch on, or some other “wearable” product? (LO: 1, Learning Outcome: Describe the components of an information system (IS), AACSB: Reflective Thinking)

1. *Explain how Jennifer failed to demonstrate effective systems thinking skills.*

Jennifer was unable to understand and model the correct components and relationships between components in the firm’s supply chain. (LO: 1, Learning Outcome: Describe the components of an information system (IS), AACSB: Reflective Thinking)

1. *Can people improve their systems thinking skills? If so, how? If not, why not?*

Yes, 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. (LO: 1, Learning Outcome: Describe the components of an information system (IS), AACSB: Reflective Thinking)

1. *Collaboration*
2. *Define* collaboration, *and explain why it is an important skill for business professionals.*

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. (LO: 1, Learning Outcome: Explain how IS can enhance systems of collaboration and teamwork, AACSB: Interpersonal Relations and Teamwork)

1. *Explain how you are using collaboration to answer these questions. Describe what is working with regards to your group’s process and what is not working.*

Student answers will vary. It is important that you stress that students should not just divide the work up between the group members and assemble 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. (LO: 1, Learning Outcome: Explain how IS can enhance systems of collaboration and teamwork, AACSB: Interpersonal Relations and Teamwork)

1. *Is the work product of your team better than any one of you could have done separately? If not, your collaboration is ineffective. If that is the case, explain why.*

Student answers will vary. It is likely that students have not spent enough time and effort reviewing and evaluating each other’s ideas and improving the work product. Many times student groups are satisfied with whatever is contributed and little attention is paid to critique and refinement. (LO: 1, Learning Outcome: Explain how IS can enhance systems of collaboration and teamwork, AACSB: Interpersonal Relations and Teamwork)

1. *Does the fact that you cannot meet face to face hamper your ability to collaborate? If so, how?*

Student answers will vary. Email is not a very easy way to collaborate due to the time lag involved between when messages are sent and eventually read. Because there is no central repository of the work product that all members can access, it is difficult to know what the latest version of the work product is and to keep track of changes to the work product. (LO: 1, Learning Outcome: Explain how IS can enhance systems of collaboration and teamwork, AACSB: Interpersonal Relations and Teamwork)

1. *Explain how Jennifer failed to demonstrate effective collaboration skills.*

Jennifer 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. (LO: 1, Learning Outcome: Explain how IS can enhance systems of collaboration and teamwork, AACSB: Reflective Thinking)

1. *Can people increase their collaboration skills? If so, how? If not, why not?*

Collaboration skills can definitely 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. (LO: 1, Learning Outcome: Explain how IS can enhance systems of collaboration and teamwork, AACSB: Reflective Thinking)

1. *Experimentation.*
2. *Define experimentation, and explain why it is an important skill for business professionals.*

Experimentation 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. (LO: 1, Learning Outcome: Describe the components of an information system (IS), AACSB: Reflective Thinking)

1. *Explain several creative ways you could use experimentation to answer this question.*

Students could experiment with different ways of collaborating, other than emailing. For example, the group members could arrange to meet in a chat room and work together on developing their answers by communicating in that forum. (LO: 1, Learning Outcome: Describe the components of an information system (IS), AACSB: Reflective Thinking)

1. *How does the fear of failure influence your willingness to engage in any of the ideas you identified in part b?*

If any of the group members respond to a suggested process with the comment, “that will never work,” he may be reflecting his 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. (LO: 1, Learning Outcome: Describe the components of an information system (IS), AACSB: Reflective Thinking)

1. *Explain how Jennifer failed to demonstrate effective experimentation skills.*

Jennifer 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. (LO: 1, Learning Outcome: Describe the components of an information system (IS), AACSB: Reflective Thinking)

1. *Can people increase their willingness to take risks? If so, how? If not, why not?*

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. (LO: 1, Learning Outcome: Describe the components of an information system (IS), AACSB: Reflective Thinking)

1. *Job Security*
2. *State the text’s definition of* job security*.*

The text defines job security as “a marketable skill and the courage to use it.” The text also argues that marketable skills are no longer specific task-related skills, but rather “strong nonroutine cognitive skills.” (LO: 1, Learning Outcome: Describe the components of an information system (IS), AACSB: Reflective Thinking)

1. *Evaluate the text’s definition of job security. Is it effective? If you think not, offer a better definition of job security.*

It is likely that students will be dismayed that the more traditional task-oriented skills they are learning (e.g., computer programming, accounting) will not provide them with job security. That is probably contrary to the message they receive from their parents and grandparents. However, this definition of *job security* should cause the students to think critically about what they are getting from their college education and may cause them to think differently about their experiences in college. (LO: 1, Learning Outcome: Describe the components of an information system (IS), AACSB: Reflective Thinking)

1. *As a team, do you agree that improving your skills on the four dimensions in Collaboration Exercises will increase your job security?*

Student answers will vary, but we hope that thinking about these dimensions will change their attitudes about what comprises marketable skills and how to work to develop them. (LO: 1, Learning Outcome: Describe the components of an information system (IS), AACSB: Reflective Thinking)

1. *Do you think technical skills (accounting proficiency, financial analysis proficiency, etc.) provide job security? Why or why not? Do you think you would have answered this question differently in 1990? Why or why not?*

