Case Studies

The "DevOps Handbook, 2nd Edition" provides insightful case studies illustrating the challenges and successes experienced by organizations in implementing DevOps practices. Two notable case studies include "Providing Compliance in Regulated Environments" at Etsy and "Relying on Production Telemetry for ATM Systems" at Salesforce.com. These studies offer valuable lessons on improving agility, reliability, and security within technology organizations. This paper will summarize the main points and lessons learned from these case studies, highlighting the transformation and outcomes experienced by Salesforce and Etsy.

Salesforce.com, founded in 2000, faced significant challenges in releasing new functionalities as it grew. By 2007, the company's ability to deploy new features had drastically declined, with the number of releases dropping from four in 2006 to one in 2007, despite hiring more engineers. This decline highlighted the inefficiencies of their traditional waterfall development process. In response, Salesforce embarked on a multiyear DevOps transformation starting in 2009. By 2013, they had reduced deployment lead times from six days to five minutes through the implementation of DevOps principles and practices. Key strategies included integrating automated testing at all stages, performing destructive testing to understand failure modes, and fostering collaboration between development, operations, and information security teams. One significant achievement was having infrastructure changes made through Puppet treated as standard changes, requiring minimal or no further approvals from the change management group. This shift significantly streamlined their deployment process and improved overall service quality.

Etsy’s case study revolves around achieving PCI DSS compliance for their payment application, ICHT. To meet PCI DSS requirements, Etsy separated the ICHT environment from the rest of the organization, creating a distinct team and infrastructure. This segregation involved issuing separate laptops for ICHT team members and isolating the CDE at various levels, including physical, network, and logical infrastructure. Despite successfully meeting PCI DSS requirements and obtaining a signed Report of Compliance, Etsy faced significant internal challenges. The strict separation of duties and compartmentalization within the ICHT team led to a lack of visibility across the software stack, creating fear and reluctance around deployment and maintenance. This compartmentalization resulted in an "impenetrable wall" between developers and operations, undermining the collaborative culture that had been fostered in other parts of the organization.

The lessons learned from Salesforce’s transformation include the importance of automated testing, the value of destructive testing for understanding system limits, and the benefits of making quality engineering a shared responsibility across all teams. Additionally, integrating security early in the development process and achieving repeatability and rigor in infrastructure changes were critical to their success. The key lessons from Etsy’s experience include the potential negative impact of stringent compliance requirements on team dynamics and collaboration. While segregation can limit the scope of compliance and protect sensitive data, it can also create silos that hinder effective communication and teamwork. Balancing compliance with maintaining a collaborative and integrated team environment is essential for sustaining DevOps practices and ensuring smooth deployments.

The case studies of Salesforce and Etsy highlight the complexities and trade-offs involved in implementing DevOps in regulated environments. Salesforce’s success underscores the importance of automation, collaboration, and integrating security early in the development process. In contrast, Etsy’s challenges illustrate the potential downsides of strict compliance measures that can lead to silos and hinder team collaboration. Organizations must carefully consider their unique contexts and requirements when adopting DevOps practices, ensuring that compliance and security measures do not compromise the collaborative culture essential for DevOps success. These case studies provide valuable insights for other organizations navigating the path to agility, reliability, and security in their technology operations.

Bibliography

Kim, Gene, et al. The DevOps Handbook: How to Create World-Class Agility, Reliability, & Security in Technology Organizations. 2nd ed., IT Revolution Press, 2021.