Continuous Delivery: The New Normal for Software Development

Findings from Evans Research Survey of Software Development Professionals

Commissioned by Perforce Software

65%

of software developers, managers, and executives report that their organizations have started down the path to Continuous Delivery.

CONTINUOUS DELIVERY PROMISES BIG BENEFITS

Continuous Delivery is an emerging software development methodology that automates and improves software delivery. By building the capability to rapidly, reliably, and repeatedly push out enhancements and bug fixes to customers at low risk and with minimal manual overhead, software development organizations can respond to business needs faster and improve satisfaction for business stakeholders and end users alike.

Although Continuous Delivery might seem a recent trend, for several years Perforce Software has been working with leading companies—including the New York Stock Exchange and salesforce.com—to help them move to Continuous Delivery.

Perforce commissioned Evans Research Corporation to survey 600 software developers, managers, and executives in the United States and United Kingdom so that we could better understand market perception and adoption of Continuous Delivery:

- To what extent are software development organizations aware of Continuous Delivery, and how many have adopted the practice?

- What are the most important benefits of Continuous Delivery?

- What are the barriers to adoption?

TABLE OF CONTENTS

EXECUTIVE SUMMARY

Continuous Delivery is rapidly becoming the new normal for software development. Adoption rates are soaring. However, our survey data suggests that definitions of Continuous Delivery vary. Some respondents view Continuous Delivery as automation related, while others see it as related to continuity, time, or process.

Respondents perceive faster time to market and better quality of product as the most compelling reasons to adopt Continuous Delivery. And while they view technology, not people, as the biggest barrier to moving to Continuous Delivery, they believe that their organizations' corporate culture is least ready to make the move.

To accelerate the momentum around Continuous Delivery adoption, software development organizations need more education about what Continuous Delivery is and best practices for overcoming the barriers to full adoption.

More than **28%** of software developers, managers, and executives report that their organization is using **Continuous Delivery across all projects**, while **37%** report use of Continuous Delivery for some projects.

53% of respondents say that it would take their organizations less than one year to move to Continuous Delivery.

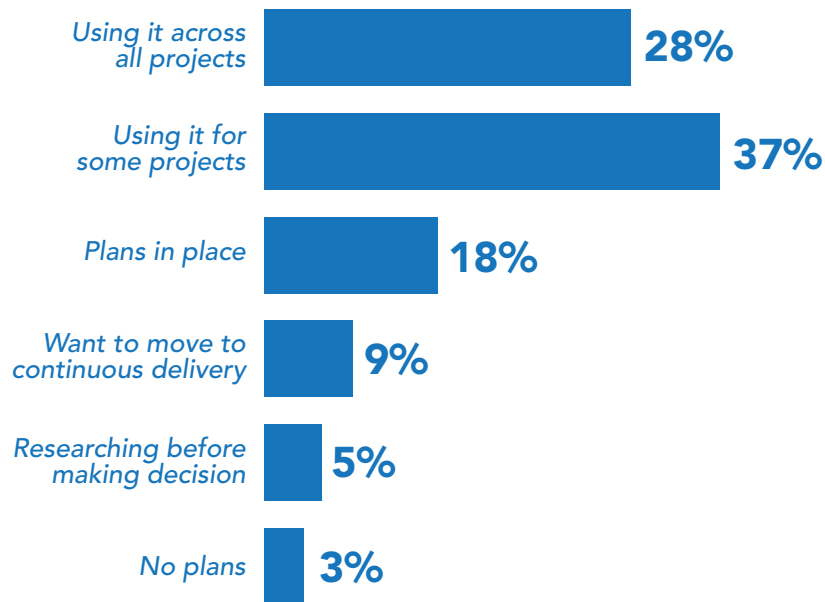**46%** think their competitors have adopted Continuous Delivery.

96% view their collaboration platform as important in achieving Continuous Delivery.

> ## "It's a process that ensures continuous tweaks, additions, and improvements to our software systems."
>
> — Response to open-ended question "What does Continuous Delivery mean to you?"

Adoption by All Company Types

|	
Using it across all projects	28%
Using it for some projects	37%
Plans in place	18%
Want to move to continuous delivery	9%
Researching before making decision	5%
No plans	3%

CONTINUOUS DELIVERY ADOPTION RATES ARE SOARING

More than 28 percent of software developers, managers, and executives report that their organization uses Continuous Delivery across all projects, while 37 percent report that their organization employs Continuous Delivery for some projects. These rates are much higher than many in the industry report on Continuous Delivery adoption, although more than half of the reported adoption in our survey is not organization-wide. Furthermore, only 3 percent of respondents say they have no plans to adopt Continuous Delivery.

