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History of DevOps

DevOps has changed quite a bit over the years with the main factor pushing this change being the need to deliver software faster and more reliably while keeping the teams aligned. The concepts of lean software development, the agile manifesto, and the continuous delivery movement all played a part in making DevOps what it is today.

Lean Software development or LSD was actually created by Toyota production systems. The Idea behind LSD was to get rid of waste, optimize efficiency, and improve the quality of the product that is being delivered. These concepts were then applied to software development in the early 2000s when a book by Mary and Tom Poppendiek titled "Lean Software Development: An Agile Toolkit" was released. The concept of Lean development would then go on to become popular in the software industry in the 2000s with LSD becoming more integrated with agile methodologies and evolving in different ways based on the current practices. LSD has 7 principles that it focuses on. These are: eliminate waste, deliver as fast as possible, amplify learning, build quality, respect teamwork, delay the commitment, and optimize the whole system. The goal of lean is to build a culture of fast feedback loops, continuous improvement, and delivering value as often and as quick as possible. These principles are a big part of what DevOps is today.

The agile manifesto was created in 2001 when some software developers got together to create a better way to develop software. The Agile Manifesto was a completely new concept focusing on values like respond to change rather than follow a plan and individuals and interactions over processes and tools. Different agile methods such as scrum and XP were created as well, with an emphasis on delivering working software in short iterations which would make it more suited to adapt to rapidly changing requirements. Agile was a 180 degree shift from the classic and more rigid way of waterfall development to a more flexible and user driven way of developing software. However, to actually reap the benefits of agile development, software needs to be deployed as often as it gets developed which is where the continuous delivery movement steps in.

The Continuous Delivery movement, or CD, is the ability to deploy changes such as code, configuration, or infrastructure into production quickly and sustainably. CD focuses on automation of build, test, and deployment pipelines which enable teams to deliver features, fixes, and more into production in a way that is both safe and fast. CD builds on agile's quick iteration cycles and also addresses the bottlenecks that happen in deployment. Different practices like automated testing, infrastructure as code, and deployment pipelines are all big parts of CD. By making sure each change is small, tested, and easily changed back, CD is able to reduce risk.

Lean software development, the agile manifesto, and continuous delivery are all foundational parts of DevOps that are still used to this day. By combining the efficiency of lean, the flexibility of agile, and the automation of CD, DevOps allows organizations to keep up with the fast pace of innovation in tech today.

References:

<https://www.geeksforgeeks.org/lean-software-development-lsd/>

<https://www.atlassian.com/agile/manifesto>

<https://octopus.com/devops/continuous-delivery/>