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Module 1.3 Assignment: The History of DevOps

DevOps, as the name implies, is a combination of Development and Operations. In most development systems, the development team and operations team are isolated from each other, leading to delays and inefficiencies in the delivery process. DevOps addresses these issues by bridging the gap between development and operations by fostering a culture where both development and operations work together throughout the entire software development lifecycle (SDL). However, before DevOps, traditional models like Lean and Agile laid the foundation for this shift in collaboration.

The origins of the Lean Movement can be traced back to the early 1900s when Henry Ford introduced the assembly line for the Model T automobile. The assembly line was designed to quickly manufacture car parts, which were passed from one worker to the next in a streamlined process, resulting in increased efficiency. Kiichiro Toyoda of Toyota, then took this process, built upon it, and invented the Toyota Production System. Toyota’s system would focus on eliminating waste, improving quality, and increasing productivity. These principles later formed the foundation for Lean software development, where seven core principles are applied:

* + 1. Eliminate waste - eliminate anything that doesn’t add value to the product, i.e. unnecessary code.
    2. Amplify learning - knowledge must be spread from person to person.
    3. Decide as late as possible - explore and learn as much as possible before committing to any decisions.
    4. Deliver as fast as possible - Philosophy of launching a product quickly, receiving feedback from customers, and learn from results.
    5. Empower the team - encourage healthy conflict, proactive communication, and constant feedback.
    6. Build integrity in - ensure quality is maintained throughout the development process, rather than checking for it at the end.
    7. See the whole - Examine the process from start to finish to ensure an efficient value stream.

The Agile Manifesto is a document written by 17 people who met at a ski resort in Snowbird, Utah. The 17 people “shared a frustration about the current state of affairs” and felt that “companies were so focused on excessively planning and documenting their software development cycles that they lost sight of what really mattered—pleasing their customers” (Drumond, 2019). The Snowbird 17 came up with a set of values that define an agile culture:

Individuals and interactions over processes and tools.

Working software over comprehensive documentation.

Customer collaboration over contract negotiation.

Responding to change over following a plan.

The Continuous Delivery Movement is a software development practice that involves preparing code changes for release. It is part of the Continuous Integration and Continuous Delivery Pipeline, or CI/CD. Continuous Delivery uses automation to test and deploy software. This helps ensure the software is ready to be released into production. This practice allows for rapid updates to software, significantly reducing the time between writing code and deploying it into production. Additionally, this process also allows team to quickly adapt to user feedback and changing requirements, which is a fundamental concept of the DevOps philosophy.

DevOps builds on the principles of Lean, Agile, and Continuous Delivery. Lean and Agile lend their focus on adaptability, efficiency, and customer collaboration, while Continuous Delivery streamlines the process of getting code into production through automation. DevOps combines these principles to create a culture of collaboration between development and operations teams, resulting in faster, more reliable software delivery and the ability to quickly adapt to changing requirements and feedback.

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