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CSD-380 Assignment 2.2

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To summarize the case study in Chapter 6 of the DevOps Handbook the Authors discuss Operation InVersion. LinkedIn had been struggling with their older monolithic architecture for an application of their own design Leo. With Leo they had a monolithic application that connected to several Oracle Databases and had every webpage deployed through servlets. This complexity and interlinked nature of everything being a part of a singular application caused them to really struggle with deployments and as a result they wanted to modernize operations and so they spun up a modernization project. Operation InVersion was a two-month initiative to overhaul its computing environment and architecture During this timeframe LinkedIn halted feature development to address technical debt. By decoupling services and implementing automated testing, LinkedIn improved its deployment frequency and developer productivity, which enabled them to scale and innovate far more efficiently. Operation InVersion allowed LinkedIn to manage technical debt effectively, avoiding future crises and fostering long-term growth.

A few key points from the project are:

* **Technical Debt Impact:** LinkedIn’s monolithic architecture, Leo, hindered development and caused frequent outages, leading to the need for a complete overhaul.
* **Operation InVersion:** LinkedIn halted feature development for two months to address technical debt, revamping their infrastructure and architecture.
* **Growth and Scalability Challenges:** LinkedIn’s rapid user growth necessitated a shift from a monolithic to a microservices architecture to handle increasing traffic and ensure system stability.
* **Operation InVersion Goal:** To revamp LinkedIn’s computing architecture and improve efficiency by improving tooling, deployments, infrastructure, and developer productivity to enable engineering agility.
* **Operation InVersion Impact:** LinkedIn developed new software and tools that enabled faster feature deployment and reduced late-night work.
* **Operation InVersion Result:** LinkedIn’s engineering team can now perform major site upgrades three times a day and enabled LinkedIn to scale from 150 to 750+ services and set the stage for future growth.
* **Technical Debt Management:** LinkedIn emphasizes addressing technical debt proactively to avoid major disruptions and maintain stability.

In the end Operation InVersion allowed LinkedIn to embrace modern architectures such as micro services and leveraged automation to improve deployment speeds resulting in massive improvements in the ability to resolve bugs or develop features and deploy it to production. The once monolithic application where everything was a part of a singular application split into a substantially larger number of microservices Josh Clemm from linked in describes the change by stating “Scaling can be measured across many dimensions, including organizational. . . . [Operation InVersion] allowed the entire engineering organization to focus on improving tooling and deployment, infrastructure, and developer productivity. It was successful in enabling the engineering agility we need to build the scalable new products we have today. . . . [In] 2010, we already had over 150 separate services. Today, we have over 750 services.” This quote shows how much they were able to scale and by leveraging automation and DevOps principles they were able to massively improve their number of deployments. Scott Vance describes the changes saying “Scaling can be measured across many dimensions, including organizational. . . . [Operation InVersion] allowed the entire engineering organization to focus on improving tooling and deployment, infrastructure, and developer productivity. It was successful in enabling the engineering agility we need to build the scalable new products we have today. . . . [In] 2010, we already had over 150 separate services. Today, we have over 750 services.” With the ability to upgrade everything faster and the move off of their monolithic architecture they were able to really stem their technical debt and to move quicker in all aspects going forward.

**References**

Kim, G., Humble, J., Debois, P., Willis, J., & Forsgren, N. (2021). *The DevOps Handbook, 2nd Edition: How to Create World-Class Agility, Reliability, & Security in Technology Organizations*. IT Revolution.