The 2015 State of Scrum Report

How the world is successfully applying the most popular Agile approach to projects
EXECUTIVE SUMMARY

In February 2015, Scrum Alliance® surveyed almost 5,000 people about their use of Scrum. The survey respondents make up a diverse group, representing 108 countries and more than 14 industries. They reflect a range of functional areas, including IT software development, product development, operations, human resources, executives, and sales and marketing. Most have a technology slant, with 44% working in software development and 33% in IT. And they’re an Agile-savvy group, involved in an average of 4 Agile projects in the last 12 months.

From the survey results, we see that Scrum is becoming an increasingly popular and in-demand framework. In fact, nearly half the respondents report that Scrum is being used 50% or more of the time in their organizations, and 29% of respondents report it’s used much more frequently than that.

The survey uncovered some interesting key findings...findings that not only reflect where Scrum is today but what we can anticipate it will look like tomorrow. These include who is practicing Scrum, how they are practicing it, success levels associated with Scrum, and plans for continuing to use it.

I. WHO IS PRACTICING SCRUM?
Scrum is reaching beyond IT.

Scrum crosses industries, functional areas, and regions around the world.

- Scrum practices are currently in place among 82% of respondents, and another 11% are piloting Scrum.
- IT and software development professionals continue to be the primary users of Scrum, followed by product development and operations professionals. However, other departments use it as well, including research and development, sales and marketing, finance/accounting, human resources, and more.
II. WHY ARE THEY PRACTICING SCRUM?

Delight the customer, delight the business.

In the case of Scrum, what’s good for the customer is also good for the business.

- Nearly half the respondents (49%) cite fulfilling customer needs as the highest business priority for Scrum projects. This reflects Scrum’s focus on the customer.
- Meanwhile, the second-highest priority is all about the business — meeting budget, time, and scope constraints. This reflects Scrum’s focus on delivering shippable increments on time and on budget.

Scrum improves the quality of work life.

- 87% agree that Scrum is improving the quality of work life for their teams.
- Interestingly, 71% also believe that using Scrum causes tension with other parts of the organization not using Scrum.

We expect some tension to be a perennial challenge, just as with any organizational change. After all, Scrum requires a shift in an organization’s culture.

III. HOW ARE THEY PRACTICING SCRUM?

Scrum’s core practices are largely followed.

Most respondents report that they adhere to core Scrum and standard recommendations for practicing Scrum in terms of using Scrum artifacts and activities and following the recommended roles and team size.

- The average team size is 7 people.
- Most Scrum teams (60%) follow 2-week sprints.
- 81% hold a team Scrum each day.
- 83% conduct sprint planning prior to each sprint.
- 90% use at least some Scrum artifacts, such as the product backlog, sprint backlog, and burn-down chart, with 56% reporting they use these artifacts extensively.
- 81% hold retrospective meetings.

But distributed teams are more prevalent than co-located teams.

- 33% of respondents report their Scrum teams are distributed, versus 26% whose teams are co-located.

And many organizations mix and match approaches and frameworks.

- 42% of respondents report using Scrum exclusively.
- Of those using a combination of practices, 63% practice Scrum alongside Waterfall.
- 43% combine Scrum with Kanban.
- 21% combine Scrum with Lean.
IV. IS SCRUM WORKING?

Scrum success is increasing.

- The overall success rate of projects delivered using Scrum is 62%.
- Teams of the recommended size for Scrum — 4 to 9 members — report the most frequent success, while smaller and larger teams both report less frequent success.

Some challenges remain.

- The most common challenge for respondents — at 52% — is identifying and measuring the success of Scrum projects.
- The second most common challenge — at 46% — is transitioning from a Waterfall-based method to Scrum practices.

V. ROLE OF CERTIFICATION

It’s rarely required but commonly recommended.

- 81% of respondents believe certification has helped their Scrum practice.
- Nearly half of respondents’ organizations recommend certification, though only 7% require it.
- 59% of ScrumMasters are certified.

It will be interesting to see whether certification will become a priority for organizations as they work to gain an edge over their competitors.

