

# DevOps: The Worst-Kept Secret to Winning in the Application Economy

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## Executive Summary

The application economy is motivating leaders to make critical changes across IT and the business, one of the most significant being the adoption of DevOps. For enterprise IT organizations hoping to drive the technology strategy across the business and provide customers with higher-quality software, faster, DevOps—with its focus on collaboration across IT domains from development to delivery—is increasingly the answer.

Now more than ever, enterprise IT leaders realize adopting the best practices that embrace collaboration among the teams that create, test and manage applications will improve their software quality and enrich the customer experience. Putting a DevOps culture in place—and then leveraging and investing in the tools needed to support it—will enable businesses to better compete in today's app-driven, cloud-connected, mobile-everything world.

The proof is in the data. According to the results of the most recent CA Technologies study on the application economy and the role of DevOps, 88% of 1,425 IT and line of business (LOB) executives already have or plan to adopt DevOps sometime within the next five years. The global study, commissioned by CA and conducted by Vanson Bourne, reinforces the findings from a similar study performed last year, that showed 66% of 1,300 senior IT decision-makers already did or planned to adopt a DevOps methodology.



The increase in just one year can be attributed to both the greater demands on IT to deliver and the tangible benefits those experienced with DevOps are already seeing—measurable results showing from 15% to 21% improvements. On the demand front, executives in this study report they need to:

- Improve the quality and performance of applications;
- Enhance the end customer experience; and
- Simultaneously deploy software across different platforms.

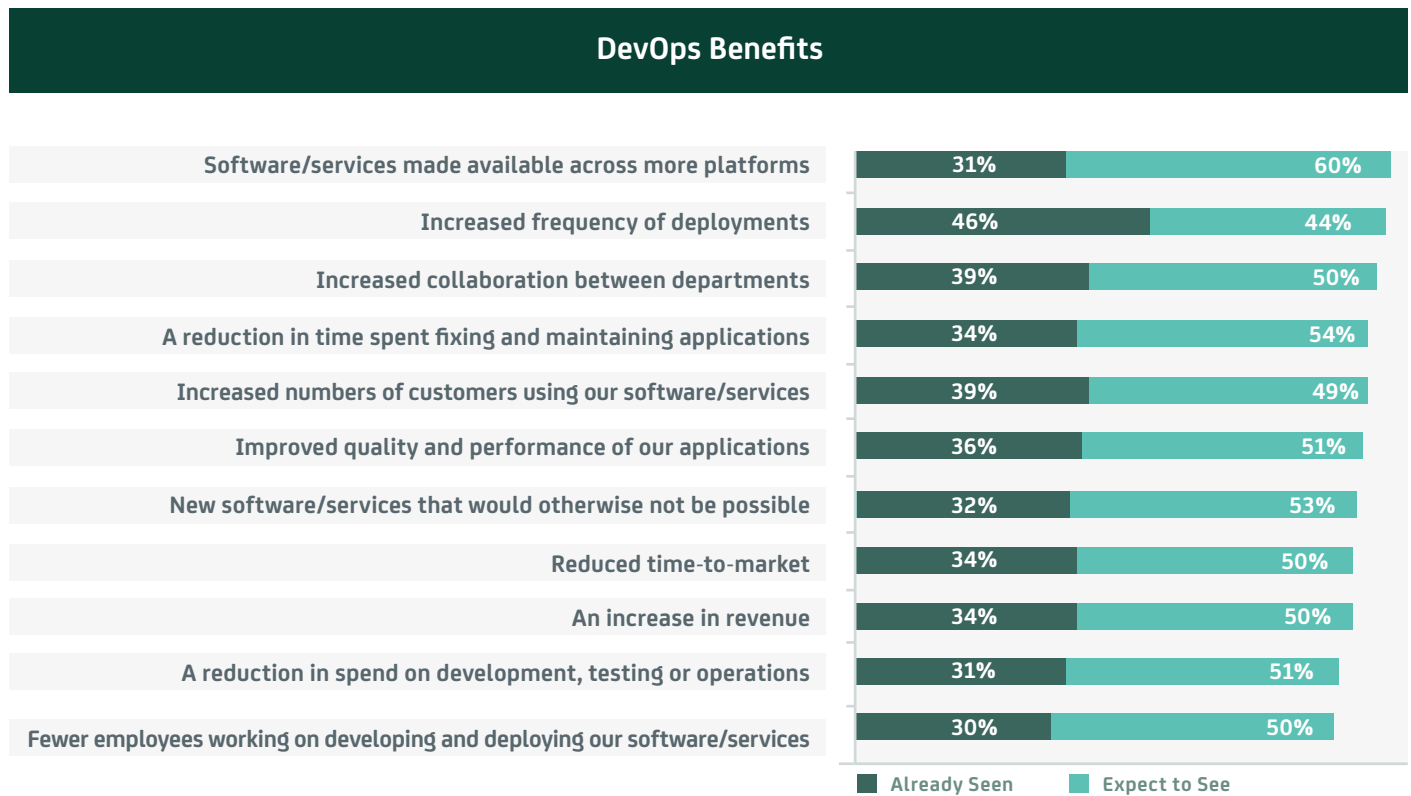
At the same time, the research makes it clear that to achieve these positive results and better address these ever-increasing needs, enterprise IT and business executives will have their DevOps work to do. Investments in people, process and technology will only succeed in a culture finely tuned to DevOps.