Market perception and the view of many industry analysts is that only software as a service (SaaS) companies are currently practicing Continuous Delivery. Indeed, more than 80 percent of SaaS companies report adoption, with 47 percent reporting use across all projects. But the survey showed cross-industry uptake in Continuous Delivery across boxed/on-premise software, hardware/embedded components, industrial goods and services, and consumer goods and services. Among these non-SaaS companies, 18 percent of respondents report adoption across all projects and 33 percent across some projects.

Non-SaaS companies are doing Continuous Delivery as well

Includes makers of consumer goods and services, boxed/on-premise software, industrial goods, hardware/embedded components, etc.

18%   51%

● All projects   ● At least some projects
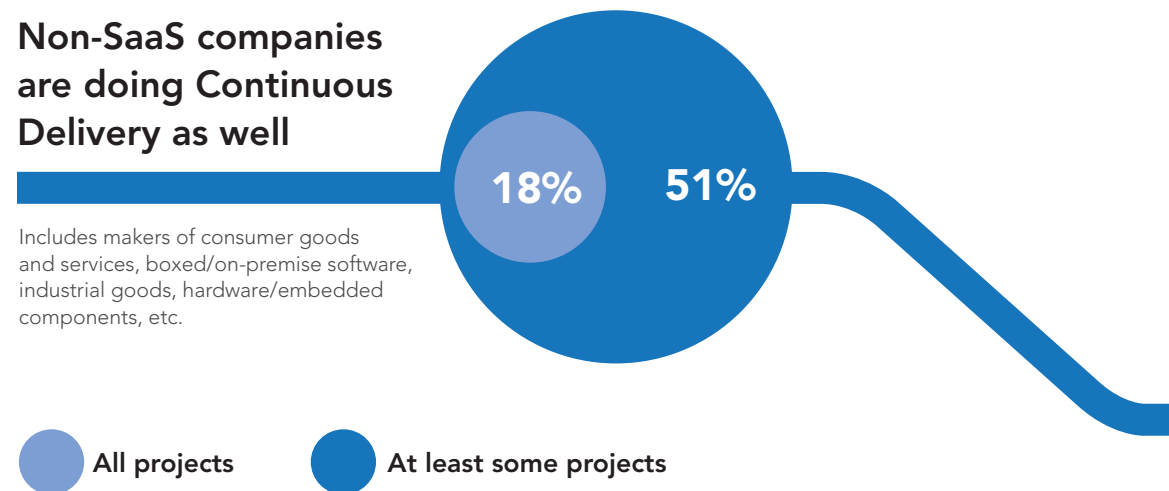
CONTINUOUS DELIVERY HAS BROAD AWARENESS

Continuous Delivery has been increasingly discussed in technology news media and forums in recent years. Not surprisingly, most respondents say they are at least somewhat aware of it and its associated methodologies: continuous development, continuous integration, and continuous release.

- In general, developers, managers, and executives with 6 to 20 years of work experience claim the most familiarity.

- Management offices use the term Continuous Delivery more frequently than developer teams do. Nearly all executives and managers are at least somewhat aware of it, compared to 84 percent of software developers.

- Continuous Delivery is more familiar to people working on distributed teams than teams in single locations (69 percent versus 60 percent are at least very familiar), even though adoption rates are similar between the two groups.

