



Results of a Survey on DevOpsTrends

Conducted by Replay Solutions

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Overview of DevOps 2011 Trends Survey

Because we have a very diverse community of customers and we work across the range of software development, test and deployment we find our *Software Development Trends* survey extremely helpful in planning our product roadmap and overall business strategy. Our most recent survey, *DevOps 2011*, was conducted in collaboration with HP and follows an in-depth survey of Java Platform trends that we released in mid-2010.

We believe this is the first DevOps study to combine both technology and management perspectives, providing an integrated look at DevOps motivation, adoption and (importantly) results in organizations from less than 100 people to the Global 100. In addition to comprehensively covering a range of organization sizes, the survey represents a wide mix of industries including retail, manufacturing, financial services, healthcare, education, and consulting.

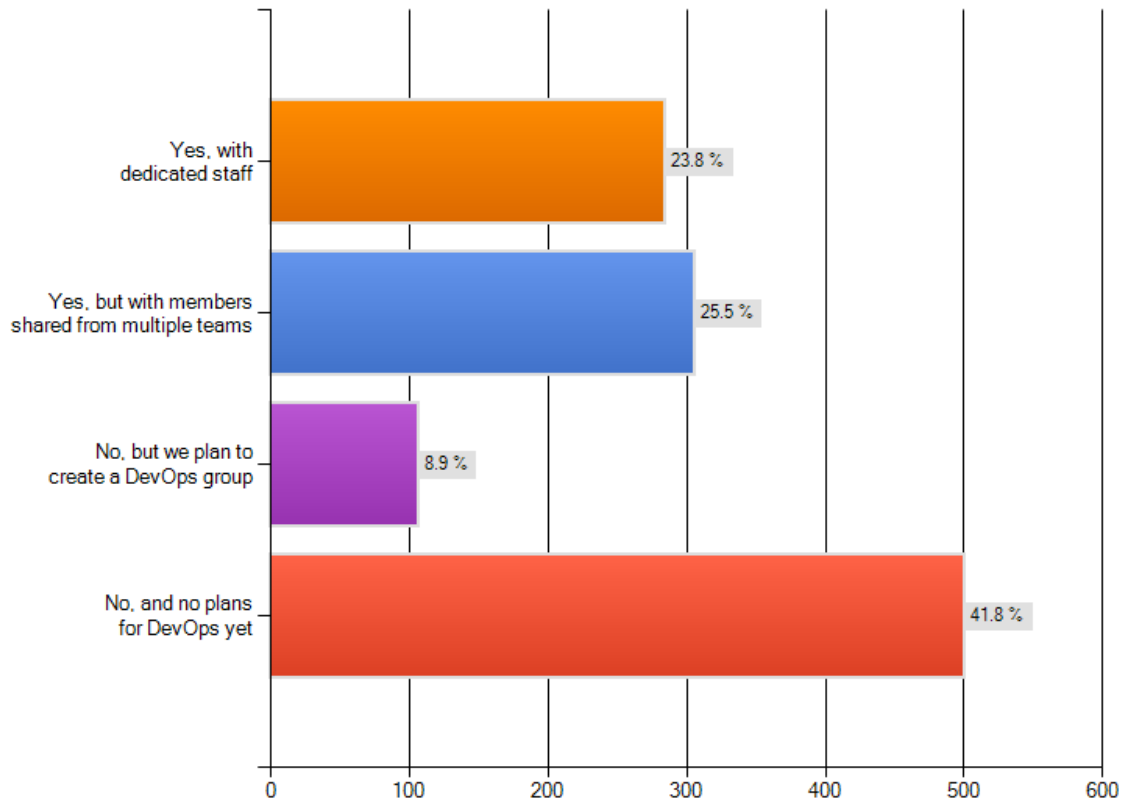
Finally, because there are a lot of opinions about what DevOps is and is not, we used the Wikipedia.org definition to set a common baseline: DevOps “is a set of processes, methods and systems for communication, collaboration and integration between departments for Development (Applications/Software Engineering), Technology Operations and Quality Assurance (QA).” In retrospect, the survey results very much support the scope and perspective of this definition.