This research report, second in a series of five exploring the impact of the application economy, will detail today's DevOps environment, the benefits it can provide, the challenges that could arise during adoption and the investment required to make DevOps a success. Let's dig in.

## DevOps Delivers Tangible Results

DevOps delivers many improvements, depending on where an organization is in its implementation. And this year’s study doesn’t disappoint with respondents expecting considerable benefits in the long term and already reporting quantifiable results.

For instance, 46% of IT decision makers surveyed said they are already experiencing an increased frequency of deployments of their software and services, with another 44% expecting the same results. Some 39% are seeing an increased number of end user/customers using their software and services, and 39% said they are currently seeing increased collaboration between departments. More than one-third said they have seen the quality and performance of their software improve (36%) and 34% reported they were able to reduce the time spent fixing and maintaining applications (see Figure 1).



**Figure 1.** What benefits have you seen or do you anticipate seeing from implementing DevOps in your organization? Total: 1,256 respondents who already have or plan to implement DevOps

Participants in this survey showed they are experiencing the benefits DevOps delivers and seeing significant improvements across key business and technology areas. The results indicate that as DevOps matures in the industry, implementations will mature and deliver upon metrics that continue to be important to both the IT organization and its business counterparts.

For instance, the top three measured benefits—each showing 21% improvements—range from technology to business to both: new software/services that would otherwise not be possible/explored; a reduction in time spent fixing and maintaining applications; and increased collaboration between departments. The results indicate improvements in application performance, employee productivity and software acceptance by end users and customers. And then there are those metrics that reveal how DevOps can impact the bottom line: respondents reported a 19% increase in revenue (see Figure 2).

Benefit/Metric	Improvement
New software/services that would otherwise not be possible	21%
A reduction in time spent fixing and maintaining applications	21%
Increased collaboration between departments	21%
An increase in revenue	19%
Improved quality and performance of our deployed applications	19%
A reduction in spend on development, testing or operations	19%
Our software/services made available across more platforms	18%
Reduced time-to-market for our software/services	18%
Increased numbers of customers using our software/services	18%
Fewer employees working on developing and deploying our software	18%
Increased frequency of deployments of our software/services	15%

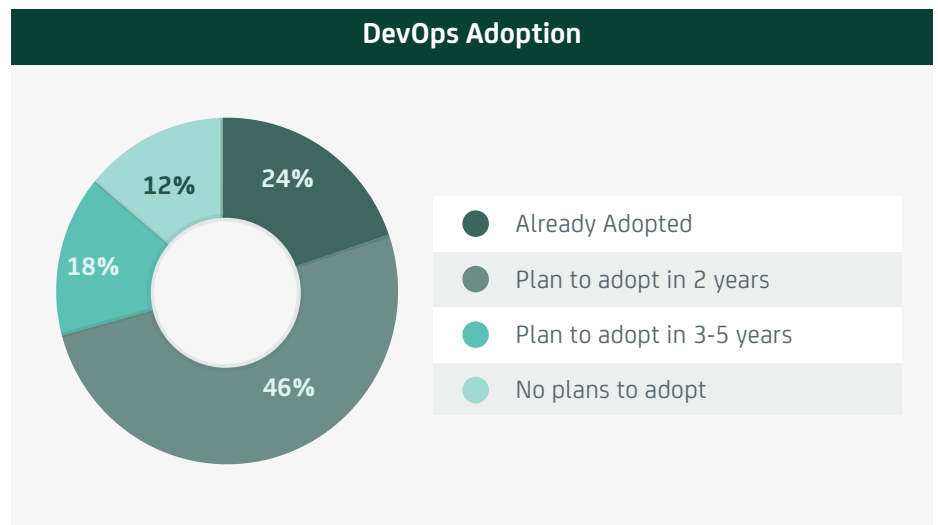
**Figure 2.**

Respondents report seeing double-digit improvements in key technology and business areas. Total varies by benefit.