VI. VARIABLES THAT IMPACT SCRUM

The size of an organization impacts implementation and success.

As organizational size increases, some key measures change significantly:

- Sprints get longer, averaging 2.7 weeks for teams of 10+ members.
- The top challenge shifts from measuring Scrum success to transitioning from Waterfall to Scrum.

This may reflect resource constraints in smaller companies and, meanwhile, effort required to change the direction of large entities.

Geographic region matters.

Respondents globally report using Scrum 40%-49% of the time.

- Respondents from North America and Asia report practicing Scrum most often.
- Europe and Australia report the highest Scrum project success rates.
- Organizations in the Middle East and North Africa report the lowest Scrum project success rates.

Organizations may vary by region in their comfort with a flat organizational structure, potentially affecting the full implementation of Scrum.
High-level support is critical.

- Respondents report that senior management sponsorship and support is far and away the most important factor in adopting Scrum.
- Additionally, Scrum projects run through a project management office (PMO) have a 93% success rate.

VII. THE FUTURE OF SCRUM

Scrum is expanding beyond software.

Scrum has expanded into a variety of departments within organizations.

- Respondents reveal the use of Scrum in non-IT projects run by operations, production, research and development, and sales and marketing.

The forecast for Scrum is positive.

- 95% of respondents say they plan to continue to use Scrum moving forward.
- Given that Scrum is expanding beyond software, we expect to see not only continued demand but in fact an intense surge in demand for skilled Scrum practitioners and experts.
SURVEY RESULTS

SECTION ONE: SURVEY RESPONDENT PROFILE

1. Where are you located?

A total of 4,452 people across 108 countries responded to the survey. Three-fourths are from North America or Europe.

The geographic distribution of respondents closely mirrors Scrum Alliance’s global membership base.

**TOP 5 COUNTRIES**

<table>
<thead>
<tr>
<th>Country</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S.</td>
<td>44%</td>
</tr>
<tr>
<td>India</td>
<td>10%</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>6%</td>
</tr>
<tr>
<td>Germany</td>
<td>4%</td>
</tr>
<tr>
<td>Canada</td>
<td>4%</td>
</tr>
</tbody>
</table>
2. What is your role in your organization?

Respondents represent a diverse set of roles, with a preponderance of project managers and ScrumMasters.

**ROLES**

- ScrumMaster: 29%
- Project Manager: 20%
- Product Owner: 9%
- Executive: 7%
- Software Dev/Arch/Eng: 7%
- Program Manager: 6%
- Scrum Team Member: 5%
- Consultant/Coach/Trainer: 5%
- Business Analyst: 4%
- IT Manager: 4%
- Other: 3%

3. Which area of your organization do you work within?

Most respondents work in a software development (44%) or IT (33%) function.

**RESPONDENT BY FUNCTIONAL AREA**

- Software Development: 44%
- IT: 33%
- Product Development: 11%
- Other: 5%
- Operations: 3%
- Sales & Marketing: 2%
- C-Level: 1%
4. What certifications do you have?  
(Multiple answers allowed)

Most respondents hold Scrum certifications, and most — at 59% — have earned Scrum certifications exclusively. Another 21% hold both Scrum and PMI certifications.

**CERTIFICATIONS EARNED BY RESPONDENTS**

- Scrum certifications only: 59%
- Scrum and PMI certifications: 21%
- PMI certifications only: 7%
- Have no certification: 6%

*Other certifications included: Prince2 (2%), ITIL (1%), Lean/Six Sigma (1%), Other (7%)*

5. How many Agile projects have you worked on in the last 12 months?

On average, respondents have worked on 4 Agile projects in the last year.

**NUMBER OF AGILE PROJECTS PER RESPONDENT**

- None: 1%
- 1 to 4: 67%
- 5 to 10: 17%
- 10 or more: 10%

The CSM® certification offered by Scrum Alliance represents three-fourths of earned Scrum certifications.
6. In what industry are you employed?

Information technology is the leading single industry for survey respondents, named by nearly 3 in 10.