Survey Results—Heavy Adoption, Multiple Benefits

The specific questions and answers for the DevOps 2011 survey are available at <http://replaysolutions.com/downloads/DevOps-2011-TrendsSurvey.pdf>, but we wanted to highlight some of the key findings because they both confirm what might be considered “conventional wisdom” while also providing some very unexpected results.

Probably the most important and certainly the most surprising data came right at the start from Question 1 (“Is there a DevOps group in your organization?”). Almost 25% of the responders have a formal DevOps process with dedicated staff. In addition, another approximately 25% practice DevOps with personnel from shared teams. Given both the technology and organization challenges in executing DevOps and the “bleeding edge” connotation that DevOps carries, that almost 50% of the responders are heavily committed to DevOps was completely unforeseen.

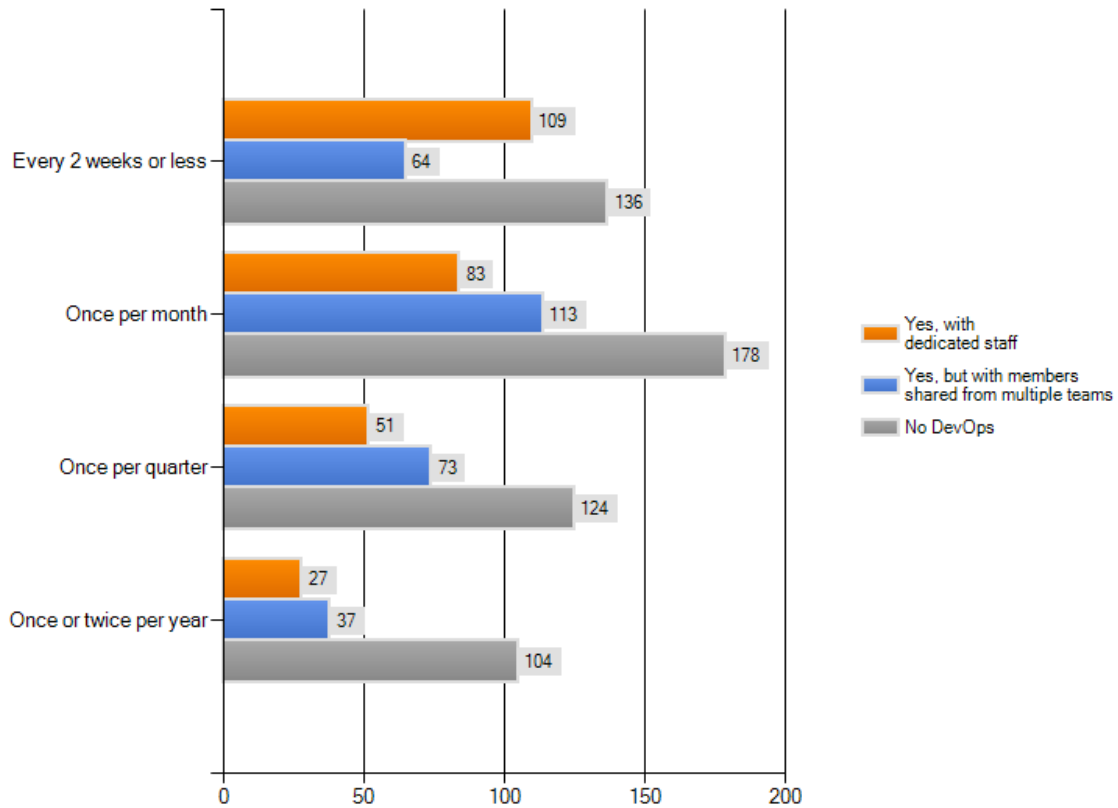
Is there a DevOps group in your organization?



This outcome becomes clearer when you do a bit of correlation between the usage DevOps and the results that are achieved. Again, another important but unexpected outcome: not only does DevOps deliver a higher velocity deployment environment; it also produces a higher quality result.

