the **12**th *annual*
STATE OF
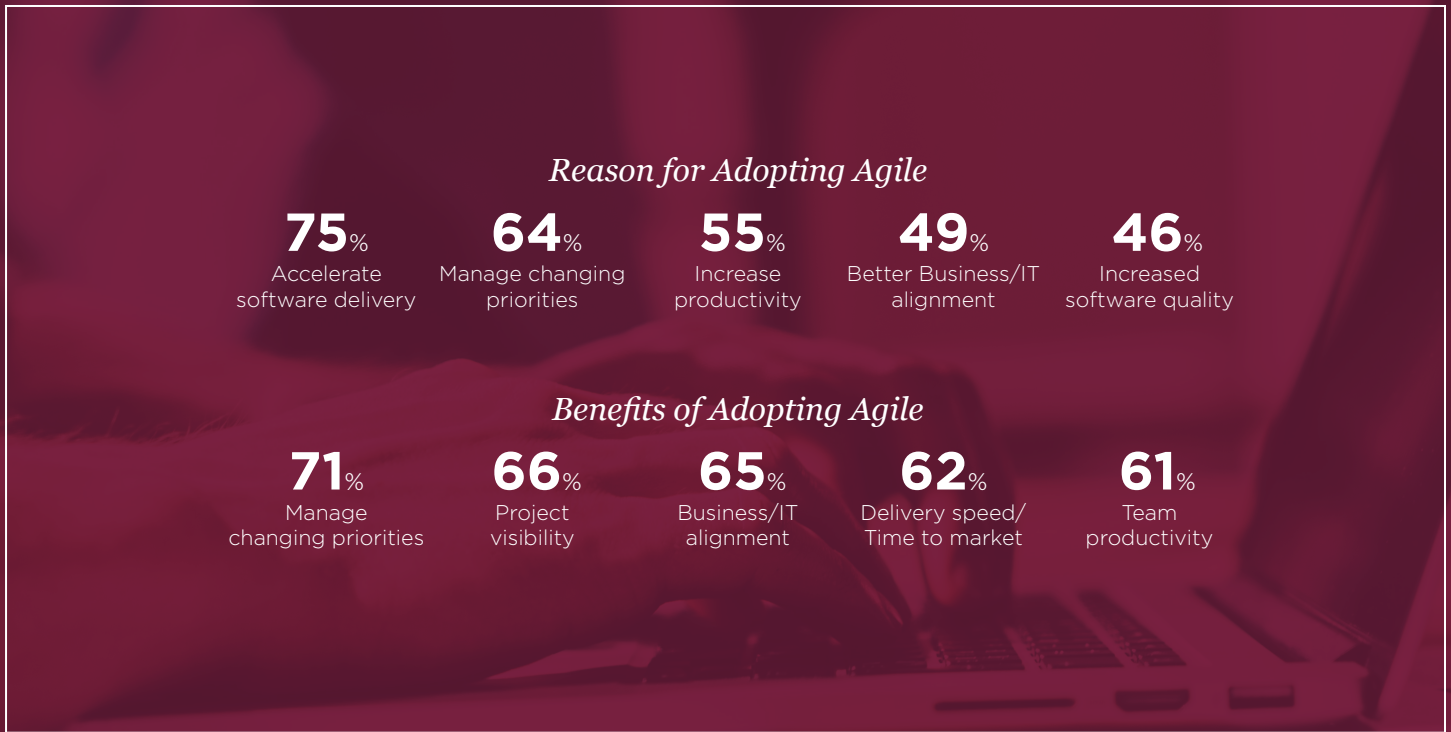**AGILE**™
REPORT

EXECUTIVE SUMMARY
BENEFITS OF AGILITY MATCHING EXPECTATIONS

The 12th State of Agile survey found that **organizations are realizing the benefits they set out to achieve by adopting agile**. Four of the top five reported reasons for adopting agile are also reported in the top five areas most-impacted as the result of adopting agile.

Survey respondents also report that their organizations are recognizing agile success at the project level. Of those with knowledge of success at that level, 61% reported that "most" or "all" of their agile projects have been successful.

In terms of organizational agile maturity, there continues to be ample room for improvement. Only 12% percent responded that their organizations have a high level of competency with agile practices across the organization, and only 4% report that agile practices are enabling greater adaptability to market conditions. The encouraging news is that 59% recognize that they are still maturing, indicating that they do not intend to plateau where they are.

The Scaled Agile Framework® (SAFe®) is reported as the most widely-used approach to scaling agile, with nearly 1/3 (29%) saying that SAFe is the method they "follow most closely". The scaling approach that saw the largest increase in reported use since last year is the Disciplined Agile Framework (DA), up from 1% in 2016 to 5% in this year's survey.

Reason for Adopting Agile

75%	**64**%	**55**%	**49**%	**46**%
Accelerate software delivery	Manage changing priorities	Increase productivity	Better Business/IT alignment	Increased software quality

Benefits of Adopting Agile

71%	**66**%	**65**%	**62**%	**61**%
Manage changing priorities	Project visibility	Business/IT alignment	Delivery speed/ Time to market	Team productivity

THE SURVEY RESULTS HIGHLIGHTED THREE THEMES:

ORGANIZATIONAL CULTURE MATTERS

This year's survey is consistent with that of recent years in that organizational culture stands out as a critical factor in the success of adopting and scaling agile. The three most significant challenges to agile adoption and scaling are reported as Organizational culture at odds with agile values (53%), General organizational resistance to change (46%), and Inadequate management support and sponsorship (42%).

Internal agile coaches (53%), consistent practices and processes across teams (43%), and the implementation of a common tool across teams (41%) are the top three factors reported to have been most helpful in scaling agile. These underscore the importance of a culture of excellence and alignment.

AGILE IS EXPANDING WITHIN THE ENTERPRISE

The survey provides indicators that agile adoption is growing within organizations, both more broadly and deeply. 25% of the respondents say that all or almost all of their teams are agile, whereas only 8% reported that in 2016. The application of agile techniques to higher-level planning also saw an increase, with more respondents practicing Product Roadmapping (46%) an Agile Portfolio Planning (35%).

CUSTOMER SATISFACTION IS OF UTMOST IMPORTANCE

One of the most notable changes from last year's survey is the importance of Customer/User Satisfaction in measuring success. While business value still ranks highly, Customer/User Satisfaction ranks as the top measure of success for agile initiatives (57%) and agile projects (46%). This change in the survey mirrors the growing emphasis on customer satisfaction in digital transformation initiatives.

LOOKING FORWARD

With the recognized necessity of accelerating the speed of delivery of high-quality software, and the emphasis on customer satisfaction, it's no surprise that 71% of the survey respondents report that a DevOps initiative is underway or planned for the next 12 months. We also expect the expansion of agility into higher-level planning to continue, as the need to manage the entire value stream, from strategic planning to customer delivery, will be critical going forward.

The need to manage the entire value stream, from strategic planning to customer delivery, and to have the proper feedback loops in place, will be critical going forward. This will require the organizational culture, skills, and tooling to allow for managing and measuring the flow of business value across the entire value stream. To achieve this, enterprises will need to truly unify their agile portfolio planning, agile project management, and continuous delivery efforts.