<table>
<thead>
<tr>
<th>INDUSTRY</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Information Technology</td>
<td>29%</td>
</tr>
<tr>
<td>Other</td>
<td>12%</td>
</tr>
<tr>
<td>Finance</td>
<td>12%</td>
</tr>
<tr>
<td>Healthcare</td>
<td>6%</td>
</tr>
<tr>
<td>Consulting/Training/Coaching</td>
<td>6%</td>
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<tr>
<td>Government</td>
<td>6%</td>
</tr>
<tr>
<td>Telecommunications</td>
<td>6%</td>
</tr>
<tr>
<td>Insurance</td>
<td>5%</td>
</tr>
<tr>
<td>Education</td>
<td>4%</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>3%</td>
</tr>
<tr>
<td>Retail</td>
<td>3%</td>
</tr>
<tr>
<td>Media &amp; Entertainment</td>
<td>3%</td>
</tr>
<tr>
<td>Research &amp; Development</td>
<td>3%</td>
</tr>
<tr>
<td>Transportation</td>
<td>2%</td>
</tr>
<tr>
<td>Automotive</td>
<td>2%</td>
</tr>
</tbody>
</table>

7. How many employees work at your organization?

Over 60% of respondents work at companies with fewer than 5,000 employees.

<table>
<thead>
<tr>
<th>NUMBER OF EMPLOYEES</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>1 to 499</td>
<td>37%</td>
</tr>
<tr>
<td>500 to 4,999</td>
<td>26%</td>
</tr>
<tr>
<td>5,000 to 19,999</td>
<td>16%</td>
</tr>
<tr>
<td>20,000 or more</td>
<td>21%</td>
</tr>
</tbody>
</table>
8. What is your organization’s approximate annual revenue (in U.S. dollars)?

62% of respondents work for companies with revenues of $50M+.

**EMPLOYER’S ANNUAL REVENUES**

- Over $1B: 33%
- $500M - $1B: 19%
- $10 - $50M: 14%
- Under $1M: 7%
- $50 - $500M: 16%
- $1 - $10M: 14%
- $500M - $1B: 10%
- Under $1M: 10%

9. What Agile approach is your organization using?  (Multiple answers allowed)

Nearly all respondents — 95% — report that Scrum is used as their organization’s Agile approach. The two other most common are Kanban and Lean, respectively.

**AGILE PRACTICES**

- Scrum: 95%
- Kanban: 43%
- Lean: 21%
- Extreme Programming (XP): 13%
- Feature-Driven Development: 7%
- Unified Process (e.g., RUP, AUP, OUP): 4%
- Other: 4%
- Team Software Process (TSP): 1%
- Waterfall: 1%
- DSDM: 1%
- Crystal/Crystal Clear: 1%

54% said they use Scrum in combination with other practices, while 42% reported exclusive use of Scrum.
10. How often is Scrum used in your organization?

Nearly half of respondents reported that Scrum is being used 50% or more of the time. And close to a third report that Scrum is used even more frequently – 75% or more of the time.

**HOW OFTEN SCRUM IS USED**

- Scrum used 0-25% of the time: 33%
- Scrum used 75% or more of the time: 29%
- Scrum used 25-50% of the time: 20%
- Scrum used 50-75% of the time: 18%

Respondents from North America and Asia reported the highest average frequency of Scrum use – almost 50% of the time.

**HOW OFTEN SCRUM IS USED BY REGION**

- North America: 49%
- Asia: 48%
- Australia & Oceania: 46%
- Europe: 45%
- Central America & Caribbean: 44%
- South America: 44%
- Sub-Saharan Africa: 42%
- Middle East/ North Africa: 40%
11. How is Scrum applied in your organization?

Most respondents use Scrum practices, with 25% using Scrum for all software development.