To see that in action, we correlated the answer to Question 11 (“On average, your team releases software update/patches....?”) with DevOps adoption. Of those organizations who release every 2 weeks or less, 64% utilize DevOps. As the release timing increases to once per month, per quarter, etc., the use of DevOps drops by one third. So, the presumed speed benefit is clearly evident.

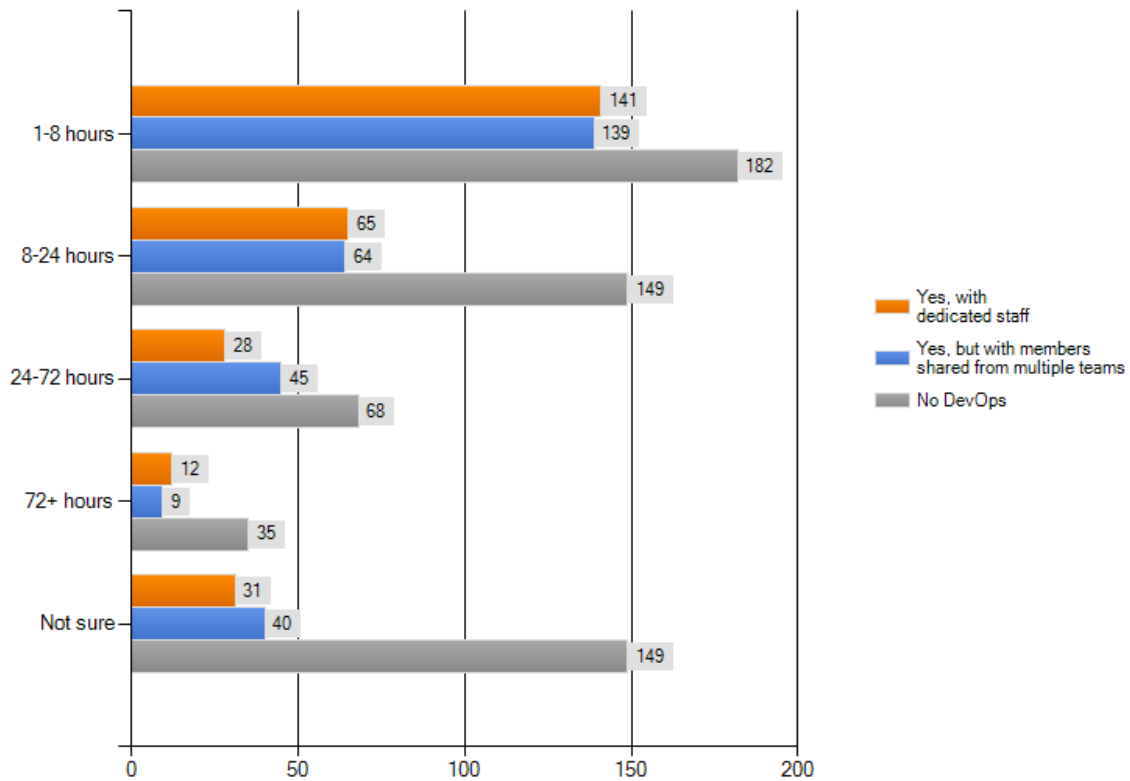
On average, your team releases software updates/patches?



The survey has two quality-oriented questions. Question 9 asks about the mean time to resolve high priority defects and Question 11 reports on the percentage of defects that go undiscovered until production deployment. So, to test the relationship of DevOps and quality, we again correlated the results of those two questions with the adoption of the DevOps process.

