Modern software development thrives on the seamless integration of various processes and teams. DevOps, short for Development and Operations, bridges the gap between software development and IT operations. The goal is to accelerate the development lifecycle and continuously deliver high-quality software. This evolution can be traced back to several significant movements: The Lean Movement, The Agile Manifesto, and The Continuous Delivery Movement.

The Lean Movement evolved in part from the Toyota Production System (TPS) in the mid-20th century. Its principles focus on minimizing waste and maximizing value, promoting practices such as just-in-time (JIT) production, continuous improvement (Kaizen), and respect for people. Lean principles entered the software industry as Lean Software Development, emphasizing efficient workflow, reducing bottlenecks, and optimizing resource usage. The TPS was developed by Kiichiro Toyoda and Taiichi Ohno, who observed the inefficiencies in traditional manufacturing processes and sought to eliminate waste. They introduced concepts like jidoka, automation with a human touch, and JIT, producing only what is needed, when it is needed. These principles have significantly influenced Lean Software Development and, by extension, DevOps practices (Lean Enterprise Institute).

As software development practices continued to evolve, a need for more flexible and collaborative approaches emerged. This led to the creation of the Agile Manifesto. Published in 2001, the Agile Manifesto revolutionized software development by promoting a more flexible and collaborative approach. It introduced four core values: individuals and interactions over processes and tools, working software over comprehensive documentation, customer collaboration over contract negotiation, and responding to change over following a plan. These values laid the groundwork for agile methodologies such as Scrum and Kanban, which prioritize adaptability, teamwork, and customer satisfaction (Agile Alliance).

Building on these agile principles, the Continuous Delivery (CD) Movement emerged to further streamline the software release process and ensure reliability. CD focuses on automating the software release process to ensure that new code can be deployed quickly, reliably, and sustainably. This approach advocates for frequent, small updates rather than infrequent, large releases. Key practices include automated testing, continuous integration, and continuous deployment. Martin Fowler describes Continuous Delivery as building software in such a way that it can be released to production at any time. By keeping the software always in a deployable state, CD minimizes risks and enhances the ability to respond to changes swiftly (Fowler).

The DevOps movement began around 2007, addressing the disconnect between developers and IT operations. DevOps combines practices, tools, and a cultural philosophy that automate and integrate processes between software development and IT teams. It emphasizes team empowerment, cross-team communication, collaboration, and technology automation. DevOps practices draw from the Lean, Agile, and Continuous Delivery movements, creating a blended approach to modern software development. By integrating principles from these movements, DevOps aims to create a culture of collaboration, efficiency, and continuous improvement. This approach ultimately results in the faster and more reliable delivery of better software (Buchanan and DevOps.com).

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