Developers   Managers   Executives

- I live and breathe it
- Somewhat familiar
- Very familiar
- Not at all

75%
50%
25%
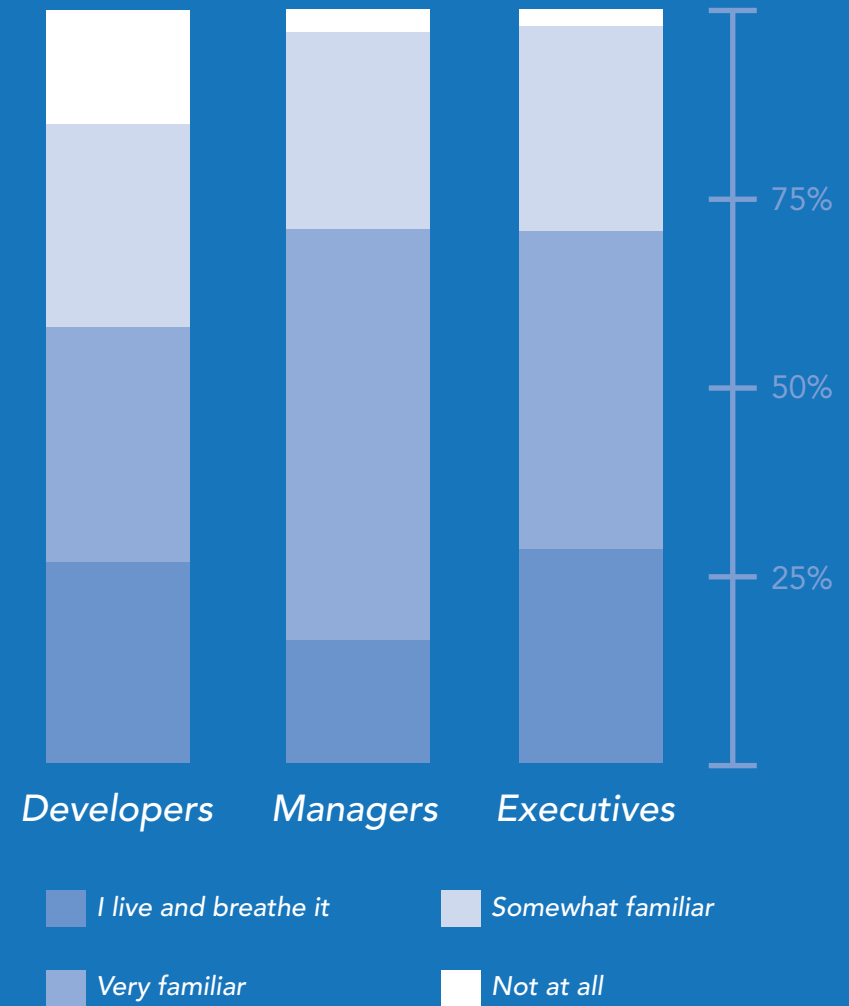
HOW SOFTWARE PROFESSIONALS VIEW CONTINUOUS DELIVERY

In the survey, we asked respondents an open-ended question about what Continuous Delivery means to them. The 400+ answers we received indicate that they have a firm grasp of the key concepts but that their exact definitions vary. The majority of the open-ended responses fall into four categories.

Continuity

The ability to continuously adapt software in line with user feedback and changes in a business, and to submit changes with minimal disruption to the customer nonstop."

Automation

It's a process to improve software performance on a continual basis, with the use of automatic triggers. This ought to cut down on manual tasking and improve our productivity, as well as lead to greater reliability."

Process

Where you build software in such a way that the software can be released to production at any time."
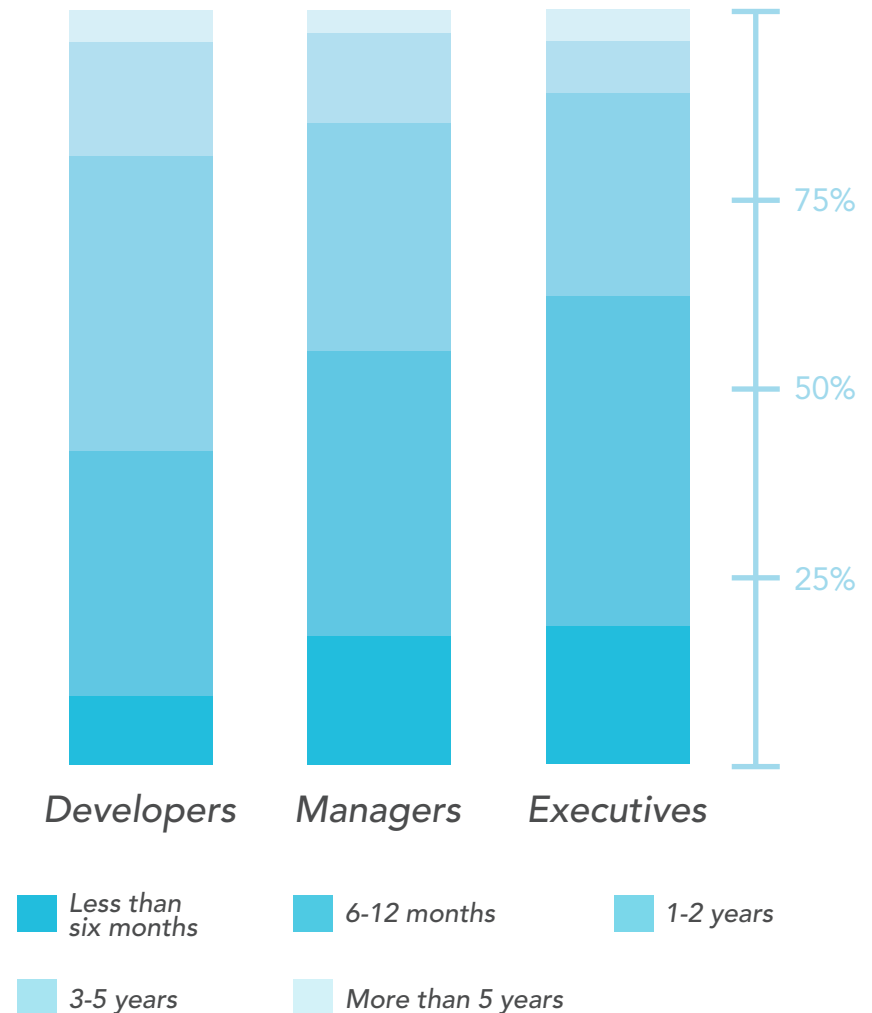
Time

