**The History of DevOps**

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Development and operations (DevOps) are guidelines and best practices for developers and operations to use when reviewing and creating code. As software development has evolved through the years, there have been different movements such as the Lean Movement, the Agile Manifesto, the Continuous Delivery Movement, and DevOps. New movements aim to make software development a more fluent and efficient process.

Before DevOps, software was managed through slower development processes that were not as optimal or efficient (Iheanacho, 2023). Models like the Waterfall model focused on requirements, design, implementation, testing, deployment, and maintenance, yet failed regarding flexibility, handling changes, and not using customer feedback (Iheanacho, 2023). DevOps began around 2008-2009 to address concerns and issues with preexisting software development systems/models (Buchanan, n.d.). Other methodologies were implemented, yet many developers felt that a change needed to be made to make progress and better align with customer wants and needs. The goal is to deliver enhanced software at a quicker rate. DevOps goes beyond changing how software is created and deployed; it encourages a collaborative, innovative environment committed to constant improvement (Smith, 2024). DevOps changed the structure, opting for less division of software practices (Smith, 2024). This improves quality control and makes the software development life cycle less time-consuming (Smith, 2024). DevOps can improve customer relationships, and software can be deployed faster, keeping up with demands. Different and growing movements can be incorporated together.

The Agile Manifesto is a popular movement that is used when developing code. The Agile method was seen as a better alternative to the Waterfall Method, fixing some of its shortcomings while keeping the important aspects (Iheanacho, 2023). Agile's roots go back to 2001, when it was formed from "adaptive and lightweight methods" (Fenton, 2022). Using Agile means a division of tasks is tracked through milestones (Buchanan, n.d.). The Agile Manifesto serves as an agility checklist in other methods (Fenton, 2022).

After the Agile Manifesto, the Lean Movement hit the scene. Like Agile, the Lean movement emphasized a "values and principles" methodology to development (Fenton, 2022). Comparing code to the principles of Agile and Lean helps determine which approach was utilized (Fenton, 2022). The Lean Movement has a broader scope than the Agile Manifesto, adding focus to the "planning, design, testing, and maintenance" stages (Fenton, 2022).

The Continuous Delivery Movement can be included as part of DevOps. It developed from Lean and Agile movements (Fenton, 2022). Continuous integration and delivery focus on "automating the merging and deployment of code" (Buchanan, n.d.). This means engineers are no longer required to change code and perform error checking manually (Buchanan, n.d.). It helps improve and speed up development processes caused by "merging, testing, and deployment functions" (Buchanan, n.d.). The Continuous Delivery Movement creates safer and more cohesive functioning code (Fenton, 2022). According to Fenton (2022), continuous delivery includes five principles: "build quality in, work in small batches, computers perform repetitive tasks and people solve problems, relentlessly pursue continuous improvement, and everyone is responsible".

As software has evolved, so have the processes used to track productivity. Different methods have been formed to help speed up development and address other practices and system shortcomings. These movements include the Lean Movement, the Agile Manifesto, and the Continuous Delivery Movement. These all lead to what is now known as DevOps.

**References**

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