

# Collaboration is the key to DevOps success

*As one of the world's largest business software companies, SAP has more than 20,000 developers on teams scattered across the globe. In today's DevOps environment, SAP leadership knows that the **success of this enormous operation** hinges on easy collaboration among far-flung teams and individual developers. That has meant finding an effective way for everyone to communicate and work together, while at the same time driving greater efficiency and creativity.*

Dominik Tornow, SAP's director of engineering with the labs processes and tools group, believes that centralized processes don't enable innovation. Developers, architects, and product managers all want to deliver exceptional, exciting, and continuous functionality. To do this, they need to be able to collaborate on their own terms.

## **The question is, "how?"**

Because DevOps has been so widely accepted and used, companies and organizations are looking for ways to optimize efficiency from this software development methodology. With DevOps, a central aim is to drive

efficiency across the entire systems development lifecycle. And, as research shows, DevOps continues growing rapidly.

## **DevOps efficiency is about people collaborating, not technology**

In a recent global study of IT leaders across 10 major industries, TechTarget reported a 17% year-to-year growth in organizations that have adopted DevOps, leaving only 30% with no DevOps initiatives as of yet. Respondents ranked "eliminating process bottlenecks to speed app release" as the top DevOps challenge,

followed closely by “streamlining collaboration among cross-functional DevOps teams.” While other challenges further down the list relate to things like software infrastructure, cloud integration, and tools selection, the top two challenges relate to people, not technology.<sup>1</sup>

In the 2018 version of another major annual study of DevOps, the percentage of respondents working in a “department called DevOps” grew by a brisk 20%, with the biggest leap occurring in the last year. This global study additionally found that 36% of respondents are currently developing from one-quarter to 100% of their applications by DevOps processes.<sup>2</sup>

Alanna Brown, who launched the annual study above in 2012, doubled down on the “people not technology” challenge of boosting DevOps efficiency. She wrote in a recent blog, “The most important themes for us have always been empowering teams to do their best work, overcoming the cultural divide between development and operations teams and making IT better for everyone.”<sup>3</sup>

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**In fact, the 2018 report itself notes that best practices in DevOps start “by improving collaboration.” The report explains further that, “Cross-team sharing is key to scaling DevOps success. The practices with the most significant impact across the entire DevOps evolutionary journey are dependent on sharing. Organizations that have small pockets of DevOps success, yet never manage to spread that success further, are stalled and cannot progress to higher levels of automation and self-service.”<sup>4</sup>**

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1 “Informing the path to enterprise DevOps deployments,” TechTarget, October 2018.

2 “2018 State of DevOps Report,” Puppet, 2018.

3 “2018 State of DevOps Report: Practical guidance for your DevOps evolution,” Puppet Blog, September 2018.

4 Ibid(2).

## Open source, DevOps, and collaboration

As DevOps adoption has grown in recent years, open source has grown right along with it. One projection of the tremendous interest in open source globally shows revenues doubling in just three years to \$26 billion.<sup>5</sup> Collaboration is intertwined with open source, whereby software is often developed in a highly collaborative public process. In fact, global organizations across every industry have been rapidly incorporating open source best practices into how they build and deploy software.

Many organizations are embracing “innersource”—essentially open source behind a firewall. Innersource is a highly collaborative development methodology using best practices from large-scale open source projects. Such projects, like Kubernetes or Microsoft’s Visual Studio Code, require coordination across literally thousands of developers and other contributors. Experiences with innersource have resulted in a [list of best practices](#) for uniting innersource, open source, and DevOps to drive collaboration and efficiency.

Innersource is proving to be a key weapon against the top DevOps challenge noted earlier. Innersource focuses not only on the collaboration of development and operations, but also on the collaboration of all teams in the software process.

“Once you embrace it (innersource) and see how new teams come on, you show examples of places where not only can people contribute, you unlock bottlenecks,” says Jeremy King, executive vice president and chief technology officer for global e-commerce at Walmart. And Jeff Jagoda, senior software engineer at IBM, says that, “We see innersource as a way to improve efficiency through code reuse. But even beyond that, it’s an amazing conduit for learning and exchanging ideas and facilitating innovation within IBM.”