Releasing early and often so that the act of learning is accelerated, risk is identified, and you can react quicker."

TIME NEEDED TO MOVE TO CONTINUOUS DELIVERY

When asked how long it would take to move from their current processes to Continuous Delivery, 53 percent of respondents say it would take their organization less than 12 months; 85 percent say it would take less than two years. These perceptions differ significantly from the views of industry analysts, who see Continuous Delivery as a substantial change from most software development organizations' current practices.
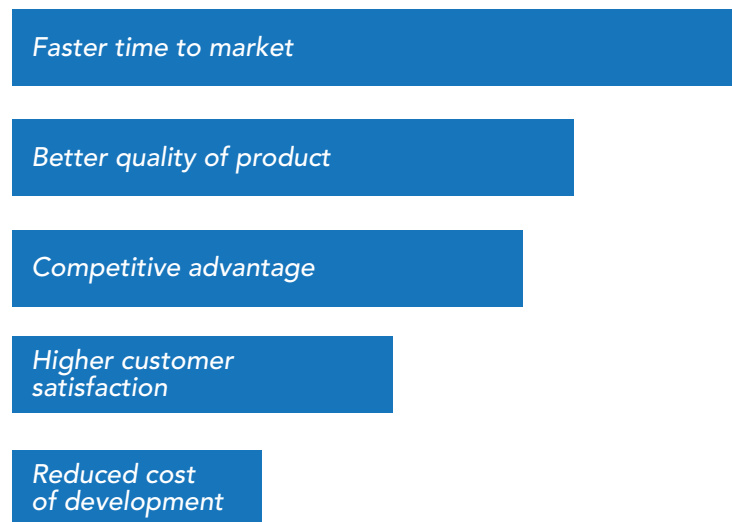
- Executives are more optimistic than developers about how quickly their organizations can change; they are more likely to think that they can move to Continuous Delivery in less than one year.

- Among the more experienced software professionals, there is a big drop in the number who share the belief that the road to Continuous Delivery is only a year long – from 65 percent of those with less than 10 years of experience to 45 percent among respondents with more than 10 years of experience.

- 75 percent of respondents who report that their organizations have already begun adopting Continuous Delivery say they can move in less than one year, compared with only 41 percent of respondents who have not yet started their adoption.

Developers   Managers   Executives

- 75%
- 50%
- 25%

Less than six months

6-12 months

1-2 years

3-5 years

More than 5 years

> *...Releasing early and often so that the act of learning is accelerated, risk is identified, and you can react quicker.*

— Response to open-ended question
"What does Continuous Delivery mean to you?"

Ranking of Benefits

| Faster time to market |
| Better quality of product |
| Competitive advantage |
| Higher customer satisfaction |
| Reduced cost of development |

Based on ranking
of top 3 benefits.

WHAT'S DRIVING THE MOVE TOWARDS CONTINUOUS DELIVERY

We asked survey participants to rank the top five benefits of Continuous Delivery. "Time to market" and "better quality product" were the two benefits that received the highest rankings, followed by competitive advantage, higher customer satisfaction, and reduced cost of development.