HOW SCRUM IS APPLIED

<table>
<thead>
<tr>
<th>Approach</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scrum is one of the practices we use</td>
<td>47%</td>
</tr>
<tr>
<td>Scrum is used for all software development</td>
<td>25%</td>
</tr>
<tr>
<td>We are piloting Scrum</td>
<td>11%</td>
</tr>
<tr>
<td>Scrum is deployed across the organization</td>
<td>8%</td>
</tr>
<tr>
<td>Other</td>
<td>4%</td>
</tr>
<tr>
<td>We have tried Scrum but no decision has been made to go further</td>
<td>3%</td>
</tr>
<tr>
<td>Scrum is used for some non-software development projects</td>
<td>2%</td>
</tr>
</tbody>
</table>

93% use Scrum in some form.

12. Has Scrum improved your team’s quality of work life?

The answer is a clear “yes” — 87% of respondents reported that the quality of their team’s work life improved with Scrum.

IMPROVEMENT IN QUALITY OF WORK LIFE

<table>
<thead>
<tr>
<th>Improvement Level</th>
<th>Percentage</th>
</tr>
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<tbody>
<tr>
<td>Yes</td>
<td>56%</td>
</tr>
<tr>
<td>To some extent</td>
<td>31%</td>
</tr>
<tr>
<td>Not sure</td>
<td>10%</td>
</tr>
<tr>
<td>No</td>
<td>4%</td>
</tr>
</tbody>
</table>

Positive 87%
13. Is there tension between the way Scrum teams are run and the way the rest of your organization is managed?

The majority of respondents see some level of tension between Scrum teams and the rest of the organization.

### TENSION BETWEEN SCRAM TEAMS AND WIDER ORGANIZATION

- **Yes**: 36%
- **To some extent**: 35%
- **No**: 22%
- **Not sure**: 7%

14. If your organization and/or department has a PMO (Project Management Office), are Scrum projects deployed and managed through it?

PMOs are still popular: More than 60% of respondents reported that their organization includes a PMO. The majority of these, 57%, deploy and manage Scrum projects *through* their PMO.

### PMO

- **Have a PMO**: 61%
- **Don't have a PMO**: 39%

### SCRUM PROJECTS DEPLOYED AND MANAGED...

- **Through the PMO**: 57%
- **Outside the PMO**: 43%
15. If your Scrum projects were deployed and managed through a PMO, how effective and successful were they?

Scrum projects are reported to be highly successful when managed through a PMO.

SUCCESS OF SCRUM PROJECTS

16. When your organization was adopting Scrum, which of the following were important?

Senior management support outweighs other factors by at least 5 times when organizations are considering the adoption of Scrum.

KEY SUCCESS FACTORS WHEN ADOPTING SCRUM
17. What is the highest business priority for Scrum projects?

Respondents cite fulfilling customer needs as the highest business priority. Similarly, they believe their executives consider delivering business value to the customer to be the most important aspect of Scrum-based projects.

### HIGHEST BUSINESS PRIORITY FOR SCRUM

- Fulfilling customer needs: 49%
- Meeting budget, time, and scope constraints: 21%
- Completing projects that drive innovation and market share: 16%
- Adding new features and functionality: 10%
- Other: 4%

18. Which area would you say is valued most by your organization’s executives for delivery of Scrum-based projects?

(Multiple answers allowed)

### VALUED MOST BY EXECUTIVES FOR SCRUM-BASED PROJECTS

- Delivering business value to the customer: 79%
- Meeting scheduled deadlines: 51%
- Quality: 45%
- Cost: 27%
- Other: 6%
19. How would you describe the culture of your organization in terms of facilitating Scrum? (Multiple answers allowed)

More than half the respondents (52%) reported that their Scrum teams have an open and collaborative environment. However, though senior management support is considered critical in Scrum adoption, only 7% of respondents reported that as visible in their organizations.

### ORGANIZATIONAL CULTURE

- An open environment of cooperation and collaboration between customer, Scrum teams, and product owner: 52%
- The Scrum team is empowered to do its work: 24%
- The ScrumMaster has the authority and ability to remove impediments: 21%
- The Scrum team is self-organizing: 9%
- Our organization does not endorse and/or use Scrum: 9%
- Senior management actively endorses and supports Scrum: 7%

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20. Does your organization require Scrum or other project management certification?

Almost half of organizations recommend certification, but fewer than 10% require any certifications.

