Vanh Somchaleun

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<https://github.com/VanhSom/csd-380.git>

# The History of DevOps

DevOps is a combination of “development” and “operations.” The movement focused on improving collaboration between software developers and IT operations teams. DevOps’ focus is to speed up the software development process while maintaining high quality. Several essential ideas, including the Lean Movement, the Agile Manifesto, and the Continuous Delivery Movement, have influenced the history of DevOps. This paper will explore how these concepts contributed to the development of DevOps.

## The Lean Movement

The Lean Movement began in the manufacturing industry, particularly with the Toyota Production System in the mid-20th century. It focused on maximizing value for customers. It focuses on maximizing value for customers by minimizing waste. The key principles of Lean are Value, Value Stream, Flow, Pull, and Perfection.

* Value – Understanding what customers consider valuable.
* Value Stream – Identifying the steps needed to deliver a product or service and eliminating unnecessary steps.
* Flow – Ensuring that work moves smoothly through the process without delays.
* Pull – Producing only what is needed when required, rather than making products based on predictions.
* Perfection – Continuously improving processes and products.

The Lean principles have been adapted to software development, leading to Lean Software Development. They emphasize reducing waste in the software development process and delivering value to customers more effectively by focusing on collaboration and continuous improvement.

## The Agile Manifesto

In 2001, software developers came together to address the problems with long development cycles and inflexible processes. This meeting led to the creation of the Agile Manifesto, which outlines four key values, and twelve principles aimed at improving software development practices.

Agile Manifesto values focus on people and teamwork rather than on strict processes and tools, valuing good communication. It prioritizes delivering working software over spending time on detailed documentation. Agile Manifesto also encourages working closely with customers instead of just sticking to contract terms, ensuring their needs are met during development.

## The Continuous Delivery Movement

The Continuous Delivery (CD) Movement began in the late 2000s to solve the problem of releasing software quickly and reliably. CD allows teams to deploy software changes anytime, ensuring the software is always ready for release.

Core ideas for Continuous Delivery:

* Automated Testing – Involves running tests automatically to make sure new changes to software do not introduce bugs or errors.
* Continuous Integration – Involves frequently combining small changes made by different developers into a shared project.
* Deployment Automation - The process of getting software from the development environment to production is done automatically.

The Continuous Delivery Movement supports DevOps by providing the technical practices needed to achieve the cultural and collaborative goals of DevOps. CD fosters a culture of experimentation and innovation central to the DevOps approach by enabling teams to release software more frequently.

DevOps combine principles from the Lean Movement, Agile Manifesto, and Continuous Delivery Movement to create a comprehensive approach to software development and operations. Three key areas aim to enhance collaboration between teams and aid the software delivery process:

* Collaboration – improve communication and teamwork by breaking down barriers between development and operations teams.
* Automation – Automated processes to reduce manual work and minimize errors.
* Measurement – Metrics will assist to evaluate performance, identify bottlenecks, and drive continuous improvement.

Throughout history, the Lean Movement, Agile Manifesto, and Continuous Delivery Movement have played a significant role in shaping the core principles of DevOps. These movements helped shape DevOps into a practice that is designed to improve efficiency, teamwork, and quality in software development. By understanding their influence, we can better recognize the importance of DevOps in today’s rapidly changing technology world.

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