This will further decrease the use of spreadsheets and team-oriented point solutions as organizations seek a more enterprise-centric solution for unifying their Agile and DevOps initiatives and accelerating the delivery of business value across the entire organization.

the 12th annual STATE OF AGILE REPORT

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ABOUT THE SURVEY

The 12th annual State of Agile survey was conducted between August and December, 2017.

Sponsored by CollabNet VersionOne, the survey invited individuals from a broad range of industries in the global software development community and was promoted far beyond VersionOne's customer base at tradeshows and multiple digital channels. 1,492 responses were collected, analyzed, and prepared into a summary report by Analysis.Net Research, an independent survey consultancy. Only 22% of the respondents were VersionOne customers, indicating the range and diversity of respondents.

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RESPONDENT DEMOGRAPHICS

Similar to past years, this survey collected responses from a diverse set of organization sizes, geographic locations, roles and industries. There was an increase in the number of responses coming from ScrumMaster or Internal Agile Coaches (19% of respondents last year and 34% this year) and a decrease in responses from Project / Program Managers (23% of respondents last year and 14% this year).

Size of Organization

Respondents who worked for organizations with:

39% < 1,000 people

21% 1,001-5,000 people

16% 5,001-20,000 people

28% 20,001+ people
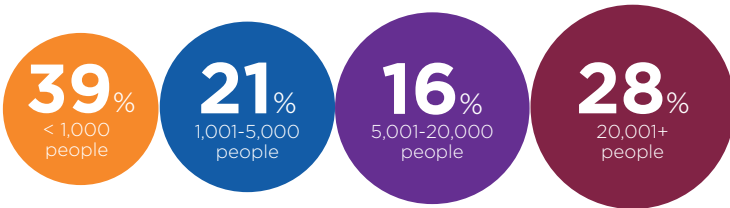
Size of Software Organization

Respondents who worked for organizations with software development organizations with:

29% < 100 people

35% 101-1,000 people

19% 1,001-5,000 people

17% 5,001+ people

Location of Organization

Respondents were from:

55% North America

27% Europe

7% Asia

7% South America

1% Africa

3% Australia or New Zealand

Role

- **34%** ScrumMaster or Internal Coach
- **14%** Project / Program Manager
- **14%** Development Leadership: VP/ Director/ Manager
- **11%** Development Team Member: Architect / Developer / QA / Tester / UI or UX Designer
- **8%** External Consultant / Trainer
- **6%** Product Manager / Product Owner
- **4%** Business Analyst
- **3%** C-Level Executive
- **1%** DevOps
- **5%** Other
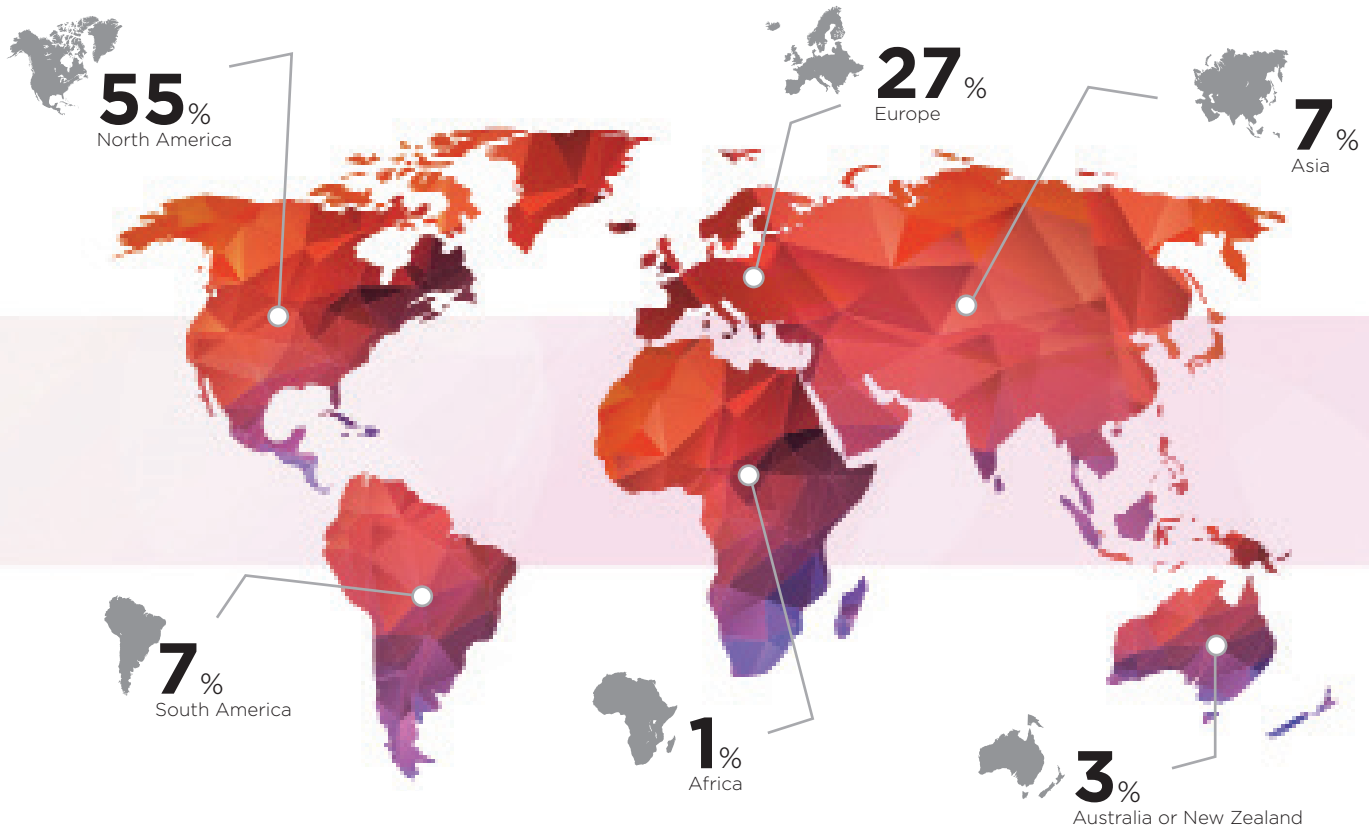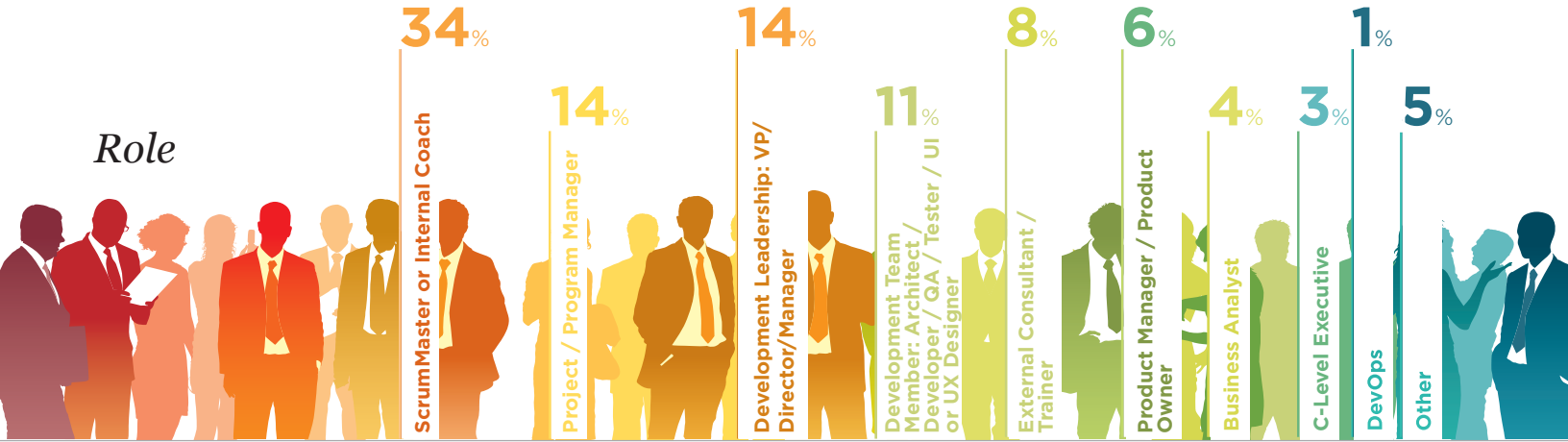
Industries