## Team efforts to boost collaboration in DevOps

- **SAP taps into the “wisdom of the crowds”**

5 “Projected revenue of open source services from 2017 to 2022 (in billions U.S. dollars),” Statista, 2018.

Some user organizations are frustratingly jogging in place when it comes to efforts to overcome DevOps challenges. At SAP, mentioned at the start of this paper, a single group within its huge internal development complex approached management about leveraging an innovative development platform, GitHub, to optimize collaboration among team members spread around the globe.

Initial successes with GitHub spread by word of mouth. Soon other developers on other projects were readily sharing code and ideas for creating practical, agile workflows, according to SAP's Tornow. As he reported, the collaborative nature of the platform's "commits, comments, and issues" became core ingredients for efficiency and innovation. In one case, Tornow's group initialized a project containing just a few files on the platform. Within 24 hours, a team 12 time zones away contacted the team, asking if they could contribute.

- **C.H. Robinson replaces siloes with collaboration—and superior software**

Facing rapid growth, third party logistics leader C.H. Robinson needed to ensure its 800-person IT and developer staff stayed aligned working as a team, despite being spread across numerous offices on three continents. This meant making the team's workflows as collaborative and transparent as possible.

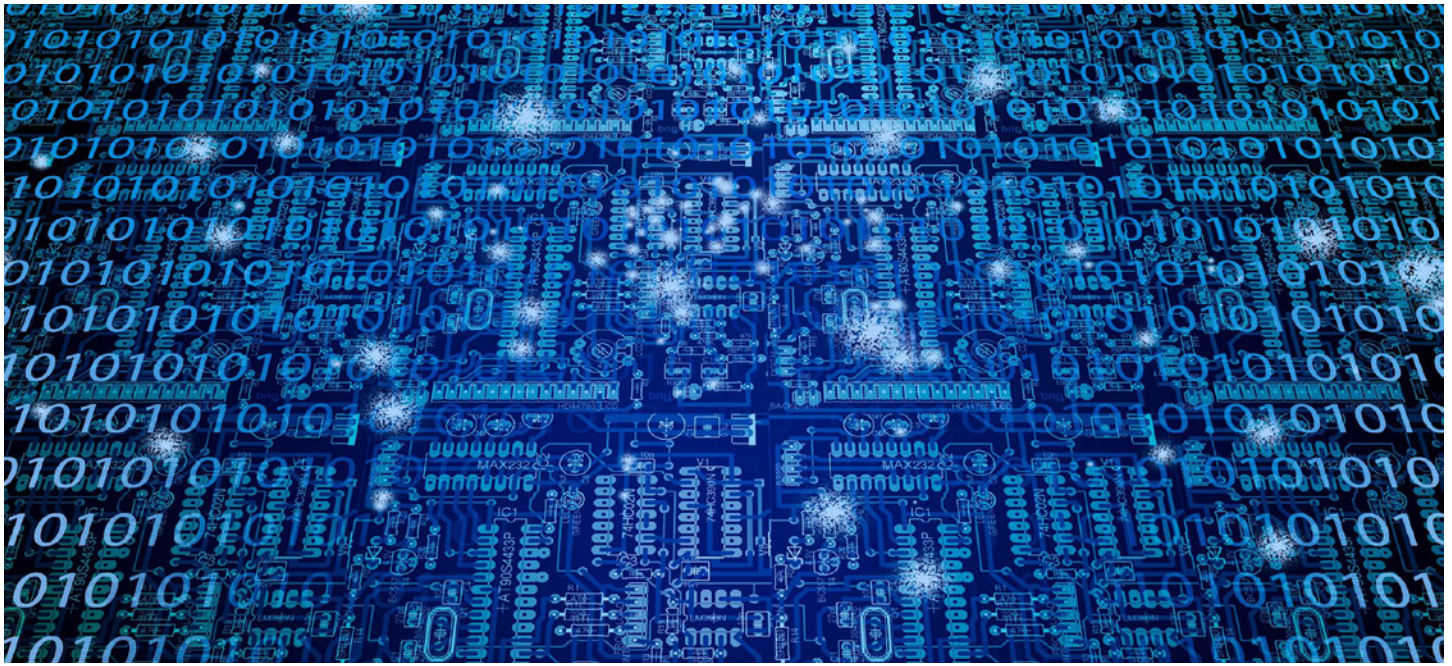
The relative autonomy given to developer teams also gave them some freedom to choose their own tools, which was causing problems in standardizing code and providing project visibility and documentation. Developers had no good way of working on someone else's code, even if they could locate it. In an effort to empower local development teams, the company had inadvertently created a siloed IT organization.