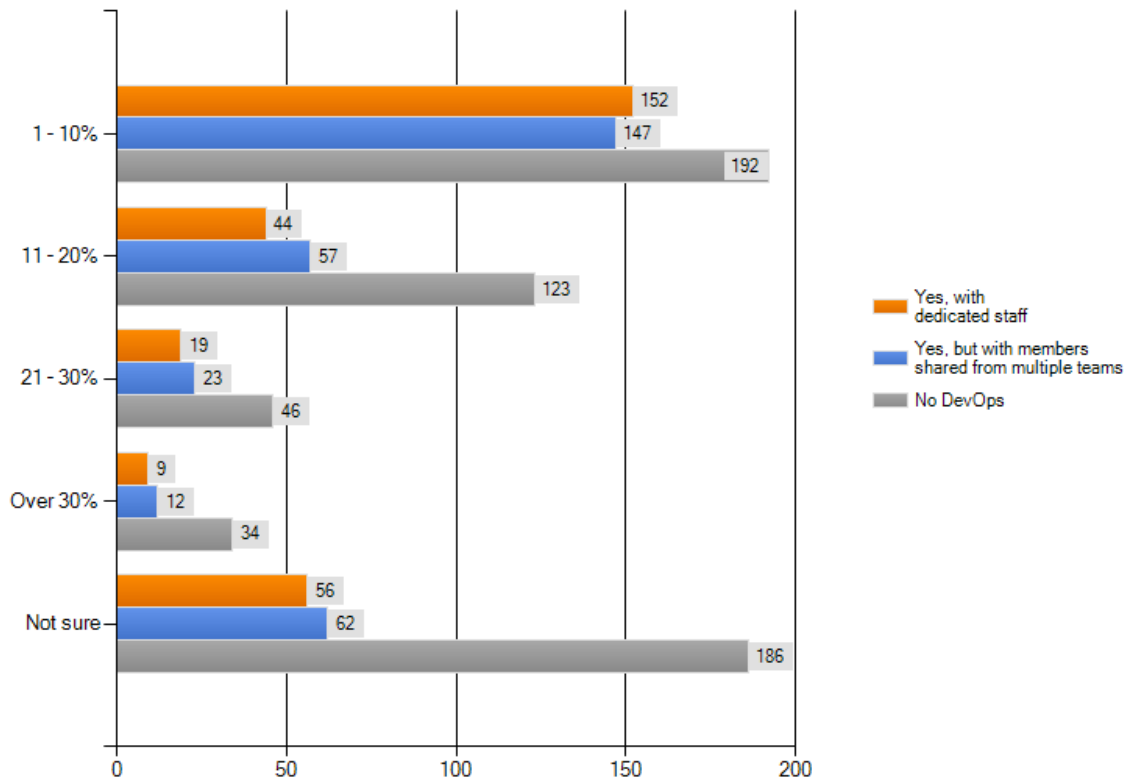
While the positive relationship between speed and DevOps is easily anticipated, the direct connection to improved quality is not. For those who resolved defects within 1-8 hours, almost 70% are DevOps shops. As the time to clear high severity defects increases, there is corresponding reduction in DevOps adoption.

On average, how quickly are Severity-1 (Showstopper) and Severity-2 issues resolved?



Similarly, organizations who had the smallest number of defects making it into production deployments had the highest utilization of DevOps. In both instances, the best quality scores came from organizations with the highest level of dedicated DevOps teams.

What percentage (%) of reported defects are not discovered until Production / Operations?

