DASA DevOps Fundamentals

Post-Course Reading

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My Notes

The purpose of the pre-course reading material is to let you know about:

- Who are the DevOps leaders?
- How do DevOps experts think?

The understanding will enable you to go creative and implement the ways that will help you transform your organization in the DevOps way successfully.

The DevOps Leaders - The Real-life Success Stories

1. AMAZON

Back when Amazon was still run on dedicated servers, it was a constant challenge to predict how much equipment to buy to meet traffic demands and pad estimates to accommodate for unforeseen traffic spikes. As a result, about 40 percent of Amazon's server capacity was wasted—and during the Christmas shopping season, when traffic could triple, more than three-quarters could be left unused—along with the money spent to purchase it.

Once the online retailer moved to the Amazon Web Services (AWS) cloud, it allowed engineers to scale capacity up or down incrementally. Not only did this reduce spending on server capacity, but it also spurred a transition to a continuous deployment process that allows any developer to deploy their own code to whichever servers they need, whenever they want.

Within a year of Amazon's move to AWS, engineers were deploying code every 11.7 seconds, on average. The agile approach also reduced both the number and duration of outages, resulting in increased revenue.

2. NETFLIX

When Netflix evolved its business model from shipping DVDs to streaming video over the web, it waded into uncharted waters. There weren't any commercial tools available help keep the company's massive cloud infrastructure running smoothly, so it turned to open source solutions. Enlisting the volunteer help of hundreds of developers, it created the Simian Army, a suite of automated tools that stress test Netflix's infrastructure and allow the company to proactively identify and resolve vulnerabilities before they impact customers.

Since then, Netflix has continued its commitment to automation and open source, and today engineers deploy code thousands of times per day. This year, Netflix was unanimously selected for the JAX Special Jury Award, with JAXenter editor Coman Hamilton declaring, "The rate at which this entertainment game-changer has adopted new technologies and implemented them into its DevOps approach is setting new standards in IT."

3. TARGET

Inside Target, several groups have been evangelizing DevOps for years. According to technical architect Dan Cundiff, what "started out in small corners of development and infrastructure teams has since caught on like wildfire."

He's not exaggerating. These days DevOps not only powers the development of projects like Cartwheel, Target's mobile savings app, but also has transformed the organization's culture. Target now hosts DevOpsDays for its internal teams, featuring demos, open labs, lightning talks, breakout sessions, and guest keynotes. It also continues to spread the good word through the business community by sponsoring Minneapolis DevOpsDays meetups.

4. WALMART

While Walmart is the king of big box retailers in the American heartland, online it has always struggled in the shadow of Amazon. To gain ground, it assembled a cutting-edge team through several tech acquisitions and founded WalmartLabs, the retailer's technology innovation and development arm, in 2011.

WalmartLabs has taken a decidedly DevOps approach to its mission. It incorporated OneOps cloud-based technology, which automates and accelerates application deployment. It has also created several open source tools, including Hapi, a Node.js framework for building applications and services that allows developers to focus on writing reusable application logic instead of spending time building infrastructure. More recently, it has deployed more than 100,000 OpenStack cores to build its own private cloud, and it continues to evolve its agile approach.

5. NORDSTROM

Nordstrom's development model still included a waterfall delivery method, big batch releases, and lots of shared services when it undertook rewriting its in-store clienteling application. When it finally launched the program two and a half years later in 2011, it was already irrelevant. "It was a big wake up call for us as an organization that we had to figure out a way to deliver in this new context," says Courtney Kissler, vice president of e-commerce and store technologies.

Nordstrom's customer mobile app team was the groundbreaker for its DevOps makeover. After surfacing the reasons behind mobile's 22- to 28-week lead time, the team broke down the divide between dev and product support and organized squads around value. The company also migrated to continuous planning and moved to a single backlog of work. As a result, bugs went down, throughput went up, and releases went from twice per year to monthly. More importantly, Nordstrom realized these methods could work for any team, and it's continuing to apply them across the organization.

