**MIS 310 Week 9 Homework (30 points)** Name: Megan Leonard

You will not be given credit for answers that are copies or near verbatim transcripts – please use your own words and document sources where appropriate using proper APA guidelines. Apply the principles learned in this chapter (chapter 8) or previous chapters to answer the questions for this assignment.

**Chapter 8 Learning Outcomes**

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| * Identify the pros and cons associated with both buying and building software. * Identify the advantages and disadvantages of the waterfall approach to system development. * Identify and state the goal of each of the six phases of the waterfall approach. * Identify and briefly describe the primary tools and techniques used during system development. * Define five types of feasibility that must be assessed. * Identify the purpose and participants involved in various types of testing from unit testing to user acceptance testing. * Identify three approaches for system cutover. * Describe the agile development process. * Identify the advantages and disadvantages of the agile system development approach. * Describe the role of the scrum master and product owner in the scrum framework. * Discuss extreme programming (XP) and DevOps. * Outline a process for evaluation and selection of a software package. * Identify the key factors to be considered in selecting a software package. |

**Week 9 Review Questions (10 points)**

Answer the following questions in one or more paragraphs using proper APA format as required**:**

1. [2 points] What are primary characteristics of the waterfall system development process? What is the rationale for using the term “waterfall” to describe it?

Primary characteristics for the waterfall system development process are that it is one stage at a time, prior steps need to be finished before moving to the next, and the next step can not be done without doing the previous. The name is rationale as the steps are done in a steady flowing motion shown downward like a waterfall.

1. [2 points] What is the difference between tangible and intangible benefits? Identify five tangible benefits that are frequently associated with an information system.

Tangible benefits are ones that can be quantified in dollars while intangible benefits are hard to quantify. Five tangible benefits are faster service, able to manage resources better, reduce costs, increase revenue, and a faster system.

1. [2 points] Identify and briefly describe four types of testing that are conducted during the integration and testing phase.

The four types are integration, system, volume, and user acceptance testing. Integration testing tests the individual components as a group to check defects in the interfaces. The system testing will be used to make sure the integrated system meets the specified requirements. Volume testing will look at the performance and determine the where the workload would start to degrade the performance. Acceptance testing will test the system to make sure it can complete the necessary tasks,

1. [2 points] What is extreme programming (XP)? What is its goal?

Extreme programming is a type of software development that has incremental development of the system. The goal is to use short cycles to improve productivity and accommodate new customers.

1. [2 points] An organization has selected and is now implementing a software package. Identify three key factors that will determine the cost and time required for implementation.

Three key factors that will determine the cost and time required are the human resources needed through the implementation process, the size of the software package, and any necessary migration and integration of previous information.

**Week 9 Critical Thinking Exercise (10 points)**

Read the following and answer the questions in one or more paragraphs using proper APA format as required**:**

***Firm’s First Agile Project***

*You were hired into a new company that was impressed with your two years of experience as a scrum master on a variety of information systems projects. Your new firm has a large in-house information system development staff that is trained and experienced in the use of the waterfall software development process. You have been assigned responsibility as a scrum master for a key project that will be the firm’s first agile project. You have also been asked to train the project manager, team, and newly appointed product owner in the agile process and their associated roles and responsibilities.*

1. [2 points] As part of the team’s initial project kickoff meeting, you have been asked to briefly summarize the differences between the waterfall and agile software development process. What would you say?

The waterfall development process is a one step at a time system that requires each part to be fully defined before moving to the next. The agile development process uses faster increments and focuses on the speed the team can deliver and respond to new requirements.

1. [2 points] Following your discussion, one of the team members asks, “so why are we changing to a new software development process? We are all comfortable with the way we do things now.” What do you say?

We are planning on changing to a new software development process as a means of being able to complete newer requirements set by the systems and customers. Without change we could loose potential customers as we have only certain requirements, we are able to complete using the process we have now.

1. [3 points] There is likely to be some confusion over the role of project manager, scrum master, and product owner. What can you do to avoid this potential problem?

To be able to avoid this potential problem it is best that at the meeting to provide definitions of each role and how they interact with the systems. Going over their parts in this could help people with separating the different jobs and have a better understanding of how they work.

1. [3 points] What other potential problems can you anticipate as the team moves forward with its first agile project? What can be done to avoid these potential issues?

Some problems that could occur are the team being unable to follow the new process, time restraints not being followed, and they could have difficulty remembering to use the new system. To avoid these potential issues there can be set check-ins prior to the due date. Laying out the steps and how the agile system works in an easy-to-follow page could help the workers with checking the step before moving forward.