Industries respondents worked in:

Industry	%
Technology	24%
Financial Services	17%
Professional Services	9%
Insurance	7%
Government	6%
Healthcare and Pharmaceuticals	6%
Industrial/Manufacturing	4%
Telecommunications	4%
Education	3%
Energy	3%
Retail	3%
Transportation	3%
Media/Entertainment	2%
Non-profit	1%
Other	8%
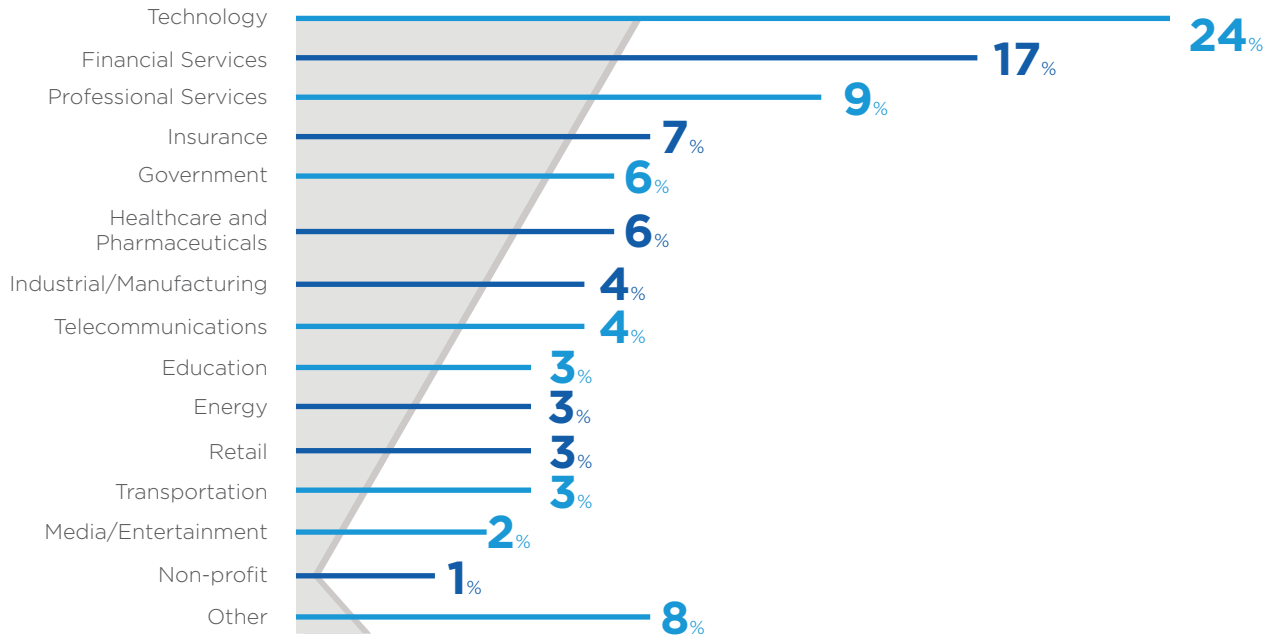
Distributed Agile Teams

79% of respondents had at least some distributed teams practicing agile.
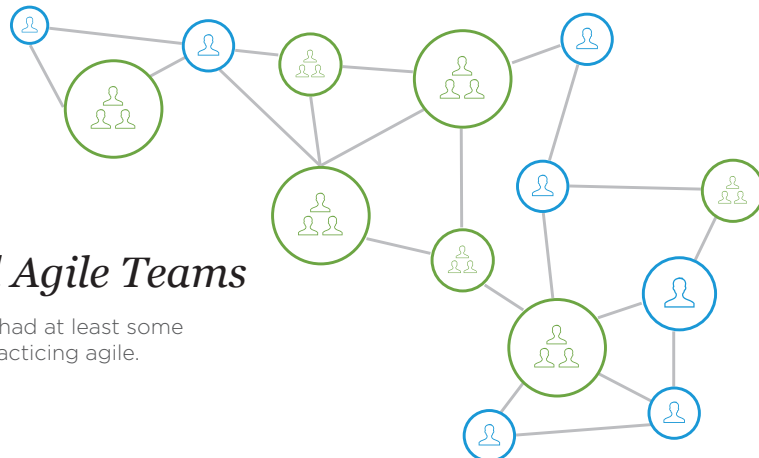
COMPANY EXPERIENCE AND ADOPTION

Company Experience

HOW MANY?

97%

The percentage of respondents' organizations that practice agile development methods:

&

HOW LONG?

The length of time respondents' organizations have been practicing agile development methods:

	2017	2016
< 1 year	**10**%	15%
1-2 years	**26**%	25%
3-5 years	**35**%	32%
5+ years	**30**%	28%

📅 2017   📅 2016
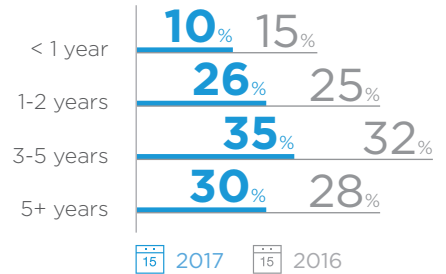
Percentage of Teams Using Agile

52% of respondents stated that more than half of teams in their organizations are using agile practices.

25% All of our teams are agile

27% More than ½ of our teams are agile

46% Less than ½ of our teams are agile

2% None of our teams are agile
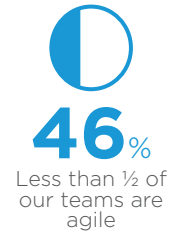
Reasons for Adopting Agile

The reasons stated for adopting agile follow a similar ranking as in the previous year though we did see the biggest change in responses in accelerate software delivery (75% compared to 69% last year), enhancing delivery predictability (46% compared to 30% last year), improving IT/Business alignment (49% compared to 42% last year), and reducing project cost (24% compared to 18% last year).