6. FACEBOOK

Facebook helped change the way we think about software development. Many of the tenets it adopted early on, including code ownership, incremental changes, automation, and continuous improvement, were DevOps in all but name. Its approach has matured over the years, and it recently migrated its entire infrastructure and back-end IT to the Chef configuration management platform (and made some of its cookbooks available to the public).

Facebook's accelerated development lifecycle continues to reshape consumers' expectations of software. Its recently announced bi-weekly app updates effectively served notice that constant, rapid refreshes for mobile apps are the new normal, and any company that can't keep up risks getting left behind.

7. ETSY

For its first several years, Etsy struggled with slow, painful site updates that frequently caused the site to go down. In addition to frustrating visitors, any downtime impacted sales for Etsy's millions of users who sold goods through the online marketplace and risked driving them to a competitor.

With the help of a new technical management team, Etsy transitioned from its waterfall model, which produced four-hour full-site deployments twice weekly, to a more agile approach. Today, it has a fully automated deployment pipeline, and its continuous delivery practices have reportedly resulted in more than 50 deployments a day with fewer disruptions. And though Etsy has no DevOps group per se, its commitment to collaboration across teams has made the company a model of the DevOps framework.

8. ADOBE

Adobe's DevOps transformation began five years ago when the company moved from packaged software to a cloud services model and was suddenly faced with making a continuous series of small software updates rather than big, semi-annual releases.

To maintain the required pace, Adobe uses CloudMunch's end-to-end DevOps platform to automate and manage its deployments. Because it integrates with a variety of software, developers can continue to use their preferred tools, and its multi-project view allows them to see how a change to any one Adobe product affects the others.

The move has enabled faster delivery and better product management, and according to the *Wall Street Journal*, Adobe has already been able to meet 60 percent more app development demand.

9. SONY PICTURES ENTERTAINMENT

Sony Pictures Entertainment's Digital Media Group (DMG) faced significant challenges delivering a software system to manage entertainment assets for end users. Manual processes and other hurdles typically resulted in a months-long delay between completion of software development and delivery.

To smooth out this "last mile," DMG implemented an automated cloud delivery system composed of open source tools and SaaS solutions. Since adopting a continuous delivery model, DMG has cut down its months-long delivery time to just minutes. This allowed developers to focus on adding features and reduced idle resources and associated costs.

10. FIDELITY WORLDWIDE INVESTMENT

Like many enterprises, Fidelity Worldwide Investment had several business units developing software applications and was burdened with legacy release processes that placed huge demands on its teams. Apps were deployed manually across hundreds of servers, with each app requiring customization. Manually introduced errors frequently broke the process.

When it came time to develop a critical trading application with a firm launch date, the organization knew its error-prone manual process would jeopardize the project. Fidelity used the opportunity to embrace a DevOps approach and implement an automated software release framework that would enable it to meet the rollout schedule.

That solution resulted in more than $2.3 million per year in cost avoidance for that app alone. Since then, the Fidelity team has automated the release of dozens of applications, reducing release times from two to three days to one to two hours and decreasing test-team downtime. The process has also made it easier to display regulatory compliance and has enabled predictable release schedules that stakeholders can rely on.

Source: https://techbeacon.com/devops/10-companies-killing-it-devops

White Papers by DevOps Gurus

Go through the White Papers listed in the following table to know what experts think about DevOps and their experiences.

White Paper	Web Link
The Business Value of DevOps	https://www.devopsagileskills.org/resources/document/white-paper-the-business-value-of-devops/
Lean and DevOps: All in the Family	https://www.devopsagileskills.org/resources/document/white-paper-lean-and-devops-all-in-the-family/
The Need for New Skills - DASA DevOps Competence Framework	https://www.devopsagileskills.org/resources/document/white-paper-the-need-for-new-skills-dasa-devops-competence-framework/
Embracing Digital Disruption by Adopting DevOps Practices	https://www.devopsagileskills.org/resources/document/white-paper-embracing-digital-disruption-by-adopting-devops-practices/
Active Learning Delivering Business Value	https://www.devopsagileskills.org/resources/document/white-paper-active-learning-delivering-business-value/

