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| CHAPTER LEARNING OBJECTIVE QUESTIONS |  |

4-1 What Do Business Professionals Need to Know About Computer Hardware?

4-2 How Can New Hardware Affect Competitive Strategies?

4-3 What Do Business Professionals Need to Know About Software?

4-4 Is Open Source Software a Viable Alternative?

Learning Catalytics™ is a student response tool that helps you generate class discussion, customize your lecture, and promote peer-to-peer learning based on real-time analytics. Learning Catalytics uses students’ smartphones, tablets, or laptops to engage them in more interactive tasks.

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| SO WHAT? |  |

## New from CES 2019

*1. What trends do you see pushing innovation in televisions? Why are these important to consumers?*

Television design advances push towards offering higher and higher definition displays that are larger and larger, but also lighter and lighter, and in some instances, are curved to provide a better viewing experience or are thin and flexible enough to roll up out of sight when not in use. Consumers value these improvements because televisions are an integral part of today’s home entertainment environment.

*2. Will Harley-Davidson try to market LiveWire to traditional motorcycle riders or to a new market segment? What attributes of new electric motorcycles might be less attractive to traditional motorcycle riders?*

A portion of traditional motorcycle riders are environmentally conscious, so this electric motorcycle might result in them changing types. Nonowners of motorcycles who were put off by the gas-powered, noisy, complex traditional motorcycles will be a new market segment to tap. Existing Harley owners might be reluctant to give up the distinctive growl of the Harley, as that is part of the image and rider experience.

*3. How might other traditional products, other than headphones, benefit from an integrated AI?*

Any traditional product that can benefit from some automated features could benefit from an integrated AI. The AI component makes the automation “smarter” and requires little or no input from the user, making the use of the product more seamless.

*4. How can traditional companies manage the change from traditional products to IoT devices (Internet connected) and then to AI-powered devices?*

These changes require new talent and expertise, new manufacturing processes, and an intentional product introduction process that prepares the business to create, manufacture, introduce, and support the new product versions. Employees will need to be prepared to work with the new capabilities of the products and be ready to help customers work with those new products successfully.

*5. How might the effectiveness of the AI determine the overall success of the product?*

There is no doubt that an effective AI will delight the customer, while an effective AI will turn off the customer. The capability of the AI is critical to the product’s success.

*6. What security or privacy concerns might be associated with AI-powered smart devices?*

Smart devices need to be very secure so that the wrong people could not hack into the device and discover the location of the device user, listen to private conversations, or commit other invasions of privacy. This is important for all users but is especially important for devices used by children. Early examples of smart home devices, such as smart doorbells, were not developed initially with strong security features, so this is particularly important as new devices are introduced.

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| COLLABORATION EXERCISE 4 |  |

*Using the collaboration IS you built in Chapter 1 (pages 25–26), collaborate with a group of students to answer the following questions. If you haven’t built your collaboration IS yet, reread Collaboration Exercise 1 and Chapter Extension 10. Meet with your team and build a collaboration IS that uses tools like Google Docs, SharePoint, or other collaboration tools. Do not forget the need for procedures and team training.*

1. *Consider uses for HoloLens at your university. How might HoloLens be used in architecture, chemistry, law, medicine, business, geography, political science, art, music, or any other discipline in which your team has interest? Describe one potential application for HoloLens in five different disciplines.*

Student answers will vary. The use of collaboration should aid the teams in developing a set of creative ideas. (LO: 1, Learning Outcome: Discuss the role of information systems in supporting business processes, AACSB: Information Technology)

1. *List specific features and benefits for each of the five applications you selected in question 4-4.*

Student answers will vary depending on the ideas created by the group. (LO: 1, Learning Outcome: Discuss the role of information systems in supporting business processes, AACSB: Information Technology)

1. *Describe, in general terms, the work that needs to be accomplished to create the applications you identified in question 4-4.*

Student answers will vary depending on the ideas created by the group. (LO: 3, Learning Outcome: Discuss the role of information systems in supporting business processes, AACSB: Information Technology)

1. *Some people buy gaming consoles like Sony PlayStation and Microsoft Xbox because of exclusive games. Not all video games are available on all consoles. How important might applications be in the success of digital reality devices like HoloLens, Meta 2, and Oculus Rift?*