# DevOps Adoption Soars

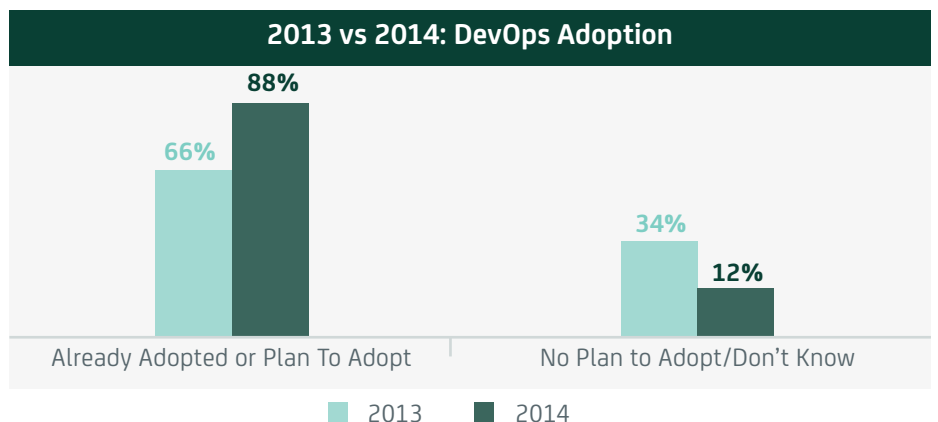
DevOps, which is a shortened term to describe collaboration between development and IT operations teams but entails much more, matured a lot in the past year. At least, people’s perceptions of it did. When CA asked Vanson Bourne to survey IT decision makers about DevOps last year, the results showed some confusion around the term. While many in the survey reported they were doing many of the tenets defined under DevOps, they weren’t necessarily calling it DevOps.

Today 88% of those surveyed indicated they had already adopted or planned to adopt DevOps within five years (see Figure 3).



**Figure 3.** How quickly do you think your organization will adopt DevOps? Total: 1,425

The findings show in the past year a significant increase in DevOps adoption, over last year’s results, which indicates IT and LOB leaders have become more informed on aspects of DevOps and the potential benefits of bringing the approach in house (see Figure 4).



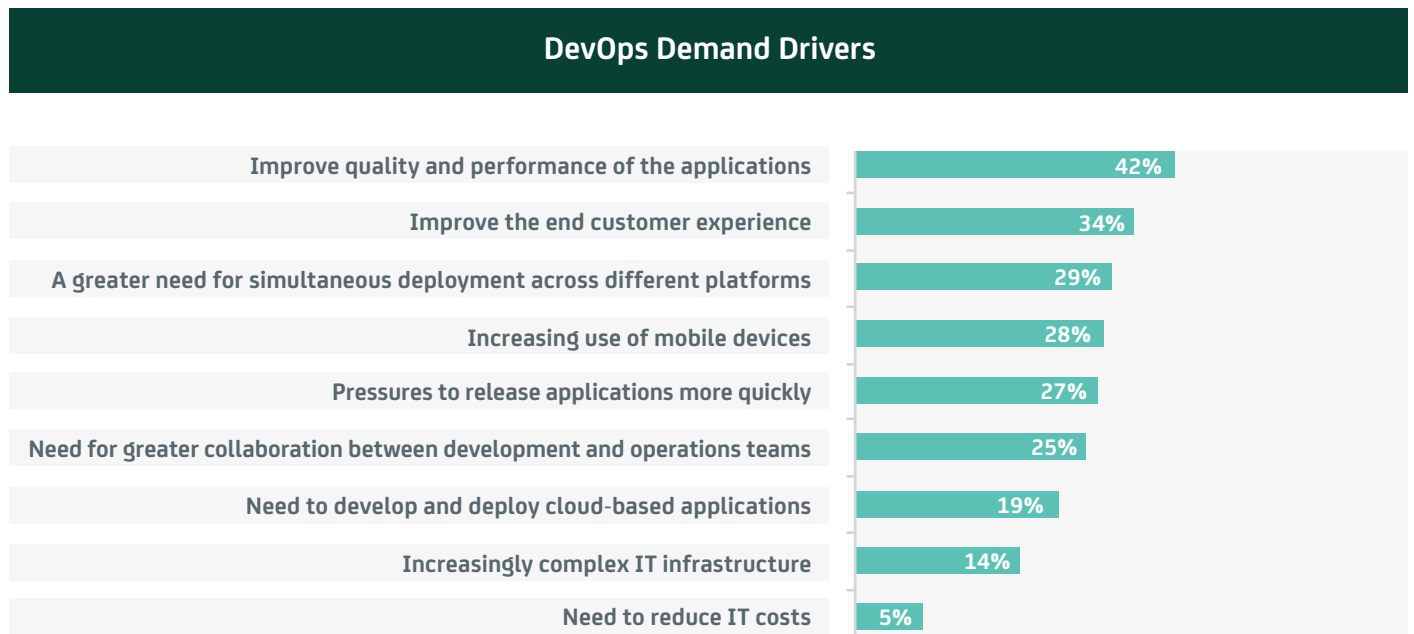
**Figure 4.** Year-over-year data shows an increase in DevOps awareness and adoption.