Reason	%
Accelerate software delivery	**75**%
Enhance ability to manage changing priorities	**64**%
Increase productivity	**55**%
Improve business/IT alignment	**49**%
Enhance software quality	**46**%
Enhance delivery predictability	**46**%
Improve project visibility	**42**%
Reduce project risk	**37**%
Improve team morale	**28**%
Improve engineering discipline	**25**%
Reduce project cost	**24**%
Increase software maintainability	**18**%
Better manage distributed teams	**17**%

*Respondents were able to make multiple selections.

Agile Maturity

The vast majority of respondents (84%) said their organization was at or below a "still maturing" level.

MATURITY

2% No agile initiatives

4% Considering an agile initiative

19% Experimenting with agile in pockets

59% Use agile practices but still maturing

12% High level of competency with agile practices across the organization

4% Agile practices are enabling greater adaptability to market conditions
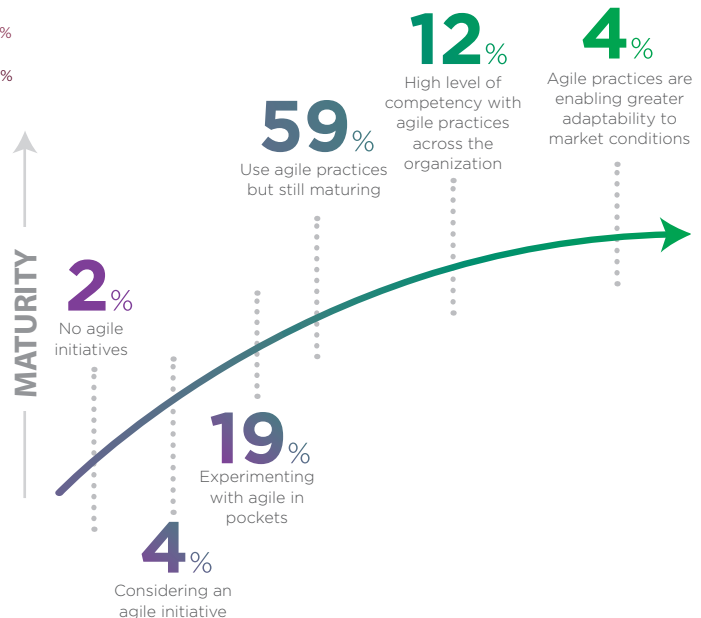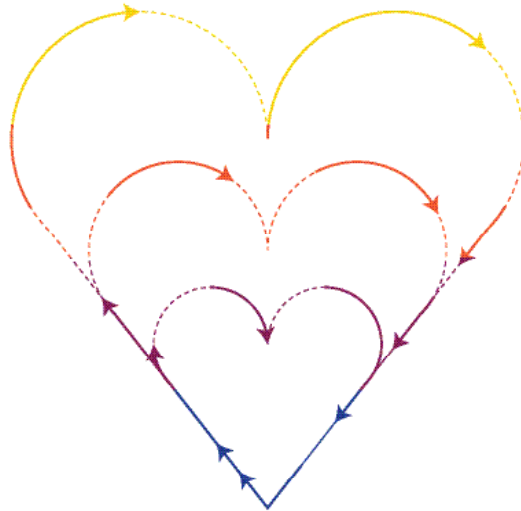
BENEFITS OF AGILE

Benefits of Adopting Agile

By implementing agile, respondents cited seeing improvements in the following areas:

Benefit	Percentage
Ability to manage changing priorities	71%
Project visibility	66%
Business/IT alignment	65%
Delivery speed/time to market	62%
Increased team productivity	61%
Team morale	61%
Project predictability	49%
Software quality	47%
Project risk reduction	47%
Engineering discipline	43%
Managing distributed teams	40%
Software maintainability	33%
Project cost reduction	22%
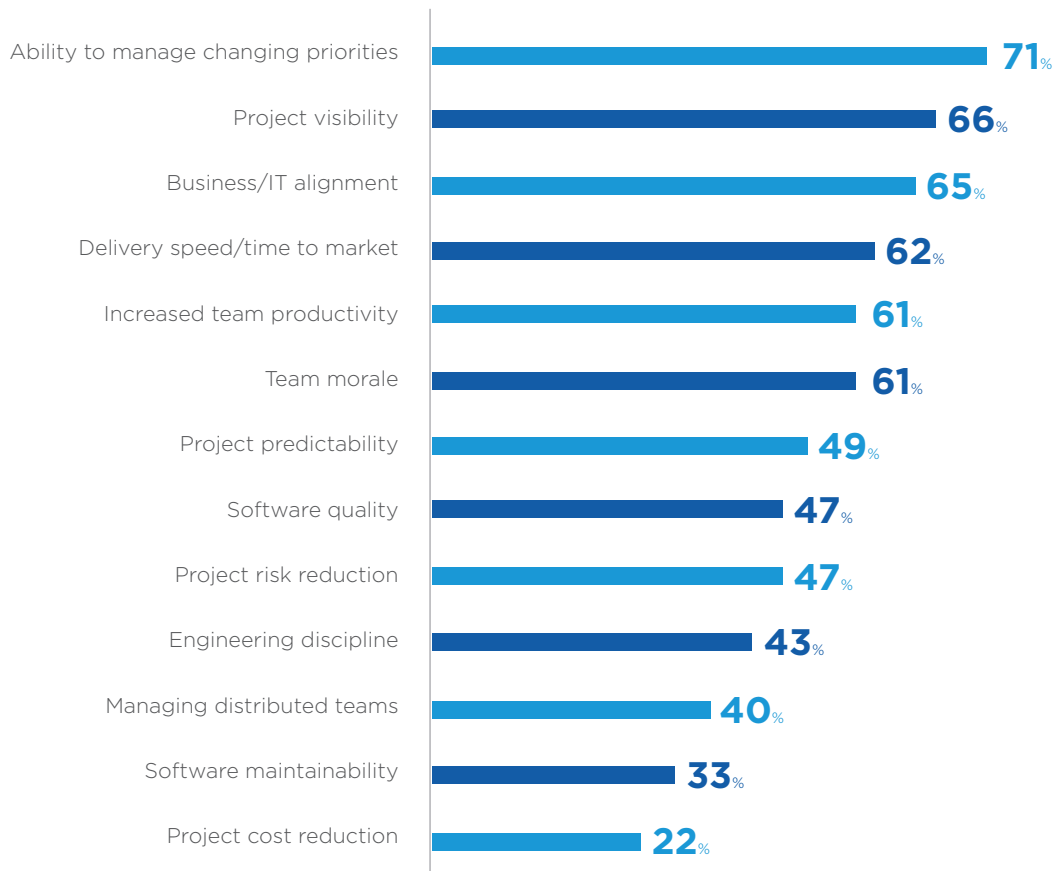
*Respondents were able to make multiple selections.