- People who think it will take their organizations more than three years to adopt Continuous Delivery rank faster time to market much higher than those who think it will take less than two years. Respondents who anticipate a longer adoption time view Continuous Delivery as a large undertaking with a huge payoff.

- Interestingly, almost half of respondents (46 percent) think their competitors have adopted Continuous Delivery. This perception—especially compared to the 28 percent of respondents who have fully adopted Continuous Delivery—underscores the role of competitive pressure in accelerating Continuous Delivery adoption.

THE BIGGEST BARRIERS TO ADOPTION

We also asked respondents to rank the top five barriers to the adoption of Continuous Delivery. Across the entire survey population, the top-ranked barrier was integrating automation technologies (version control, automated testing, etc.). A close-second barrier was lack of skilled people. The third-ranked barrier is lack of collaboration – or not having the right platform in place to implement Continuous Delivery.

- SaaS companies see a lack of skilled people as the biggest barrier to doing Continuous Delivery.

- Non-SaaS companies think the biggest barrier is getting automation technologies to integrate.

" Releasing high-quality software fast through build, test, and deployment automation. "

— Response to open-ended question "What does Continuous Delivery mean to you?"

Barrier Ranking

Getting automation technologies to integrate

Lack of skilled people

Lack of collaboration

*Lack of visibility across Continuous Delivery stages*
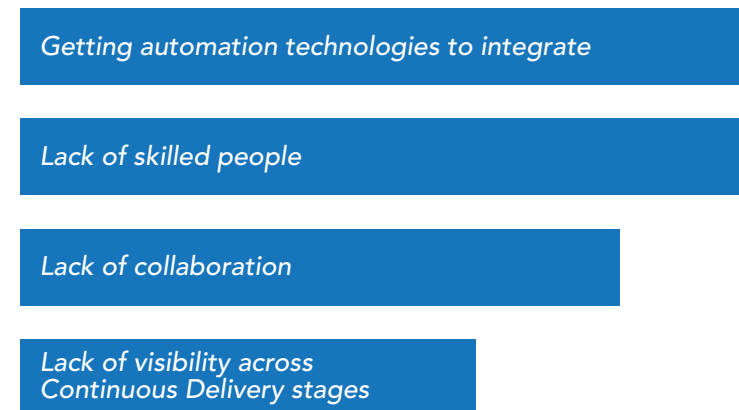
Based on ranking of top 3 barriers.

COLLABORATION PLATFORMS PLAY A CRITICAL ROLE

Nearly all respondents recognize the role of their collaboration platforms as important in achieving Continuous Delivery.

- 71 percent view it as very important or extremely important.

- Among respondents from SaaS companies, which have higher rates of adoption, 83 percent view their collaboration platform as very or extremely important.

How i mportant is your collaboration platform (version management, build automation, code review, etc.) in achieving Continuous Delivery?