## What's Driving DevOps

Early wins, success stories from peers and industry education could be contributing to the demand for DevOps across enterprise IT organizations. But more likely, businesses are feeling the increased pressure by competing in the application economy. Today's business environment puts much more extreme demands on the technology organization to innovate and deliver applications—without errors—and services more frequently and faster than ever before.

The related study also conducted by Vanson Bourne, *How to Survive and Thrive in the Application Economy*, showed that of 711 LOB respondents, 94% are feeling an increased pressure to release more applications faster, which would definitely drive interest and investment in DevOps.

This DevOps study reveals that there are many reasons DevOps now makes even more sense for businesses. For one, software quality must improve in the application economy, according to 42% of respondents. Application performance was cited as the top driver for DevOps, as companies realize that they risk losing customers if their applications' user interface isn't intuitive or the app responds slowly. The second driver directly reinforces a laser focus on customer experience among 34% of those surveyed this year (see Figure 5).



**Figure 5.**

What is driving the need for DevOps? Total: 1,425

These drivers tie directly to mobility and customers' always-connected, app-driven realities. It is interesting to note that the top driver for DevOps adoption among survey respondents in 2013 was cited to be a need for greater collaboration between development and operations teams. While that still lands in respondents' top 10, demand for more software releases, faster and the need to support multiple mobile devices are putting more pressure on IT and business than in the past.

Research has shown that those embarking on an enterprise mobility strategy see more success if they are also adopting DevOps. Businesses and the IT organizations driving their technology strategy need to transform to deliver applications the way customers want them—which in many cases involves mobile technology. DevOps can help.

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## Potential Pitfalls for DevOps

With any worthwhile undertaking, there are going to be challenges. It isn't any different with DevOps. In fact, DevOps is an approach that delivers more results with more investment.

For respondents in this survey, common IT concerns such as security and compliance (28%) also resonate as issues with DevOps adopters. IT leaders indicated they worry about finding the best way to measure and communicate the DevOps return on investment (27%). The latter finding first appeared in this year's study, perhaps indicating that despite DevOps gaining in popularity among early adopters, there is still a lack of appropriate measurement metrics in place to communicate an implementation's success (see Figure 6).