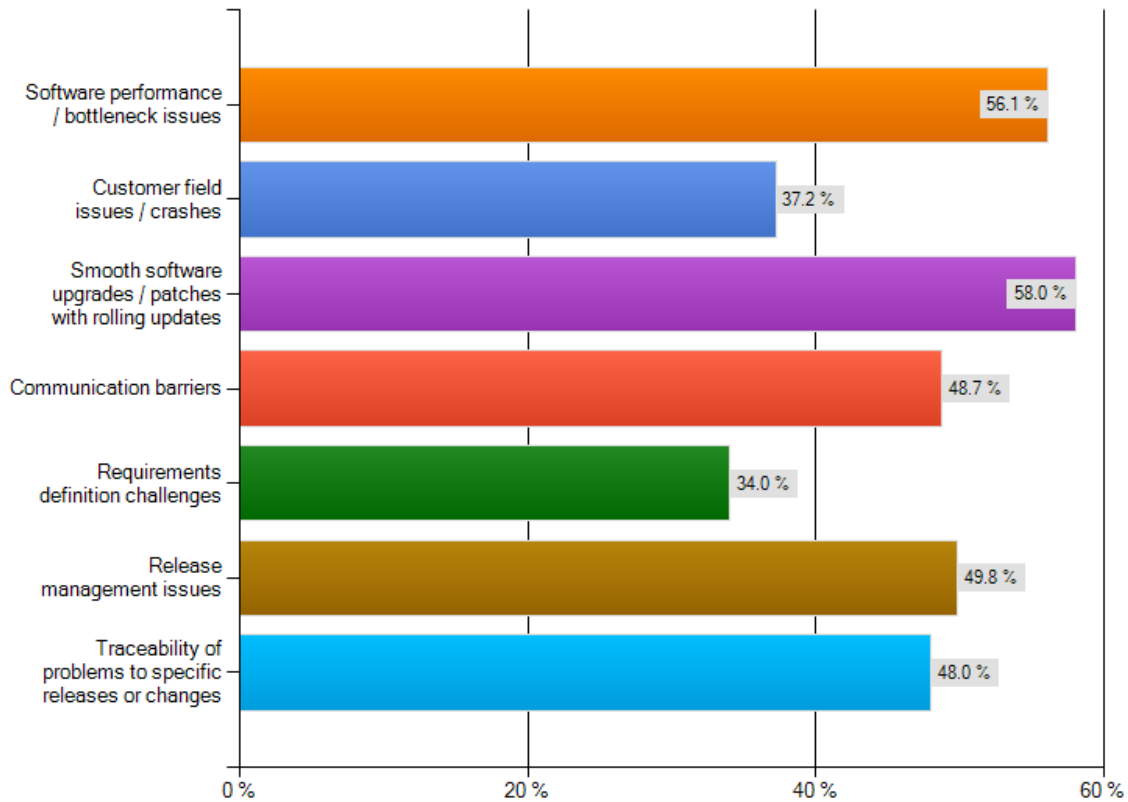


So, given that DevOps appears to deliver the dual benefit of increased speed and higher quality, it isn't surprising that so many organizations have implemented it.

Survey Results—The Importance of Organization

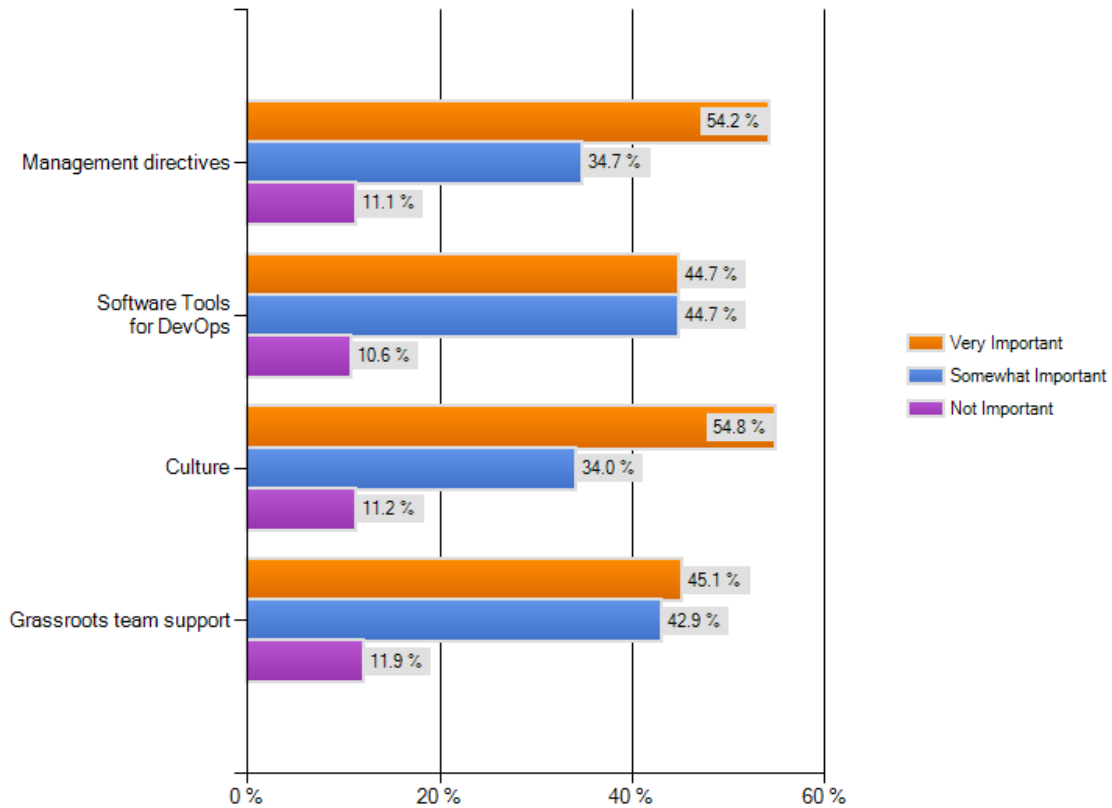
When we talk to DevOps practitioners, it is striking to hear how much emphasis they place on the human and organizational aspects of DevOps. We hear about “breaking down silos” and “putting a face and name” on the different parts of the development and deployment process in order to create a more collaborative and trusting environment. Terms like “handoff” are stricken from the vernacular because they imply that development isn't informed and responsible for QA; that QA doesn't care about operations, etc. Successful DevOps creates overlapping organizational insight and responsibility with the common goal of delivering the right business result.