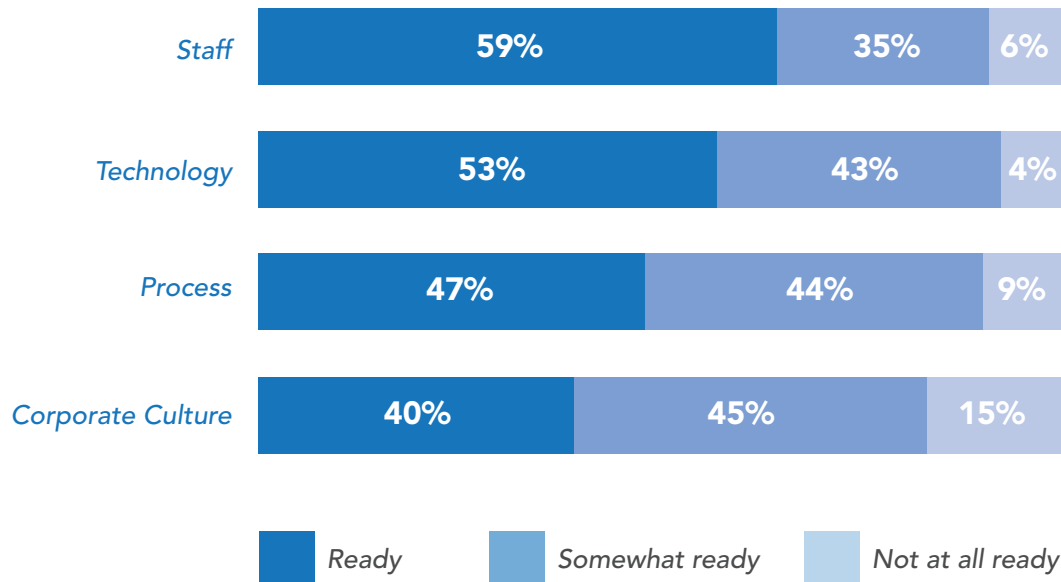|	
Extremely important	**40%**
Very important	**31%**
Somewhat important	**25%**
Not important at all	**3%**
Don't know	**1%**
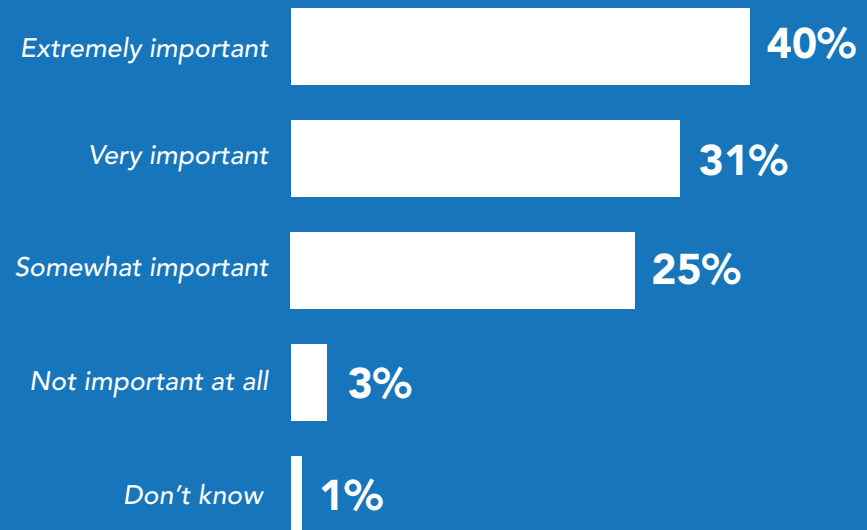
READY OR NOT?

When asked about the extent various areas of their organizations are ready for Continuous Delivery, respondents cite corporate culture as the area that's least ready for change.

- 59 percent of respondents think their staff is ready and 53 percent think their technology is ready.

- However, only 40 percent think their organization's culture is ready.

To what extent do you think your organization is ready to move to Continuous Delivery?

	Ready	Somewhat ready	Not at all ready
Staff	59%	35%	6%
Technology	53%	43%	4%
Process	47%	44%	9%
Corporate Culture	40%	45%	15%

Legend: Ready · Somewhat ready · Not at all ready

KEY TAKEAWAYS

The Perforce Continuous Delivery survey shows that organizations are making significant strides to move to Continuous Delivery, which is seen as a critical business driver across industries. With almost half of respondents believing that their competitors have adopted Continuous Delivery, adoption is regarded as a competitive necessity.

At the same time, the wide range of Continuous Delivery definitions and estimates about the time required to move to Continuous Delivery underscore the need for industry-wide education on:
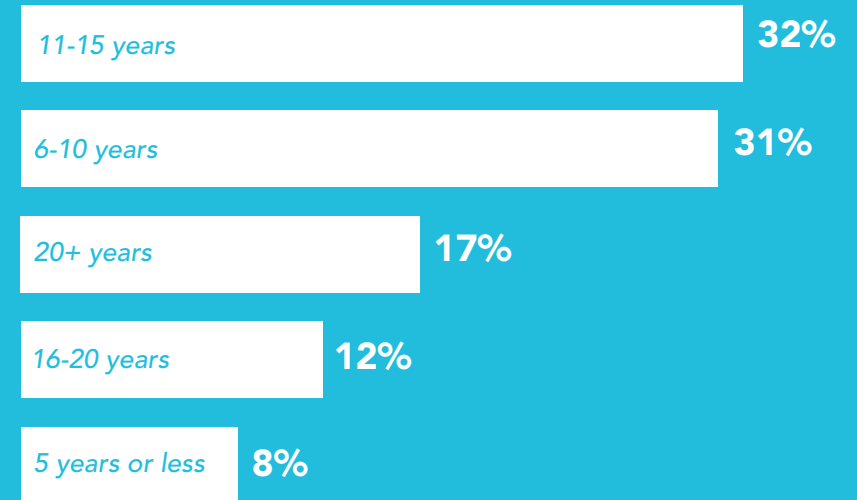
- What technology, process, and culture changes must happen to fully cross the threshold into Continuous Delivery, where software can be released at any time