## DevOps Obstacles



**Figure 6.**

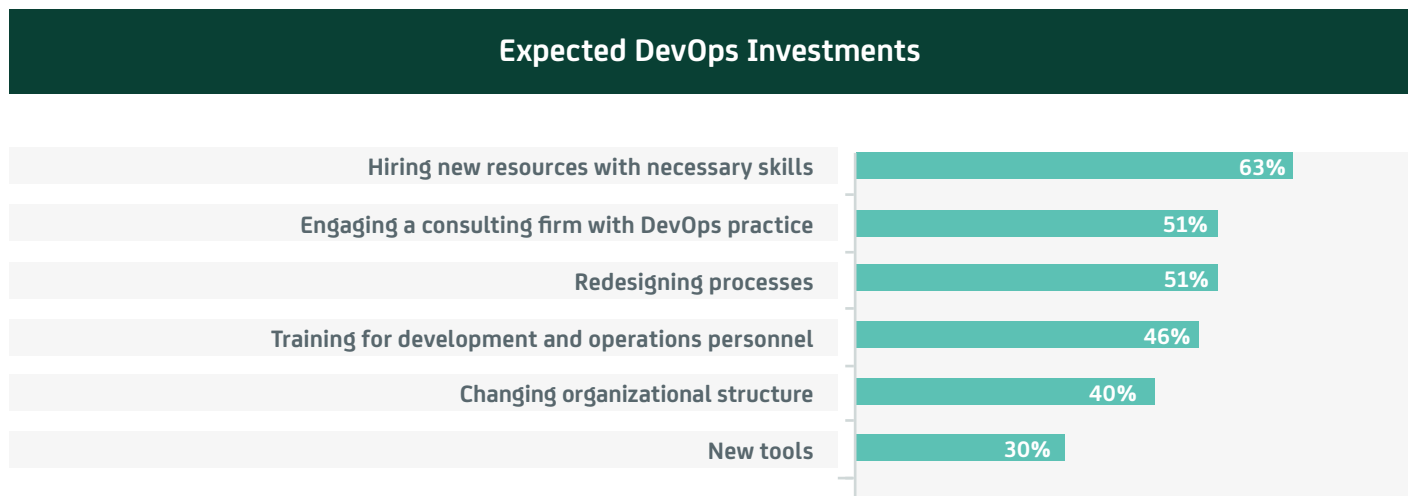
What are the major obstacles to implementing a DevOps strategy in your organization? Total: 1,425

Several other obstacles listed by respondents hint at an issue many companies face in the application economy: skills gaps. To start, respondents indicated a new concern in this survey: Identifying the right DevOps consulting firm. If IT and LOB executives lack the in-house expertise to embark on a DevOps deployment, they would be working to locate an external source of such expertise. Not only are 26% of survey respondents looking for consulting input with DevOps, but 16% said they are also re-examining their in-house skills.

If the right combination of development talent, IT operations know-how and business acumen can't be sourced within current personnel, leaders must consider if they will re-train existing staff or seek to add headcount for DevOps.

## DevOps Investment Areas

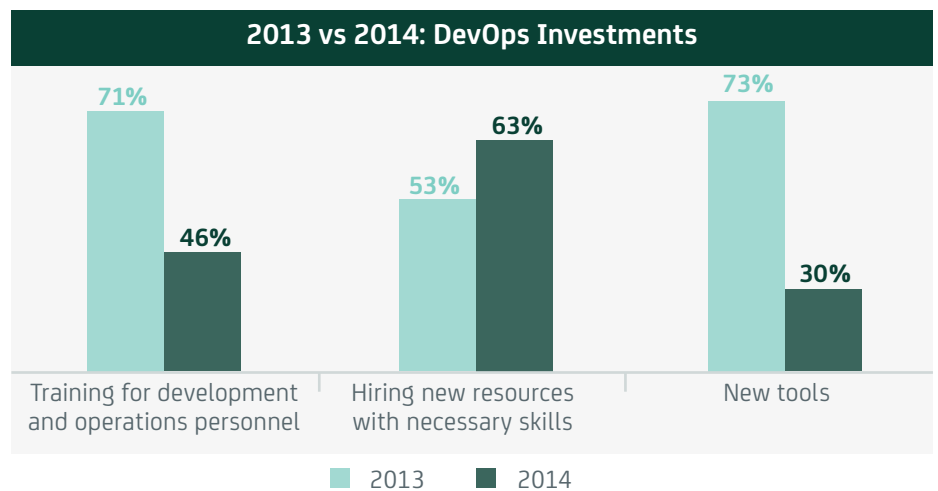
IT and LOB executives with existing or planned DevOps deployments understand the need to protect and fuel their investment. And the money won't be spent primarily on software. One way respondents are to overcome obstacles such as lack of in-house skills and DevOps expertise is by spending money on training and new hires. When asked how they expected to invest in DevOps in 2014, nearly two-thirds (63%) of survey respondents said they would be hiring new resources with necessary skills. And just more than half (51%) indicated they would engage a consulting firm with a DevOps practice (see Figure 7).



**Figure 7.**

Which of the following is your organization likely to invest in over the next year as part of your implementation of a DevOps methodology? Total = 499 ITDMs who have already or plan to implement DevOps in the next two years

Respondents in the 2013 study also indicated a need to invest in training and personnel development, but the results in 2014 show investment favoring skills over new tools, with the exception of a few critical areas. This uptick in efforts to hire new resources with the necessary skills coexists with IT decision makers' plans to invest less in training for existing development and operations staff (see Figure 8). The move toward more headcount is positive for both companies and potential candidates.