AGILE METHODS AND PRACTICES

1% Spotify model
1% Lean Startup
1% Extreme Programming (XP)
3% Iterative Development
5% Kanban
6% Other (please specify)
6% Scrum/XP hybrid
8% ScrumBan
14% Hybrid (multiple methodologies)
56% Scrum
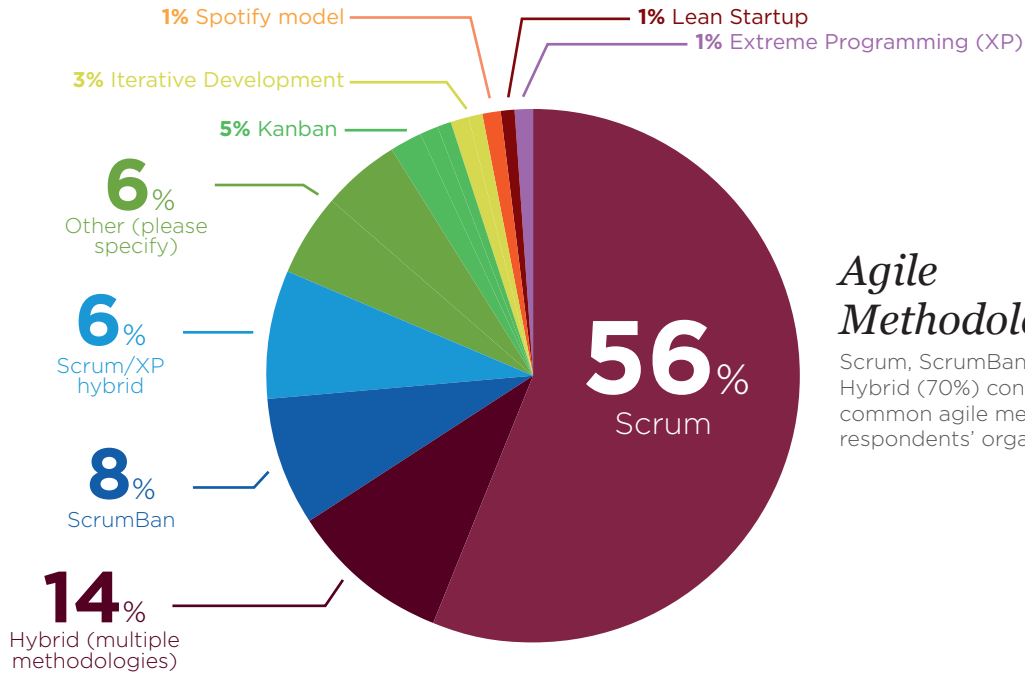
Agile Methodologies Used

Scrum, ScrumBan and Scrum/XP Hybrid (70%) continue to be the most common agile methodologies used by respondents' organizations.

Agile Techniques Employed

From 2016 to 2017, the use of Kanban grew from 50% to 65%; product roadmapping increased from 38% to 46% and portfolio planning went from 25% to 35%.

TOP 5 AGILE TECHNIQUES

90% DAILY STANDUP

88% SPRINT/ITERATION PLANNING

85% RETROSPECTIVES

80% SPRINT/ITERATION REVIEW

69% SHORT ITERATIONS

Technique	%
Daily standup	**90**%
Sprint/iteration planning	**88**%
Retrospectives	**85**%
Sprint/iteration review	**80**%
Short iterations	**69**%
Release planning	**67**%
Planning poker/team estimation	**65**%
Kanban	**65**%
Dedicated customer/Product owner	**63**%
Single team (integrated dev and test)	**52**%
Frequent releases	**51**%
Common work area	**47**%
Product roadmapping	**46**%
Story mapping	**44**%
Agile portfolio planning	**35**%
Agile/Lean UX	**30**%
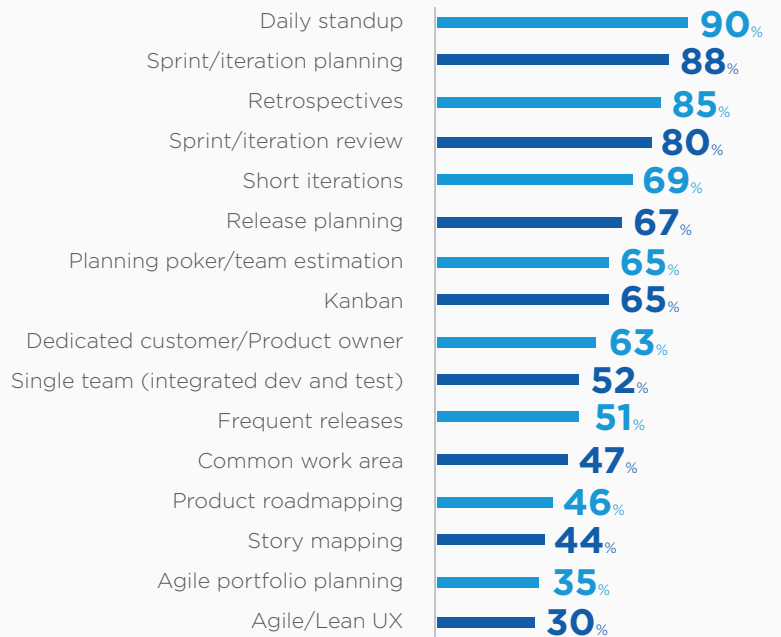
*Respondents were able to make multiple selections.

Engineering Practices Employed

This year's survey demonstrated an increased use of coding standards (64% compared to 56% last year) and the use of continuous integration and refactoring were cited less as practices used.

Practice	%
Unit testing	75%
Coding standards	64%
Continuous integration	54%
Refactoring	45%
Continuous deployment	37%
Pair programming	36%
Test-driven development (TDD)	35%
Automated acceptance testing	32%
Collective code ownership	31%
Sustainable pace	25%
Behavior-driven development (BDD)	17%
Emergent design	16%
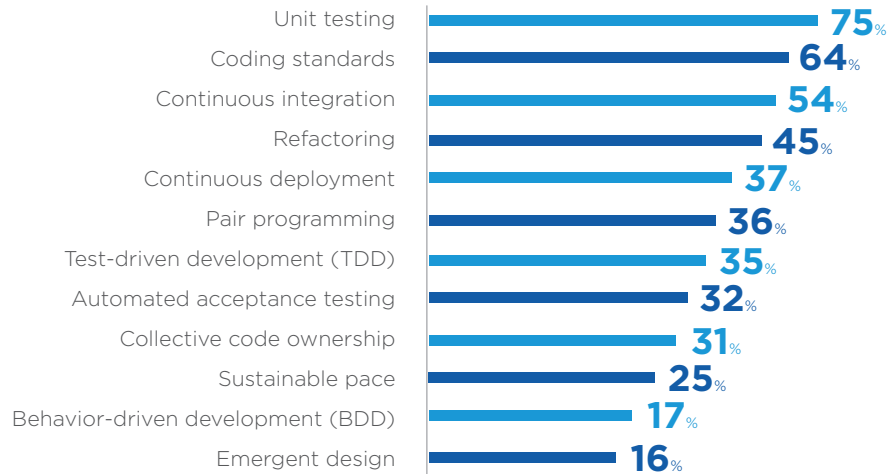
*Respondents were able to make multiple selections.
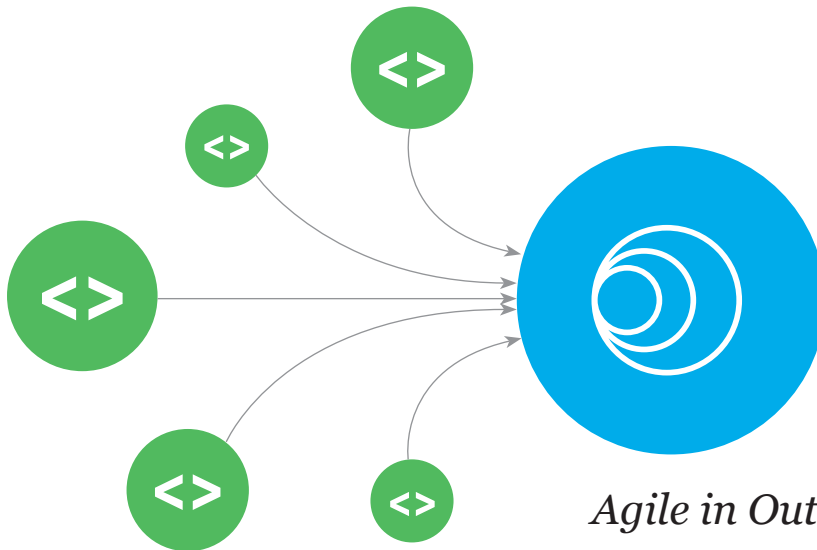
Agile in Outsourced Dev Projects