Which challenges can DevOps teams uniquely address?



The study clearly highlights the connection between DevOps and the “soft” side of IT. Question 3 asked the responders to rank the importance of various DevOps “drivers”. By a wide margin, “Culture” and “Management Directives” topped the list. Question 2 asked about the biggest DevOps benefits and again it was “Team Communication” that topped the list. Consistent with this theme, a top response to Question 7 (“Which challenges can DevOps teams uniquely address?”) was “Communication Barriers”.

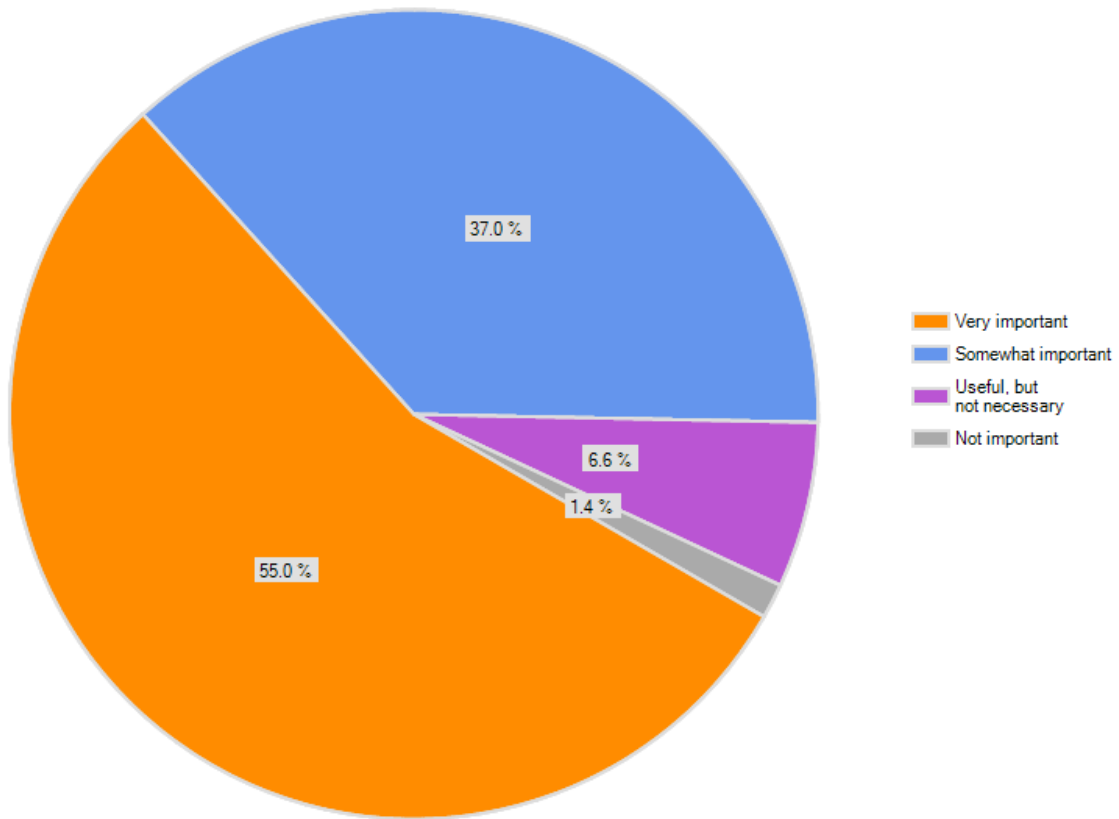
Rank the importance of the following drivers for DevOps?