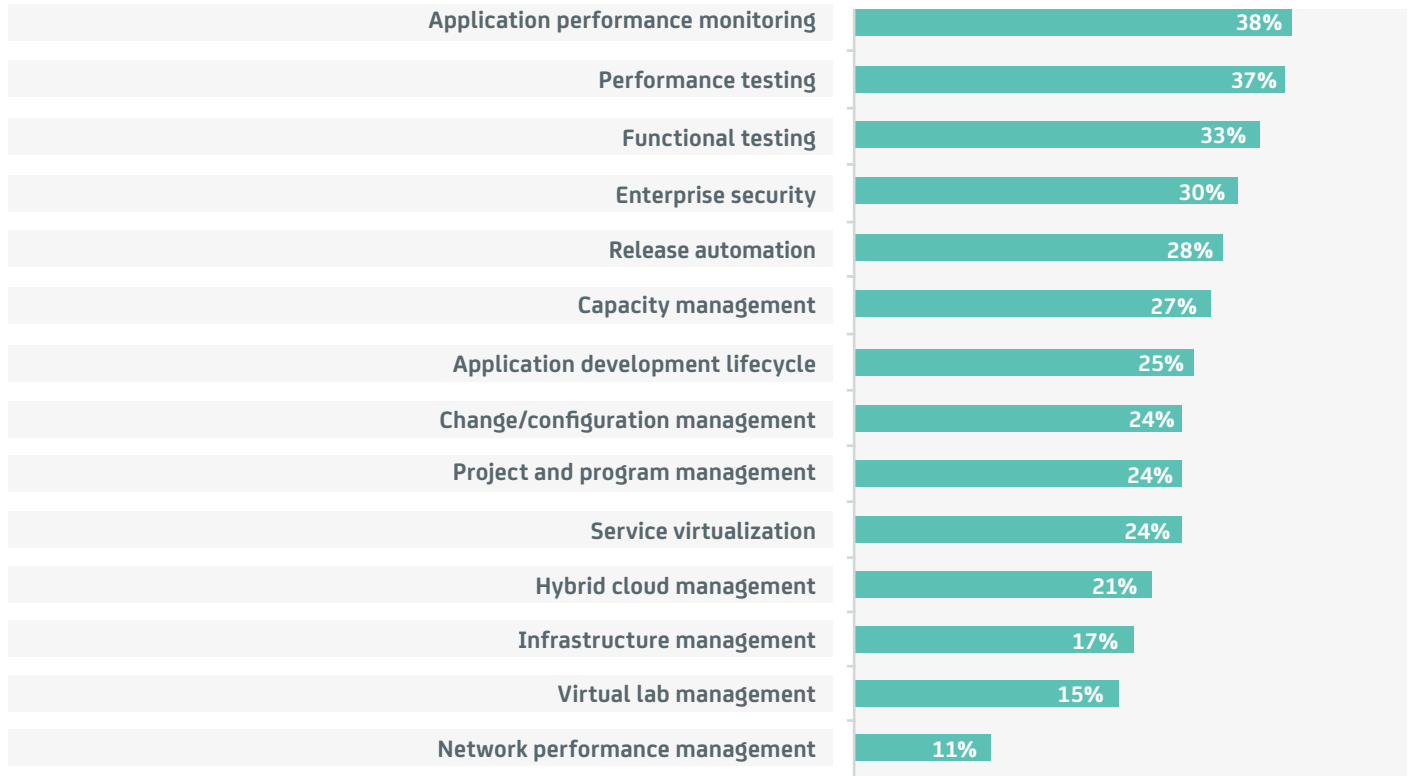
**Figure 8.**

IT investment shifts year-over-year with respondents focusing more on new hires to facilitate their DevOps strategy.

IT and LOB leaders show there is not only great interest in acquiring talent, but also a need to invest in select tools to fuel their DevOps efforts. Not surprising, application performance monitoring tools topped the list with 38% of those surveyed identifying the technology as one of the most critical DevOps tools (see Figure 9). Application performance monitoring products can indicate when an app not only fails, but also degrades, delivering a less-than-optimal customer experience. Such insight would be invaluable to teams working to release multiple apps at an increased frequency.