45% of respondents are using agile practices to manage outsourced development projects. 40% of respondents indicated they plan to increase the use of agile in outsourced development projects in the next 24 months.

AGILE SUCCESS AND METRICS

How Success Is Measured...
with Agile Initiatives?

Business value, on-time delivery of projects and customer/user satisfaction have remained the top three measures of agile initiative's success as they have in the past few years with customer/user satisfaction moving into the top spot increasing from 44% last year to 57% this year. Product scope saw a decline from 40% to 20% from 2016 to 2017.

Measure	%
Customer/user satisfaction	57%
On-time delivery	55%
Business value	53%
Quality	47%
Productivity	31%
Predictability	29%
Project visibility	26%
Process improvement	25%
Product scope	20%
Don't know	11%

*Respondents were able to make multiple selections.

Success of Agile Projects

98%

of respondents said that they had success with agile projects in their organization. 74% indicated more than half of their agile projects had been successful.
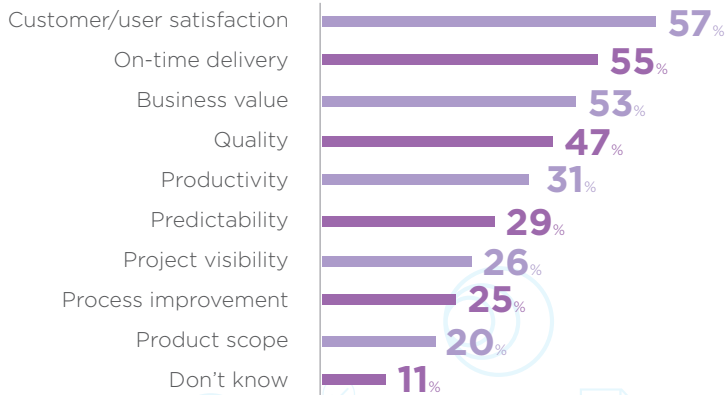
How Success Is Measured...
with Agile Projects

Business value increased as a cited measure of agile project success from 23% in 2016 to 43% in 2017. Customer/user satisfaction increased from 28% in 2016 to 46% in 2017 while velocity had been the number one measure of an agile project's success decreased from 67% in 2016 to 42% in 2017. Iteration burndown also went down from 2016 (51%) to 2017 (27%).

Measure	%
Customer/user satisfaction	46%
Business value delivered	43%
Velocity	42%
Budget vs. actual cost	31%
Planned vs. actual stories per iteration	30%
Planned vs. actual release dates	29%
Defects in to production	28%
Iteration burndown	27%
Cycle time	24%
Burn-up chart	24%
Release burndown	22%
Defects over time	21%

Measure	%
Defect resolution	16%
WIP (Work-in-process)	16%
Customer retention	14%
Estimation accuracy	13%
Test pass/fail over time	13%
Revenue/sales impact	12%
Cumulative flow chart	11%
Product utilization	10%
Scope change in a release	9%
Individual hours per iteration/week	8%
Earned value	8%

*Respondents were able to make multiple selections.

SCALING AGILE

Scaling Methods and Approaches

The Scaled Agile Framework continues to be the most popular scaling method cited by respondents.

29% SCALED AGILE FRAMEWORK® (SAFE®)

19% SCRUM OF SCRUMS

10% INTERNALLY CREATED METHODS

5% DISCIPLINED AGILE DELIVERY (DAD)

5% LARGE SCALE SCRUM (LESS)

3% ENTERPRISE SCRUM

3% LEAN MANAGEMENT

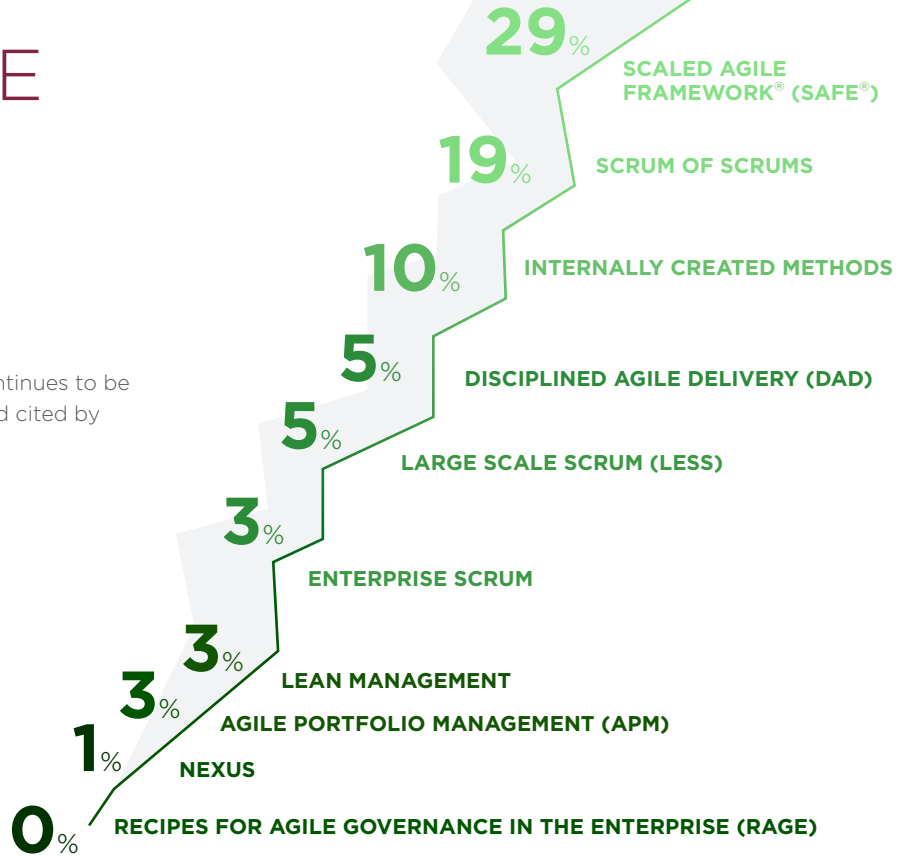**3%** AGILE PORTFOLIO MANAGEMENT (APM)

1% NEXUS

0% RECIPES FOR AGILE GOVERNANCE IN THE ENTERPRISE (RAGE)

Top 5 Tips for Success with Scaling Agile

Respondent indicated the most valuable in helping them scale agile practices were:

1 INTERNAL AGILE COACHES

2 CONSISTENT PRACTICES AND PROCESSES ACROSS TEAMS

3 IMPLEMENTATION OF A COMMON TOOL ACROSS TEAMS

4 EXTERNAL AGILE CONSULTANTS OR TRAINERS

5 EXECUTIVE SPONSORSHIP

*Respondents were able to make multiple selections.