Survey Results—Technology Still Matters

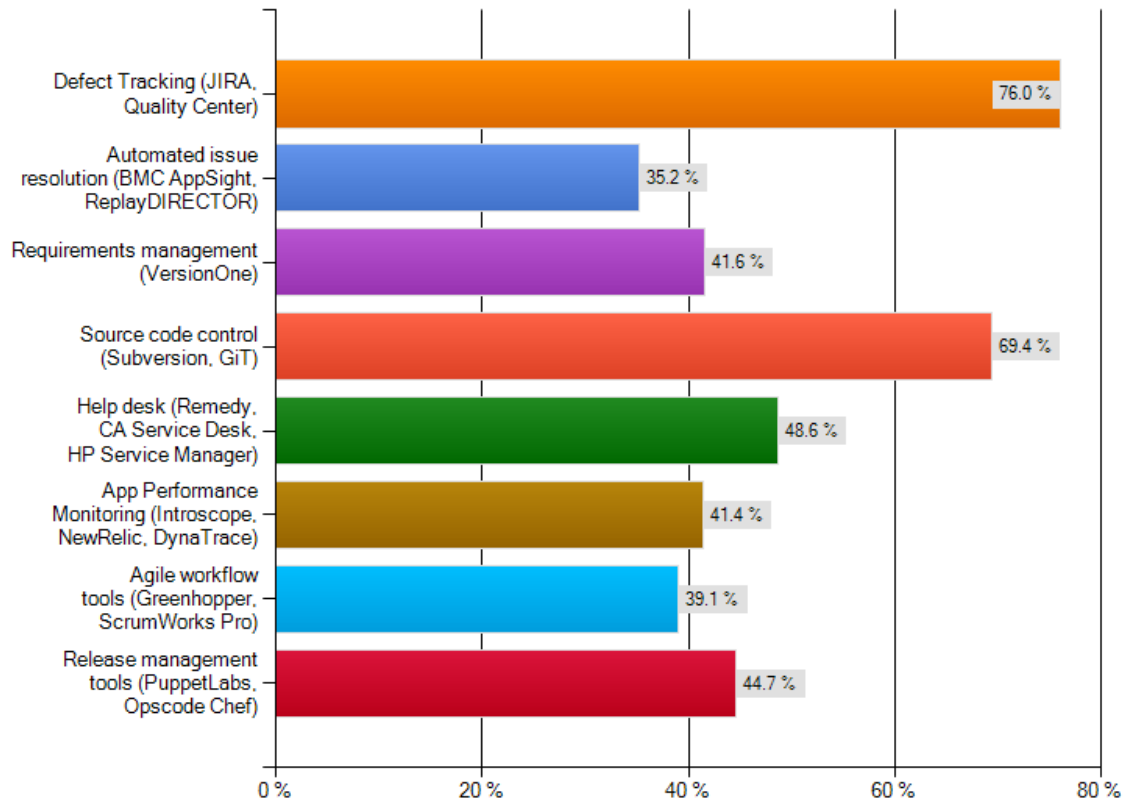
Despite the emphasis on organization, the survey is also clear that technology is also a key driver. This shows up in the results of Question 6, which asked about the importance of software tools in enabling DevOps. Over 90% indicated that software tools were either “important” or “somewhat important” to DevOps success.

How important are software tools to enabling DevOps?