- What benefits to expect

- Best practices that help organizations set realistic expectations and overcome the most common adoption barriers

The good news is that most software development professionals know that their collaboration platform is a key to their success. Investing in this technology and building competencies and processes around it will help software development organizations to transition more quickly to the new normal for software development.
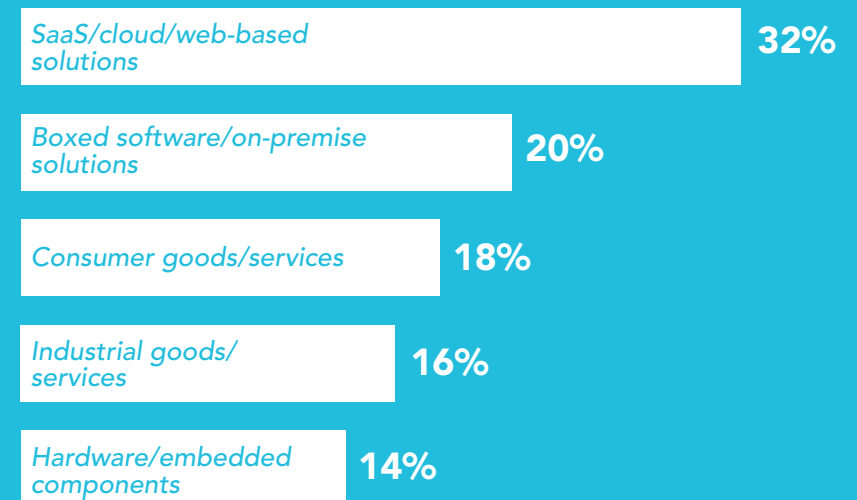
METHODOLOGY AND RESPONDENT PROFILES

Evans Data Corporation fielded the study online in the United States and the United Kingdom on behalf of Perforce in September 2013. Of the 600 respondents, 300 from each country, approximately one third were individual developers or contributors to software projects, one third were managers, and one third were executives. Their experience in software development ranged from 5 years or less to more than 20. Functional areas represented included development, QA/release, DevOps, system architects, and IT/management. All respondents were from organizations with more than 100 employees and their own development organizations and offering a variety of end products.

How many years have you worked in the software development industry?

11-15 years	32%
6-10 years	31%
20+ years	17%
16-20 years	12%
5 years or less	8%

What type of an end product does your organization offer?

SaaS/cloud/web-based solutions	32%
Boxed software/on-premise solutions	20%
Consumer goods/services	18%
Industrial goods/services	16%
Hardware/embedded components	14%

ABOUT PERFORCE

Perforce Software is trusted by industry-leading companies such as salesforce.com, SAP, and the New York Stock Exchange to manage their most valuable IP. Perforce products help teams work in concert on important digital assets, including software code, documents, multimedia, spreadsheets, and images. They are unique in their ability to handle large and distributed collections of content, enabling higher productivity, lower costs, and improved security and compliance. With the addition of its document collaboration tool, Commons, Perforce is now making it easy for everyone to take advantage of its powerful versioning capabilities. The company is headquartered in Alameda, California, with international operations in the United Kingdom, Canada, and Australia. For more information, visit www.perforce.com.

ABOUT EVANS DATA CORPORATION

Evans Data Corporation provides regularly updated IT industry market intelligence based on in-depth surveys of the global developer population. Evans's syndicated research includes surveys focused on developers in a wide variety of subjects.

15

perforce.com

PERFORCE

North America
Perforce Software Inc.
2320 Blanding Ave
Alameda, CA 94501
USA
Phone: +1 510.864.7400
info@perforce.com

Europe
Perforce Software UK Ltd.
West Forest Gate
Wellington Road
Wokingham
Berkshire RG40 2AT
UK
Phone: +44 (0) 845 345 0116
uk@perforce.com

Australia
Perforce Software Pty. Ltd.
Suite 3, Level 10
221 Miller Street
North Sydney
NSW 2060
AUSTRALIA
Phone: +61 (0)2 8912-4600
au@perforce.com