Challenges Experienced Adopting & Scaling Agile

From last year to this year we saw a decrease in respondents citing "organizational culture at odds with agile values" and "lack of business/customer/product owner availability" as challenges for adopting and scaling agile. Barriers that were cited more this year include "fragmented tooling", "inconsistent processes across teams" and "general resistance to change".

Challenge	%
Organizational culture at odds with agile values	53%
General organization resistance to change	46%
Inadequate management support and sponsorship	42%
Lack of skills/experience with agile methods	41%
Insufficient training and education	35%
Inconsistent processes and practices across teams	34%
Lack of business/customer/product owner availability	31%
Pervasiveness of traditional development methods	30%
Fragmented tooling and project-related data/measurements	24%
Minimal collaboration and knowledge sharing	21%
Regulatory compliance or government issue	14%

*Respondents were able to make multiple selections.

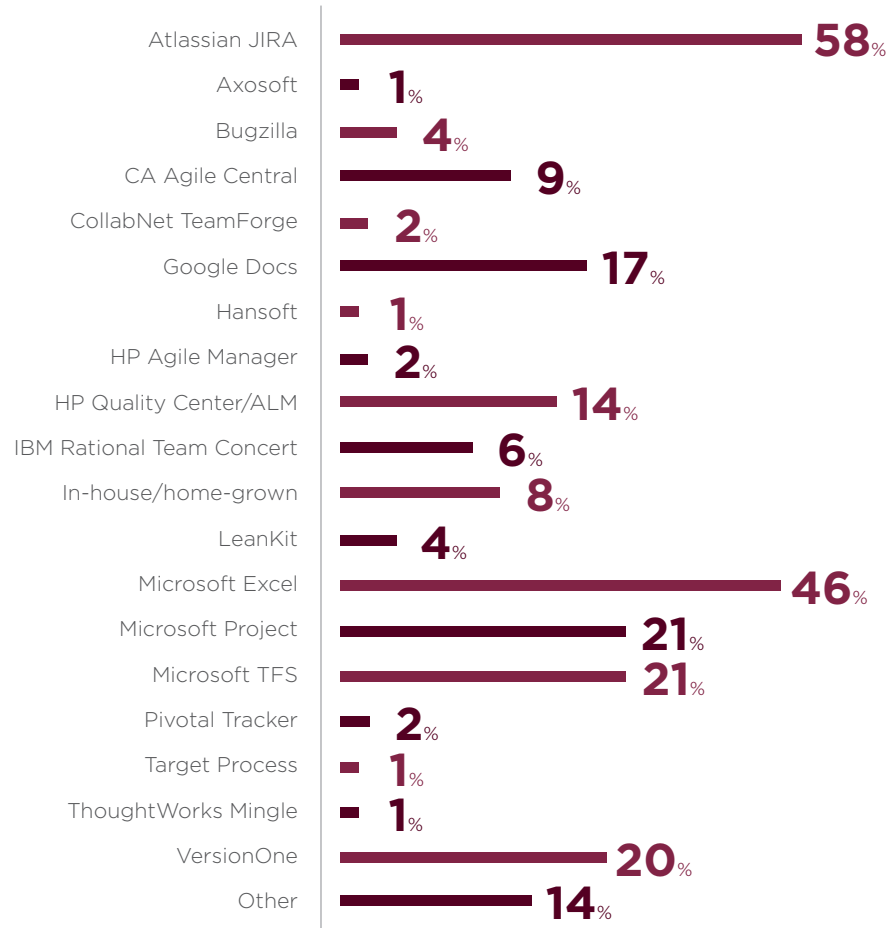# AGILE PROJECT MANAGEMENT TOOLS

General Tool Uses and Preferences

The use of Kanban boards again was cited as a tool used more than in the previous year as was Project & portfolio management (PPM) tools.

2017 | 2016

	CURRENT TOOL USAGE		FUTURE PLANS TO USE	
	2017	2016	2017	2016
Kanban board	74%	69%	7%	11%
Bug tracker	72%	71%	10%	10%
Taskboard	71%	75%	7%	8%
Agile project management tool	67%	63%	9%	17%
Spreadsheet	65%	67%	4%	5%
Wiki	62%	62%	11%	13%
Automated build tool	60%	59%	20%	22%
Unit test tool	57%	61%	15%	19%
Continuous integration tool	52%	52%	24%	27%
Requirements management tool	46%	43%	13%	19%
Release/deployment automation tool	44%	44%	29%	31%
Traditional project management tool	43%	43%	5%	5%
Project & portfolio management (PPM) tool	40%	35%	18%	25%
Automated acceptance tool	36%	35%	29%	36%
Index cards	29%	34%	7%	10%
Story mapping tool	29%	25%	19%	30%
Refactoring tool	19%	25%	15%	25%
Customer idea management tool	16%	16%	15%	26%

*Respondents were able to make multiple selections.