**Week 9 Case Study (10 points)**

Read the following and answer the questions in one or more paragraphs using proper APA format as required**:**

***Etsy Uses DevOps for Rapid Deployment***

*Looking for a unique gift—such as a personalized, hand-stamped fishing lure or maybe a vintage gold hairpin or even a crocheted hat for your cat? If so, you might want to join the 24 million active buyers who turn to the Web site Etsy as their source for handmade and vintage products—ranging from art and photography to clothing and jewelry to home décor and furniture.*

*Etsy was founded in 2005 in an apartment in Brooklyn, New York, by a small group of people who saw a need for an online exchange where crafters and artists could sell their handmade and vintage goods along with art and craft supplies. The company, which views itself as a global community of creative entrepreneurs, shoppers, manufacturers, and suppliers, now has more than 800 employees and a peer-to-peer e-commerce site that generated close to $2.4 billion in sales in 2015. Currently, the site has over 35 million items available for sale from 1.6 million active sellers around the world.*

*Early on, Etsy placed a high priority on developing a sophisticated technology platform to support its business, with an engineering culture centered around a philosophy that the company has dubbed “Code as Craft” (the company even operates an engineering blog under that name). However, as with many start-ups, the development of Etsy’s internal structures was not always carefully planned. As a result, siloes and other barriers to collaboration gradually developed across the company, affecting its ability to keep its software development efforts on the cutting edge.*

*Despite those challenges, the company grew rapidly, and as early as 2008, the company was deploying new releases to its site twice a week—a pace matched by few other companies at the time. However, each of those deployments typically took over four hours to complete, and according to Michael Rembetsy, vice president of technical operations at Etsy, “Deploys were very painful. We had a traditional mindset: developers write the code and ops deploys it.” That divide often resulted in faulty releases that shut down the site for prolonged periods, causing real concern for the users around the world who relied on the site to make a living.*

*When Chad Dickerson, who had spent years as CTO at Yahoo!, joined Etsy as its new CTO, he quickly brought in a new technical management team, which pushed the company to adopt a more agile approach to software development in order to roll out improvements and updates with greater ease and fewer disruptions. According to Jon Cowie, an operations engineer at Etsy, “Bringing that group in is what first planted the seed of DevOps and the move to a continuous rate of delivery, and it’s all really grown from there. As the company has grown, this idea that the closer developers and operations work together and understand each other’s problems, the more the company can achieve, has really taken hold.”*

*Like many companies, Etsy was attracted to DevOps as a way to create a more responsive software development process—one that allows for continuous integration and deployment. However, adopting DevOps practices has also encouraged a more collaborative approach to development—a shift that has been both challenging and rewarding for the company. Notes Cowie, “The hardest part is getting the business culture right…. You may have to deal with stakeholders at different levels who may not like this idea of relinquishing some power or giving people access to systems they previously haven’t had.”*

*One of the big rewards for Etsy is that its developers are now able to push code to a production server up to 60 times a day. Often, the first release is to a limited audience of employees or a small, randomly selected group of users. With testing and feedback, the code can then be pushed to the entire Etsy community. According to Rembetsy, “We started to understand that if developers felt the responsibility for deploying code to the site they would also, by nature, take responsibility for if the site was up or down, take into consideration performance, and gain an understanding of the stress and fear of a deploy.”*

*As Rembetsy notes, “Mistakes happen, we find them, fix them, and move on. The important thing is to learn something from the process, and never make the mistake again in the future.”*

1. [4 points] It is perhaps not surprising that Etsy was an early adopter of DevOps. It is a relatively small company, with a start-up culture, and its move to DevOps was championed by company leaders. Do you think deploying DevOps practices would be more difficult in a larger, more established organization? How might a company begin to make the cultural changes needed to move to the more collaborative, rapid-deployment approach that DevOps offers?

I believe it would be harder to use DevOps in a larger company as there are more people and stockholders that the company needs to handle. To start the change would be best to start with the collaboration and the business. As the case study says the stockholders may have a problem with relinquishing some of their power. Starting with smaller projects to build into this change can help with showing them the benefit of this change while giving the collaborators a means of getting use to each other.

1. [4 points] At Etsy, new developers are expected to begin pushing code to production on day one. That expectation is one way Etsy encourages its employees to embrace change—and a certain degree of risk—instead of fearing it. Would you feel comfortable working as a business manager in a company that gives individual developers so much freedom and responsibility? What would be some of the advantages to a business manager of such a culture? What might be some of the disadvantages?

I would feel comfortable as a manager where the individual developers have so much freedom and responsibility. Some advantages would be that the developers do not rely heavily on the manager for their tasks and the manager can get a better idea of where the developers stand on their interests and strengths. Some disadvantages would be that developers may be working on different code projects that could interfere with ones another is working on. People coming in may feel lost and have trouble talking to the manager about what to do.

1. [2 points] What would be some of the criteria you would use to measure the success of a shift to DevOps practices within a company?

Some criteria I would use to measure the successful shift would be; the amount of customers and visitors to the site, product sales, and website performance.

SOURCES: “About Etsy,” Etsy, www.etsy.com/about/?ref=ftr, April 28, 2016; Dix, John, “How Etsy Makes DevOps Work,” Network World, February 19, 2015, www.networkworld.com/article/2886672/software/how-etsy-makes-devops-work.html; Donnelly, Caroline, “Case Study: What the Enterprise Can Learn from Etsy’s DevOps Strategy,” ComputerWeekly, June 9, 2015, www.computerweekly.com/news/4500247782/Case-study-What-the-enterprise-can-learn-from-Etsys-DevOps-strategy; Heusser, Matthew, “Continuous Deployment Done in Unique Fashion at Etsy.com,” CIO, March 12, 2012, www.cio.com/article/2397663/developer/continuous-deployment-done-in-unique-fashion-at-etsy-com.html; “What Is DevOps,” The Agile Admin, https://theagileadmin.com/what-is-devops, accessed April 27, 2016.