**Part 1.**

**The old approach to software development was for the development team to create the applications and then pass it off to operation to maintain and deploy. The problem with this is that the operations team has little to no insight into how the app was developed. This is what DevOps attempts to correct. [2] DevOps can be characterized and defined as the combination of practices, tools and ideologies which optimize an organization to be able to deliver and evolve apps and services faster. [1] Some of the key practices that allow DevOps to innovate and develop faster are continuous integration and delivery, microservice architecture, infrastructure as code, communication and collaboration, and monitoring and logging.**

**Many of these practices and principles are the same as agile practices and principles. This is because DevOps is considered an evolution of agile. [2] Where Agile stops at operations, an integral part of DevOps is maintaining the application through deployment and operations. DevOps does this simply by taking all of the aforementioned agile practices and applying them to not only development but operations as well.**

There are six benefits that come from applying these practices through DevOps. The first is innovating for customers faster, adapting quicker to changing markets and growing more efficiently at driving results by using microservices and continuous delivery. The second is rapid delivery of products by using continuous delivery and integration. Third is reliability by using continuous integration and delivery as well to test that changes are functional, and monitor and logging practices help stakeholders stay informed of the performance in real-time. The rest of the benefits are scale, improved collaboration and security of product development. [1]

**Part 2.**

In part 1 of this assignment, we mentioned that before DevOps came along, developers built the apps then passed off the responsibility for deployment and maintenance to operations. Unfortunately, this also means that quality assurance was also performed by operations. Since the operations team had no insight into the development of the application, this means that often times, quality assurance was performed with little knowledge of the official requirements that went into making the app. The first step in performing quality assurance is identifying what the original requirements were so you can make sure the app that was built addresses and prioritizes these requirements.

DevOps seeks to eliminate this barrier and solve this problem by applying agile practices to Ops and Quality Assurance. As a result, developers and quality assurance roles become blurred and quality assurance acts as a bridge between the development and operations. [3] QA implements collaboration between testers and developers. Testers are involved early in the conception of the project and as a result, developers would now be able to perform unit tests before adding it to the main codebase. [3] With developers performing their own unit tests, quality assurance experts switch to a more consultative role with helping developers get better at screening for quality issues they do this by imparting knowledge and training to the development team through a collaborative effort. In SCRUM, QA is involved right from the start of a sprint which allows development of builds to be more evolved. [3] A quality assurance engineer is more versed in knowing what bugs to look out for in unit testing. They also help developers with performing automated testing through the use of tools. [3]

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