Use of Agile Management Tools

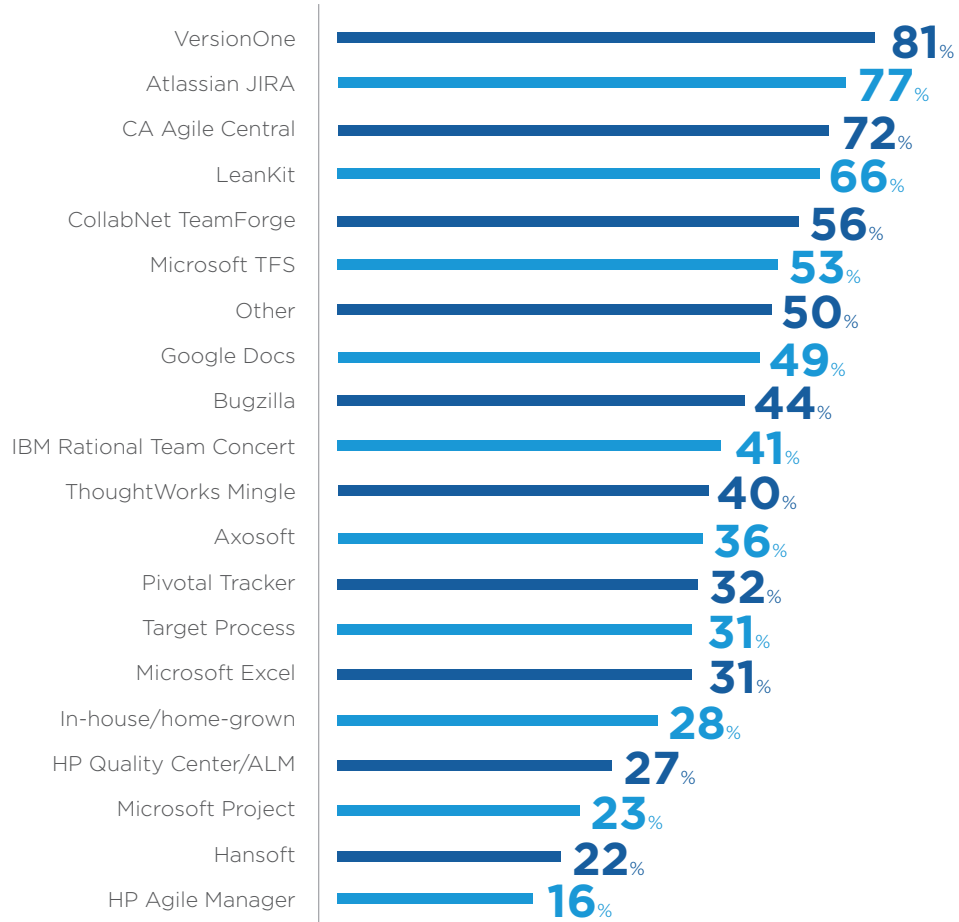| Tool	Percentage
Atlassian JIRA	58%
Axosoft	1%
Bugzilla	4%
CA Agile Central	9%
CollabNet TeamForge	2%
Google Docs	17%
Hansoft	1%
HP Agile Manager	2%
HP Quality Center/ALM	14%
IBM Rational Team Concert	6%
In-house/home-grown	8%
LeanKit	4%
Microsoft Excel	46%
Microsoft Project	21%
Microsoft TFS	21%
Pivotal Tracker	2%
Target Process	1%
ThoughtWorks Mingle	1%
VersionOne	20%
Other	14%

Respondents were able to make multiple selections.

Recommended Agile Project Management Tools

Respondents were asked whether they would recommend the tool(s) they are using based on their experience. For the sixth year in a row, VersionOne had the highest recommendation rate of any other tool evaluated in the survey (81%).

Tool	Percentage
VersionOne	81%
Atlassian JIRA	77%
CA Agile Central	72%
LeanKit	66%
CollabNet TeamForge	56%
Microsoft TFS	53%
Other	50%
Google Docs	49%
Bugzilla	44%
IBM Rational Team Concert	41%
ThoughtWorks Mingle	40%
Axosoft	36%
Pivotal Tracker	32%
Target Process	31%
Microsoft Excel	31%
In-house/home-grown	28%
HP Quality Center/ALM	27%
Microsoft Project	23%
Hansoft	22%
HP Agile Manager	16%

Respondents were able to make multiple selections.

DEVOPS INITIATIVES

14% Don't know

15% No DevOps Initiatives

48% DevOps initiative currently underway
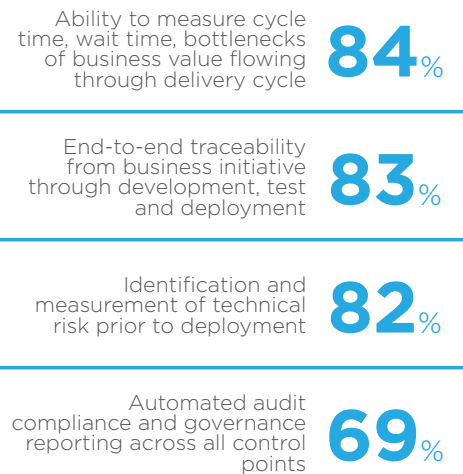
23% Planning a DevOps initiative
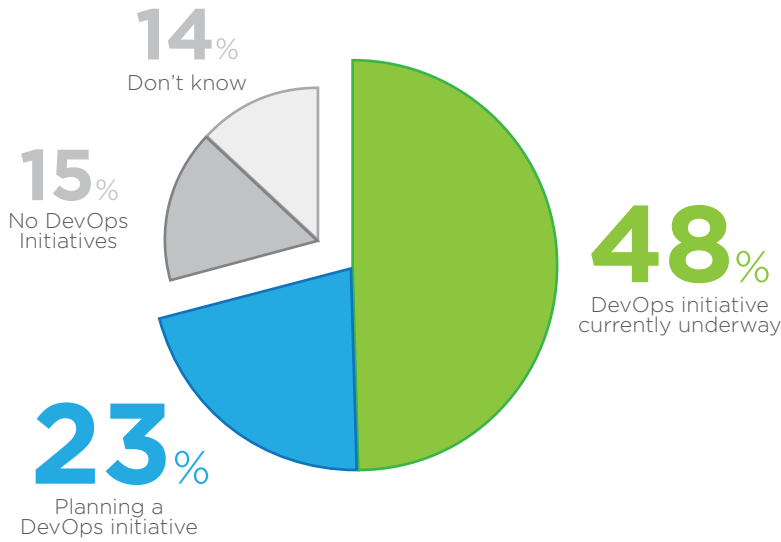
DevOps Initiatives

71% of respondents stated that they currently have a DevOps initiative in their organization or are planning one in the next 12 months.
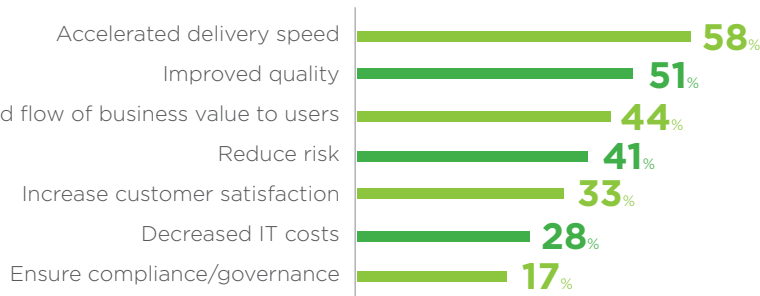
How Success Is Measured… *with DevOps Initiatives?*

Respondents cited the top measures of success for their organization's DevOps initiatives were accelerated delivery speed, improved quality, flow of business value all the way to the end user and reduction of risk.

Measure	%
Accelerated delivery speed	58%
Improved quality	51%
Increased flow of business value to users	44%
Reduce risk	41%
Increase customer satisfaction	33%
Decreased IT costs	28%
Ensure compliance/governance	17%

*Respondents were able to make multiple selections.

Value of Capability Improvement in DevOps Practice

Respondents said they would find it valuable or very valuable to experience improvements in the following capabilities in their DevOps practices:

Capability	%
Ability to measure cycle time, wait time, bottlenecks of business value flowing through delivery cycle	84%
End-to-end traceability from business initiative through development, test and deployment	83%
Identification and measurement of technical risk prior to deployment	82%
Automated audit compliance and governance reporting across all control points	69%

Importance of DevOps Transformation

65% of respondents said DevOps transformation was important or very important in their organization.

Not important	Somewhat Important	Important	Very important
12%	23%	32%	33%