### OUR ORGANIZATION...

- Recommends certification: 48%
- Does not require or endorse any certification: 45%
- Requires certification: 7%

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ScrumMasters reported higher levels of Scrum team empowerment, at 27%, and higher levels of authority to remove impediments, at 26%, than did other team members.
21. Which certification(s) does your organization require? (Multiple answers allowed)

If requirements are in place, Scrum Alliance certifications are the primary type required (71%), specifically Scrum Alliance’s CSM® and CSPO®. One-third expect PMI certification. Other required certifications are CMMI, ITIL, and Prince2.

<table>
<thead>
<tr>
<th>CERTIFICATIONS REQUIRED</th>
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<tbody>
<tr>
<td>NET: Scrum</td>
</tr>
<tr>
<td>Certified ScrumMaster (CSM: Scrum Alliance)</td>
</tr>
<tr>
<td>NET: PMI</td>
</tr>
<tr>
<td>Project Management Professional (PMP: PMI)</td>
</tr>
<tr>
<td>Certified Scrum Product Owner (CSPO: Scrum Alliance)</td>
</tr>
<tr>
<td>NET: Other</td>
</tr>
<tr>
<td>Other</td>
</tr>
<tr>
<td>PMI Agile Certified Practitioner (PMI-ACP)</td>
</tr>
<tr>
<td>Certified Scrum Developer (CSD: Scrum Alliance)</td>
</tr>
<tr>
<td>Professional ScrumMaster (PSM)</td>
</tr>
<tr>
<td>Professional Engineer</td>
</tr>
<tr>
<td>PMI unspecified</td>
</tr>
<tr>
<td>Program Management Professional (PgMP: PMI)</td>
</tr>
<tr>
<td>Certified Scrum Professional (CSP: Scrum Alliance)</td>
</tr>
</tbody>
</table>

*Base: Organization requires certification, N=273*

22. Has obtaining certification improved the process and practices of Scrum?

Respondents consider certification useful: 81% strongly agree/agree that it has enhanced their practice of Scrum.

<table>
<thead>
<tr>
<th>CERTIFICATION IMPROVES SCRUM PRACTICES</th>
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</thead>
<tbody>
<tr>
<td>No Difference</td>
</tr>
<tr>
<td>Strongly Disagree</td>
</tr>
<tr>
<td>Disagree</td>
</tr>
</tbody>
</table>

Strongly Agree

Agree

Disagree

14%
Looking globally, respondents from all regions reported that certification improved their Scrum practices. Agreement was particularly strong, at 90%, in Asia.

**AGREE OR STRONGLY AGREE**

<table>
<thead>
<tr>
<th>Region</th>
<th>Agreement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asia</td>
<td>90%</td>
</tr>
<tr>
<td>South America</td>
<td>80%</td>
</tr>
<tr>
<td>North America</td>
<td>79%</td>
</tr>
<tr>
<td>Europe</td>
<td>78%</td>
</tr>
<tr>
<td>Sub-Saharan Africa</td>
<td>78%</td>
</tr>
<tr>
<td>Middle East/ North Africa</td>
<td>75%</td>
</tr>
<tr>
<td>Australia &amp; Oceania</td>
<td>71%</td>
</tr>
<tr>
<td>Central America &amp; Caribbean</td>
<td>64%</td>
</tr>
</tbody>
</table>

23. Does your organization seek training and coaching?  
(Multiple answers allowed)

Almost 60% of ScrumMasters received multiple-day training and became certified.

- One-fifth of product owners are certified and one-third have completed multiday training.
- Not quite 1 in 10 team members are certified, though 3 in 10 have received multiple days of training.
- Only 14% of respondents report no available support for training or coaching. There is more opportunity for additional training or coaching in house (31%) than via external sources (21%).

**CERTIFICATION BY SCRUM TEAM ROLE**

<table>
<thead>
<tr>
<th>Role</th>
<th>Certification</th>
</tr>
</thead>
<tbody>
<tr>
<td>ScrumMasters are certified</td>
<td>59%</td>
</tr>
<tr>
<td>Product owners are certified</td>
<td>21%</td>
</tr>
<tr>
<td>Scrum teams are certified</td>
<td>8%</td>
</tr>
</tbody>
</table>
24. Outside of IT, which departmental areas run Scrum projects?
(Multiple answers allowed)

Operations, production, and research & development are the primary non-IT areas using Scrum for projects.