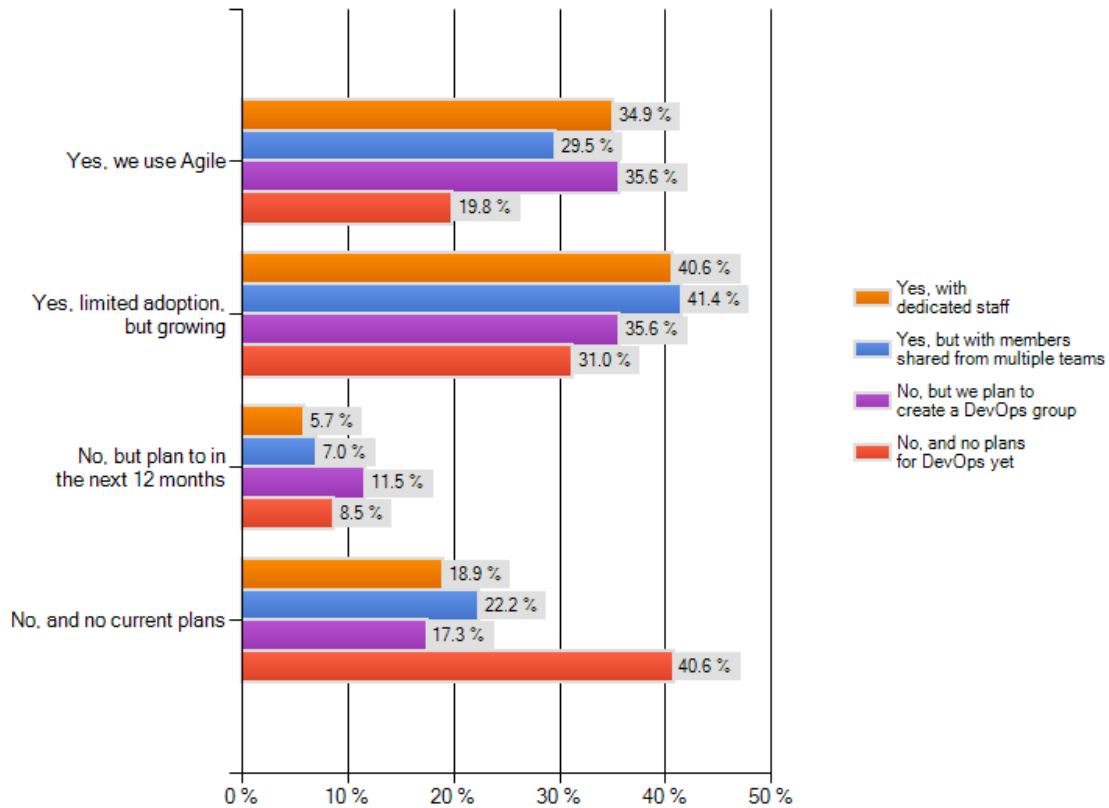
Tools cited ranged from defect tracking and source code control systems to agile workflow tools and automated defect resolution tools.

What types of tools are important to DevOps? (Click all that apply)



As a tie-in with our *Java Platform Trends 2010* survey, Question 4 highlighted two major industry trends as being the most important to DevOps: data center automation and cloud computing. Not surprisingly, Agile Development is also a key DevOps driver. Based on the results of Question 13, over 60% of the responders said they use Agile in at least some part of their organization. With a bit more drill down, we can see that those organizations with DevOps programs were several times more likely to have a complementary Agile program than those yet to adopt DevOps.

Has your organization adopted Agile methodologies?



Summary

Before the survey was taken our expectation was that DevOps was more of a headline/marketing trend than a mainstream IT practice. Seeing the clear benefits in terms of both speed and quality that DevOps delivers, the fact that almost 50% of those responding claimed some type of DevOps program is not surprising. Like any survey and responses, we understand that our analysis and conclusions are only as good as the original data. While we had very statistically relevant response (over 1000) with consistent behavior in filling out the form, the proof in these conclusions is in how well IT keeps up with business requirements. The limitations of surveys notwithstanding, it is clear that anything that can take IT out of the critical path by reducing schedules and freeing resources to do creative, productive work--any set of processes and technologies that achieves this--will move rapidly to mainstream adoption.