The focus on testing in the results also indicates these respondents understand the importance of both functional and non-functional testing to deliver an application that works as designed, is usable and performs optimally. Despite amped-up release cycles, teams need to ensure quality software. The investment plans detailed by respondents indicate a greater and more focused grasp of what's needed to get DevOps done today.

## Most Critical DevOps Tools



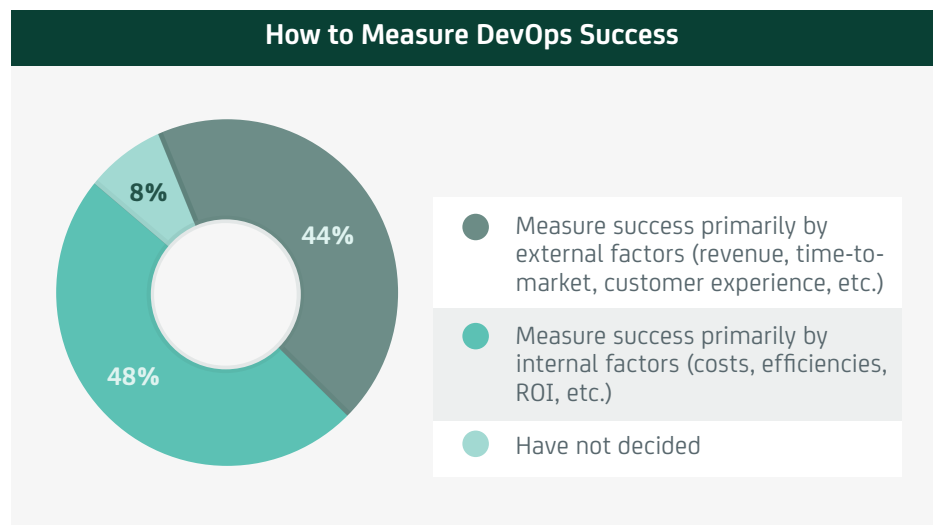
**Figure 9.**

Which tools do you consider to be the most critical for enabling DevOps? Total: 714 ITDMs

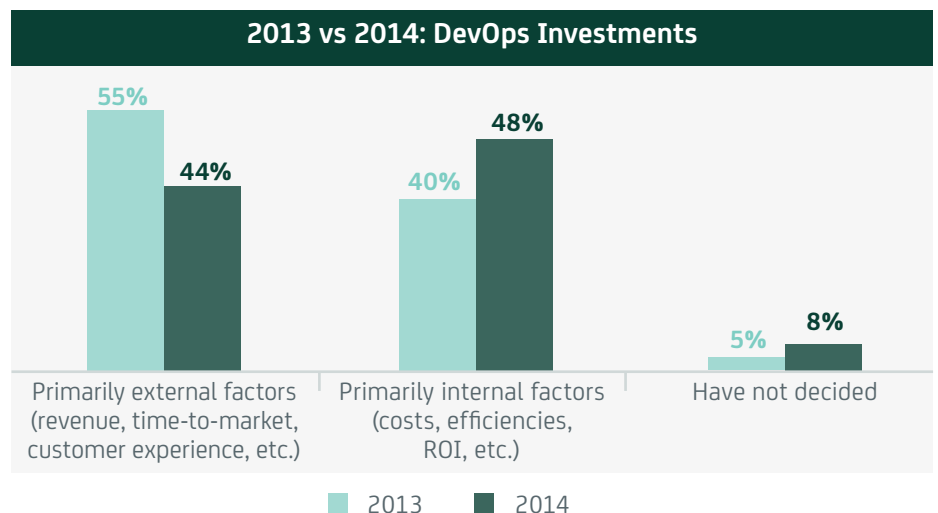
## Driving DevOps in Your Organization

This report shows conclusively that many organizations worldwide have begun to adopt, explore and identify DevOps as a key strategic initiative in today's application economy.

Businesses are using a healthy mix of external and internal indicators to measure their success with DevOps (see Figure 10). The balance between the two reveal a new maturity to DevOps implementations, and show IT and business leaders have a more proactive approach than perhaps just a year ago when companies were scrambling to see if their efforts were delivering results (see Figure 11).