DEPARTMENTS OTHER THAN IT USING SCRUM

- Operations or Production: 48%
- Research & Development: 46%
- Sales & Marketing: 26%
- Financial or Accounting: 16%
- Other: 13%
- Human Resources: 12%
SECTION THREE: SCRUM ROLES & PRACTICES

25. How would you describe the role of the ScrumMaster on your projects?

ScrumMasters are more often assigned to multiple projects than to one specific project. Rarely is a traditional project manager used in conjunction with a ScrumMaster.

STATE OF THE SCRUMMASTER ROLE

<table>
<thead>
<tr>
<th>ScrumMaster Role</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Each project has a ScrumMaster who may be assigned to multiple projects</td>
<td>37%</td>
</tr>
<tr>
<td>Each project has a dedicated ScrumMaster</td>
<td>24%</td>
</tr>
<tr>
<td>A traditional project manager will act in the role of ScrumMaster</td>
<td>23%</td>
</tr>
<tr>
<td>There is a project manager in addition to the ScrumMaster</td>
<td>16%</td>
</tr>
</tbody>
</table>

26. How would you describe the role of the product owner on your projects?

The product owner role is the most stable role across organizations. For 29% of respondents, there is a dedicated product owner.

STATE OF THE PRODUCT OWNER

<table>
<thead>
<tr>
<th>Product Owner Role</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>The product owner acts as an intermediary to consolidate and reconcile the priorities of multiple stakeholders</td>
<td>33%</td>
</tr>
<tr>
<td>There is a dedicated product owner who sets priorities and works with the customer</td>
<td>29%</td>
</tr>
<tr>
<td>The product owner works directly with the Scrum team</td>
<td>26%</td>
</tr>
<tr>
<td>There is no product owner role</td>
<td>12%</td>
</tr>
</tbody>
</table>
27. How would you describe your Scrum team’s communications and organization?

The Scrum team is somewhat more likely to be distributed (33%) than co-located (26%). In neither case is the Scrum team likely to be cross functional.

**STATE OF THE SCRUM TEAM**

- The Scrum team is distributed across different sites/geographic areas: 33%
- The Scrum team is co-located: 26%
- The Scrum team is self-directed and self-organizing: 15%
- The Scrum team is included in work effort estimates and ordering the product backlog: 12%
- The ScrumMaster or PM drives the estimates/team communication: 8%
- The Scrum team is cross functional: 6%

28. How many people are typically on the Scrum team?

Scrum teams average 7 members, within the recommended size range. Respondents in IT/software development reported an average team size of 6.6 members.

**TEAM SIZE AVERAGE: 7 MEMBERS**

- Fewer than 3 team members: 7%
- 3-5 team members: 11%
- 6-9 team members: 41%
- 10+ team members: 41%

*In Scrum, it is a general recommendation that teams total 7 members, plus or minus 2.*
29. How long do your Sprints typically run?

A 2-week sprint is the most common cadence, falling within recommended sprint lengths.

**SPRINT LENGTH**

*Average: 2.4 weeks*

- 3 to 4 weeks: 29%
- 2 weeks: 60%
- 1 week: 5%
- 5 to 6 weeks: 2%
- Variable durations: 4%
- 6 or more weeks: 1%

Team size seems to have an impact on the actual sprint duration. Smaller teams, of 3 or fewer, are most likely to sprint for 2 weeks. Larger Scrum teams, with 4–9 members, reported slightly longer sprints, averaging 2.4 weeks. Teams with 10+ members reported an average sprint duration of 2.7 weeks.

30. How many sprints typically make up a Scrum project?

More than half of respondents, 55%, run 7 or more sprints per project.