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. (LO: 1, Learning Outcome: Describe the components of an information system (IS), AACSB: Reflective Thinking)

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| CASE STUDY 1 |  |

## zulily

1. *Go to zulily.com and register. Identify features of the site that make shopping entertaining to mothers and explain why those features entertain. Explain why this is important to the zulily business model.*

Some of the features of the site that are fun and entertaining are the wide array of items that are available for girls, boys, women, and the home; the way that items are organized by theme (an entire section on princesses, for example); the many colorful pictures; the list of new events and ongoing events at the top of the page; the sense of a limited time to purchase items; the ability to look forward to things that will be available tomorrow; the section containing items on their last day of sale; and the automatic daily email announcing specials. (LO: 1, Learning Outcome: Describe the effects of e-commerce on the modern business world, AACSB: Analytic Skills)

1. *Go to Nordstrom.com and shop for children’s clothes. How does the zulily shopping experience differ from that at Nordstrom? Briefly describe the advantages and disadvantages of each type of experience.*

Nordstrom’s site is much different from zulily. Taking the Kids link, there are very few main photos that lead to other sections of the site and many more text links to take you to specific sections. Nordstrom’s site does not offer the sense of new items, limited time offerings, or things that will be available tomorrow, which are features of the zulily site that will keep customers coming back on a daily basis. With Nordstrom’s you can have a more typical shopping experience by selecting the links of interest to you and viewing the items found there. Zulily offers some sense of urgency and excitement that is missing from Nordstrom’s. However, many shoppers may prefer the more straightforward shopping experience found at Nordstrom’s. (LO: 1, Learning Outcome: Explain how IS can be used to gain and sustain competitive advantage, AACSB: Analytic Skills)

1. *If you were buyer for zulily, what data would you like to have about customer purchase habits?*

Data of interest to buyers would include: what items sold out and how long did it take to sell out; what colors and sizes sold out most quickly; what items took the longest to sell out; what colors and sizes took the longest to sell out; do customers tend to buy frequently in small quantities in an order or infrequently with larger quantities in an order. (LO: 1, Learning Outcome: Discuss the role of information systems in supporting business processes, AACSB: Analytic Skills)

1. *If you were a buyer for zulily, what data would you like to have about past vendor performance?*

Data of interest about vendors would primarily focus on the vendor’s order fulfillment performance – is the vendor providing the right items of acceptable quality in a timely way? (LO: 3, Learning Outcome: Discuss the role of information systems in supply chain management and performance, AACSB: Analytic Skills)

1. *In the general course of life, 2-year-old boys become 3-year-old boys, 4-year old-girls become 5-year-old girls, etc. How can zulily use this not-so-remarkable phenomenon to customize a customer’s shopping experience? What data would you need to do this?*

By keeping track of the typical items purchased by a customer, say, good for an infant boy, zulily could offer that customer special promotions geared toward that child as he grows, such as clothing, toys, school items, etc. The order data from that customer would be the source of this information. (LO: 1, Learning Outcome: Explain how IS can be used to gain and sustain competitive advantage, AACSB: Reflective Thinking)

1. *As a business professional, it is likely information systems professionals will ask you data questions like those in questions 1-11 to 1-13 above. What is the best way for you to respond? Verbally in a meeting? With a written document? With a sketch or diagram? How will you know if you have been understood?*

Although individuals will vary in terms of their preferred communication style, this is a good place to reinforce with your students how an understanding of information systems will help them regardless of their professional role. The most effective way to communicate these data needs is to show a sketch or diagram of a sample report and be able to discuss in a meeting with the IS staff how you would use the report contents for decision making. The IS staff would have a tangible example of your information needs and will then be able to focus on the task of finding and organizing the data needed to produce your report. You will know if you’ve been understood if you receive some prototype reports that include the information you want, so you know the IS staff is on the right track. (LO: 1, Learning Outcome: Discuss the role of information systems in supporting business processes, AACSB: Reflective Thinking)

1. *At the April 2015 stock price of $14.59, the market values zulily at $1.86 billion. This is a big drop from the February 2014 high of $68.39 a share price. Describe zulily’s principle assets. Does a $1.86 billion valuation seem appropriate, given your description of the company’s assets? Justify your answer.*

Zulily’s most essential assets are its customers, the relationships it has with its vendors, and its data. As stated in the case study, zulily used available technologies to build an innovative business in a traditional marketplace. The unique success experienced by zulily suggests that the managerial talent that brought zulily to its previous level of success is rare and therefore very valuable. However, as is often the case, companies must work very hard to sustain their success, and zulily found that it was unable to meet market expectations for growth. Customers acquired from product- and event-specific marketing drove higher initial purchases; they also resulted in lower lifetime values and higher customer churn. As a result, zulily decided to prudently slow marketing and retool its processes with long-term returns on investment in mind. Recently, zulily’s stock price has rebounded from the lows experienced earlier in 2015 due to a combination of cost management, progress in marketing strategy, and the result of prior investments aimed at improving zulily's supply chain. In addition, the company will be acquired by Liberty Interactive, the parent company of QVC Group, which is expected to strengthen the brand. (LO: 1, Learning Outcome: Explain how IS can be used to gain and sustain competitive advantage, AACSB: Reflective Thinking)

For an example illustrating the concepts found in this chapter, view the videos in [mymislab.com](http://mymislab.com/).