**Figure 10.** How will you primarily measure DevOps success? Total: 1,256 respondents who already have or plan to implement DevOps



**Figure 11.** Survey respondents last year depended more on external factors to determine DevOps success.

## A Blueprint for DevOps Success

Whether they are feeling pressure from mobile app and device demand or looking to improve customer experience with their software, IT and LOB executives understand that DevOps is the answer. Now they are working to adjust the approach to best address their specific needs and desired outcomes. A few critical steps can help those beginning their DevOps journey find fewer problems and more answers.

**Define desired outcomes.** Different businesses will adopt DevOps to achieve different goals. Understand why the company is moving toward great collaboration and increased agility via DevOps and build a strategy.

**Communicate the common goal.** Traditionally development teams and IT operations have worked in separate departments, striving to achieve different results. DevOps demands that all teams understand the shared, common goal. For instance, application developers would work toward delivering a better customer experience with their software while IT operations would track application performance metrics to measure the same outcome.

**Identify key personnel to drive strategy.** Talent is critical to driving DevOps success across an organization. People that understand the importance of a culture shift and the process updates across domains, including the business, will be mandatory to see positive results and to communicate wins early with DevOps.

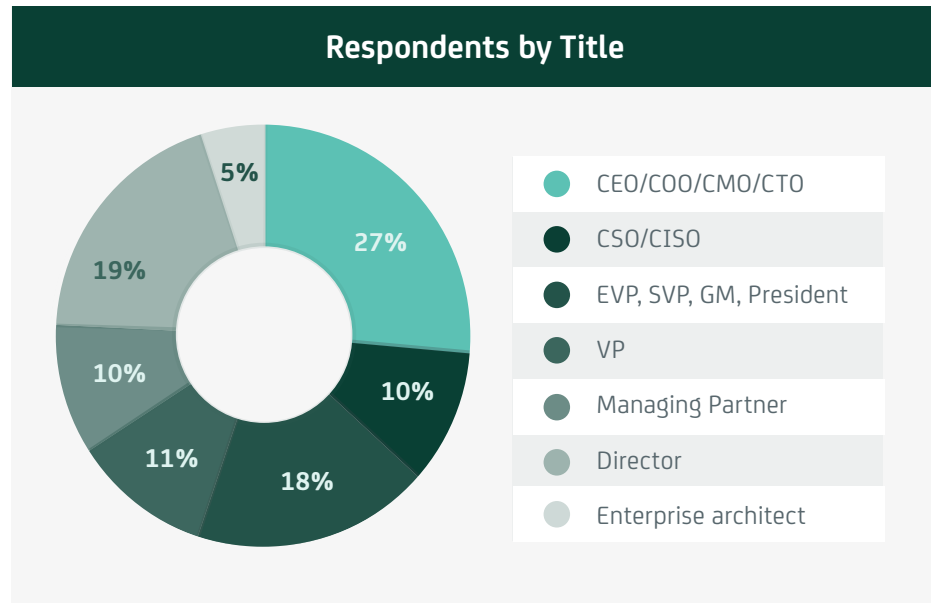
**Assess DevOps toolsets.** In addition to reviewing talent and existing processes, organizations should assess the efficacy of current toolsets—especially in context of increasing development throughput without sacrificing software, accelerating lead times and speeding deployments, and improving customer experience.

**Quantify internal and external measures for success.** Determine how DevOps success will be measured. Will it be by customer deliverables, internal cost savings or reduced software bugs? Find ways to quantify success and build on each win.

**Prepare for ongoing improvements.** DevOps doesn't have an end date. While it will be the answer to many problems within enterprises, the DevOps deployment itself will continue and grow with every business and technology initiative. DevOps will simply become the new normal for IT and the business.

## Methodology

This global study was conducted online by Vanson Bourne in July, 2014 with 1,425 senior IT and line-of-business executives at enterprise organizations with revenues of at least \$500M. Job profile of respondents:



The survey was conducted across five industry verticals of financial services, healthcare, retail, telecommunications, and media/entertainment in the following 13 countries: United States, Canada, Brazil, U.K., France, Germany, Italy, Switzerland, Spain, Australia, China, India, and Japan.

## For More Information

For further information on this research report as well as the latest news and research on the application economy, visit [ca.com/rewrite](http://ca.com/rewrite).

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## About CA Technologies

CA Technologies (NASDAQ: CA) creates software that fuels transformation for companies and enables them to seize the opportunities of the application economy. Software is at the heart of every business in every industry. From planning to development to management and security, CA is working with companies worldwide to change the way we live, transact, and communicate – across mobile, private and public cloud, distributed and mainframe environments. Learn more at [ca.com](http://ca.com).

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