**NUMBER OF SPRINTS**

*Average: 6.8*

- 7 or more: 55%
- 4 to 6: 34%
- 3 or less: 11%

Respondents in product development tend to have more sprints, an average 7.2, followed by IT/software development with an average of 6.9 sprints, followed by operations at 5.7 sprints.
31. When does your team hold sprint planning meetings?

The majority of respondents, 83%, conduct sprint planning prior to the sprint itself.

**SPRINT PLANNING MEETINGS**

- Prior to a sprint: 83%
- At the beginning of the project: 12%
- No sprint planning meetings are held: 5%

Smaller teams of 3 or fewer are less likely to hold sprint planning prior to a sprint and reported doing this just 55% of the time. That's compared to teams of 4-9 members, which plan prior to a sprint 85% of the time, and teams of 10+, which plan prior to a sprint 82% of the time.

32. Does your team hold Scrum meetings daily?

Over 80% of respondents report holding Scrum meetings each day.

**SCRUM MEETINGS**

- Daily: 81%
- Multiple times a week, but not daily: 11%
- As needed: 5%
- Not done: 3%

Respondents fulfilling ScrumMaster roles reported a higher incidence of daily Scrum meetings, at 92%, while respondents in operations reported a lower incidence of daily Scrum meetings, at 50%.
33. When does your team hold retrospectives?

Post-sprint retrospectives are the most common, according to 79% of respondents.

RETROSPECTIVES

<table>
<thead>
<tr>
<th>Event</th>
<th>Percentage</th>
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</thead>
<tbody>
<tr>
<td>After each sprint</td>
<td>79%</td>
</tr>
<tr>
<td>At the end of the project</td>
<td>12%</td>
</tr>
<tr>
<td>No retrospectives are held</td>
<td>10%</td>
</tr>
</tbody>
</table>

Respondents holding ScrumMaster roles reported a higher overall incidence of retrospective meetings, at 88%, while respondents in operations reported a lower incidence of retrospectives, at 57%.

34. How often does your team engage in testing and continuous integration/build?

The vast majority of respondents, 94%, are doing some level of testing and continuous integration/build.

TESTING AND CONTINUOUS INTEGRATION/BUILD

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>When needed</td>
<td>30%</td>
</tr>
<tr>
<td>Daily</td>
<td>26%</td>
</tr>
<tr>
<td>Multiple times throughout the day</td>
<td>24%</td>
</tr>
<tr>
<td>Weekly</td>
<td>11%</td>
</tr>
<tr>
<td>Not done</td>
<td>6%</td>
</tr>
</tbody>
</table>

Those in ScrumMaster roles reported a higher incidence (32%) of daily testing and continuous integration/build.

Though Scrum does not define software engineering practices, it is usually used in conjunction with XP, which recommends that testing and continuous integration/build be done as frequently as feasible.
35. How often are Scrum artifacts, such as the product backlog and the sprint backlog used?

Ninety percent of respondents use at least some Scrum artifacts, with 56% reporting that they use Scrum artifacts extensively.

**SCRUM ARTIFACTS (Product backlog, sprint backlog, etc.)**

- Used extensively and in every Scrum project: 56%
- Some are used: 34%
- We use our own internal project documents: 6%
- No formal project documentation is used: 3%

Those in ScrumMaster roles reported a higher extensive use of artifacts, at 64%, while those in operations reported a lower use of extensive use of Scrum artifacts, at 36%.

36. Which of the following do you use in your Scrum projects and processes? (Multiple answers allowed)

The majority of respondents hold retrospectives, share a common understanding of “Done,” and engage in continuous integration/build and refactoring. Fewer than half reported the use of test-driven development, pair programming, simplicity of design driving requirements, or rigorous measuring of technical debt.

**USED IN SCRUM PROJECTS AND PROCESSES**

- Sprint retrospectives are done at the end of each sprint to identify opportunities for process improvements: 81%
- A common and agreed-upon understanding of “Done” is maintained across the Scrum team, product owner: 64%
- Continuous integration/build: 63%
- Refactoring is used when appropriate: 58%
- Test-driven development: 36%
- Pair programming: 28%
- Simplicity of design drives requirements: 23%
- Technical debt is rigorously measured: 16%
37. If your organization has an existing Waterfall method in place, what was your experience when Scrum was introduced?