To deal with this situation, C.H. Robinson turned to the GitHub collaboration platform along with an agile project management tool. The result to date has been an organization-wide change "towards openness that surfaces the best solutions," according to Tyler Patterson, engineering craft manager. "We're actually doing things internally to advertise code. [The tools] let us execute on openness, tearing down the IT wall, the code wall, the source control wall...allowing us to be an open and collaborative department and team, and deliver on better products....We're harnessing the power of other developers across the world. This is what makes our IT world great."

- **University of Minnesota taps the power of collaboration from 230 departments and administrative units**

The right collaboration platform also proved to be the engine of efficiency and

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innovation at the University of Minnesota, where developers are spread across the state in 230 different development departments. As with SAP, a small developer group saw a need for what it called “a social network for collaborating on code.” After this group adopted GitHub, the same platform was quickly made available across the entire 60,000-student university.

According to Peter Walz, a system engineer at the university, the collaboration platform has resulted in expedited code pushes and pull requests, the use of which has resulted in significant workflow improvements. “You can easily see what changes are about to be made before they are merged in,” he says. Walz also reported a reduced impact on IT administration as the platform allows users to set permissions and self-service on support. Overall, Walz said, GitHub has “simplified cross-departmental collaboration.”

### **GitHub is the secret sauce for collaboration**

As shown, the one thing the three diverse organizations above all have in common when it came to selecting a platform to drive collaboration and efficiency to new

heights is [GitHub](#). SAP, C.H. Robinson, and the University of Minnesota join 2.1 million organizations and 31 million developers worldwide currently using GitHub. These organizations and developers collectively comprise the world’s largest open source community—sharing code, working securely together, and building better software, faster. Beyond being home to the largest open source community, [GitHub is also easy to use](#). As stated by Amir Jaballah, global head of continuous delivery platform at banking giant [Societe Generale](#), “I’ve rarely seen such enthusiasm for the deployment and adoption of a new solution.”

As a highly versatile platform, GitHub can be deployed as on-premises, SaaS, or a hybrid of both with GitHub Connect. Its advanced auditing and monitoring tools let development teams work together and collaborate while meeting critical requirements within the confines of the secure, internal environment.

Whether it is used on-premises with existing servers or in a private cloud, GitHub can help DevOps teams boost overall development efficiency with flexible deployment options, centralized permissions, literally hundreds of



integrations, and technical support.

Key elements of the GitHub platform include:

## Collaboration

With pull requests and issues, collaboration and code review are built into the development process. Internal and outsourced teams can share work, discuss changes, and get feedback all in one place. This helps organizations share expertise internally and avoid reinventing field-tested solutions developed for other projects.

## Security

AI-powered security alerts send notifications when vulnerable dependencies are being used in a project. Since the launch of security alerts in 2017, over five million alerts have been sent to help the GitHub community keep their projects safe. Token scanning detects and invalidates secrets pushed to GitHub. This enhanced security allows companies to ship when they want to ship, creating an environment where companies can test and experiment refactored legacy apps and optimize outcomes. Branch protections also ensure changes are reviewed and have gone through CI, GPG verifications, and audit logs.

## Integration

GitHub supports custom tools and hundreds of third party apps and services. Using services like Jenkins, CircleCI, Travis CI, or BuildKite, GitHub helps automate workflows according to your production environment. The growing number of tools and integrations are accessible at the [GitHub Marketplace](#). They include Sentry for real-time, cross-platform crash reporting and error logging; as well as issue.sh for agile project management inside GitHub, without access to code.

## Community

Trusted by 2.1 million organizations and loved by over 31 million developers, GitHub brings the power of the [open source](#) community to teams at work. Teams can tap into new projects, find solutions, and build better software with support from developers around the world.

GitHub is how people build software. Trusted by over 30 million developers and half of the Fortune 500, GitHub helps DevOps teams of every size collaborate securely—and deliver better customer experiences, faster. To start your free trial or learn more about GitHub's on-premises and SaaS solutions, visit <https://github.com/business>.