The use of technologies like HoloLens will most likely have a huge impact on the gaming industry. Consequently, the availability of applications will be crucial to stay competitive. (LO: 1, Learning Outcome: Explain how IS can be used to gain and sustain competitive advantage, AACSB: Reflective Thinking)

1. *You will sometimes hear the expression, “Emerging technology is constantly leveling the playing field.” In other words, technology eliminates competitive advantages of existing companies and enables opportunities for new companies. How does this statement pertain to HoloLens, iPad, Windows 10, Apple, and Google?*

An emerging technology like HoloLens may result in the complete transformation of industries and/or the creation of new business models. (LO: 3, Learning Outcome: Explain how IS can be used to gain and sustain competitive advantage, AACSB: Reflective Thinking)

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| CASE STUDY 4 |  |

## The Apple of Your i

1. *Which of Porter’s four competitive strategies does Apple engage in? Explain.*

Apple is pursuing a focused differentiation strategy. It is focused primarily on the mobile computing device market and is differentiating itself through its incredible engineering and huge array of applications for its devices. (LO: 3, Learning Outcome: Explain how IS can be used to gain and sustain competitive advantage, AACSB: Reflective Thinking)

1. *What do you think are the three most important factors in Apple’s past success? Justify your answer.*

Student opinions on this will vary, but Apple has demonstrated a capability of creating innovative new products successfully. Apple has also been able to keep that stream of innovations going and to enable the innovations to play off each other. A culture that encourages and supports these engineering successes is obvious. Apple also has developed an ability to sell and market its new products successfully. (LO: 3, Learning Outcome: Explain how IS can be used to gain and sustain competitive advantage, AACSB: Reflective Thinking)

1. *Steve Jobs passed away in October 2011. Until his death, he had been the heart and soul of Apple’s innovation. Today, 132,000 Apple employees continue onward in his absence. A huge question for many investors is whether the company can be successful without him. What do you think? What role did Jobs play? How can Apple respond to his loss? Would you be willing to invest in Apple without his leadership? Why or why not?*

Jobs had a very hands-on involvement in the business. He was the company’s chief innovator. Of course, he didn’t do it all alone, but he seemed to set the direction for the business in a very effective way. He had the ability to be visionary and send his company’s engineers out to conquer challenges that paid off in big ways. The company then also had the ability to develop support systems for the new innovations. Another capability was to recover and move on from product failures, which Apple had its share of as well. Can this company continue its progress without Jobs? Obviously, only time will tell. Some students may feel that Apple will be unable to sustain its success without the unique vision and leadership style of Jobs and would therefore be unwilling to invest in Apple. Other students may feel that Apple’s executives have been hand-picked and mentored by Jobs and are therefore capable of continuing to lead Apple effectively. At this time, six years past Jobs’ death, Apple’s stock price is flying high; pricey new iPhones have been released that incorporate facial recognition for security; but Apple seems to be late to market with an AI-based home assistant to compete with Amazon Alexa or Google Home. (LO: 3, Learning Outcome: Explain how IS can be used to gain and sustain competitive advantage, AACSB: Reflective Thinking)

1. *Microsoft took an early lead in the development of tablet devices (like the iPad), and it had the world’s leading operating system and applications for more than 20 years. Provide five reasons why Microsoft was not able to achieve the same success that Apple has. Most industry analysts would agree that the skills and abilities of Microsoft’s 134,000 employees are as good, on average, as Apple’s.*

Students will have different opinions on this. Here is a list of a few ideas to get the discussion rolling:

* Lack of a visionary leader since Gates has departed
* Very diffuse focus — many market niches pursued simultaneously
* Emphasis on acquiring new technologies rather than in-house development
* Strategy of maintaining edge through strategic manipulation rather than product enhancement
* Few products that are truly amazing, must-have products (LO: 3, Learning Outcome: Explain how IS can be used to gain and sustain competitive advantage, AACSB: Reflective Thinking)

1. *Considering your answers to the four preceding questions, if you had a spare $5,000 in your portfolio and wanted to buy an equity stock with it, would you buy AAPL (Apple)? Why or why not?*

Students will have different opinions on this. I would be sure to ask those who want to jump on board the Apple bandwagon several questions, including:

* Is it the best strategy to buy a stock with the price at record highs?
* Are you concerned about Apple’s leadership following Steve Jobs’ death?
* How do you feel about the company’s ability to keep producing technical winners?

(LO: 3, 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/).