Opinions about the success rate of Scrum vary widely depending on the respondent’s role, organization size, and other variables. Overall, 20% of respondents reported that Scrum has been very successful at their organization and that it is all they now use.

### ORGANIZATIONS WITH EXISTING WATERFALL METHOD

- **Scrum was used for some projects and Waterfall for the rest**: 40%
- **Scrum was successfully introduced in addition to our Waterfall method**: 23%
- **Scrum was very successful and that is all that we use now**: 20%
- **After a thorough evaluation of a project’s type, requirements, and parameters, a decision is made to use either Scrum or Waterfall**: 9%
- **We were not successful in introducing Scrum, so we stayed with our Waterfall method**: 4%
- **Scrum was used for some projects and Waterfall for the rest**: 4%

### Scrum finds a foothold in organizations with an existing Waterfall method in place, according to 63% of respondents.

38. What were some of the challenges faced by your organization in achieving its goals with Scrum?  *(Multiple answers allowed)*

The biggest struggles are measuring Scrum success and transitioning from Waterfall to Scrum.

### KEY CHALLENGES

- **We did not have clearly identified metrics to identify and measure the success of Scrum projects and delivery**: 52%
- **It was difficult to transition from a Waterfall-based method to one driven by Scrum practices**: 46%
- **Alignment with other projects in the portfolio**: 41%
- **Product owners and teams were just not willing and/or enthusiastic about Scrum best practices**: 35%
- **We did not get senior management sponsorship and support**: 23%
- **Other**: 7%
Smaller organizations find it challenging to find metrics to measure success.

**CHALLENGES**

*We did not have clearly identified metrics to identify and measure the success of Scrum projects and delivery.*

<table>
<thead>
<tr>
<th>Size Range</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 to 99</td>
<td>60%</td>
</tr>
<tr>
<td>100 to 499</td>
<td>54%</td>
</tr>
<tr>
<td>500 to 4,999</td>
<td>54%</td>
</tr>
<tr>
<td>5,000 to 19,999</td>
<td>47%</td>
</tr>
<tr>
<td>20,000 or more</td>
<td>47%</td>
</tr>
</tbody>
</table>

Larger organizations are more concerned about how to handle the transition from Waterfall to Scrum.

**CHALLENGES**

*It was difficult to transition from a Waterfall-based method to one driven by Scrum practices.*

<table>
<thead>
<tr>
<th>Size Range</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 to 99</td>
<td>32%</td>
</tr>
<tr>
<td>100 to 499</td>
<td>39%</td>
</tr>
<tr>
<td>500 to 4,999</td>
<td>46%</td>
</tr>
<tr>
<td>5,000 to 19,999</td>
<td>53%</td>
</tr>
<tr>
<td>20,000 or more</td>
<td>56%</td>
</tr>
</tbody>
</table>

Larger organizations are also the most concerned about how to align Scrum projects with others in their portfolios.
39. Considering all the projects in your organization that were managed using Scrum, what percent of the time would you estimate they were delivered successfully?

Scrum was successfully used more than half the time, according to 74% of respondents.

**AMOUNT OF TIME SCRUM IS SUCCESSFUL**

*Average success rate: 62% of the time*

<table>
<thead>
<tr>
<th>percentage of time</th>
<th>success rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>75%+ of time</td>
<td>42%</td>
</tr>
<tr>
<td>50-75% of time</td>
<td>32%</td>
</tr>
<tr>
<td>25-50% of time</td>
<td>14%</td>
</tr>
<tr>
<td>0-25% of time</td>
<td>12%</td>
</tr>
</tbody>
</table>

About three-fourths of teams realize success with Scrum 50% or more of the time. Teams of recommended size (4–9 members) reported more frequent success, while smaller teams (1–3 members) and larger teams (10 or more members) reported less frequent success.

**AMOUNT OF TIME SCRUM IS SUCCESSFUL BY TEAM SIZE**

<table>
<thead>
<tr>
<th>team size</th>
<th>success rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-9 on Scrum team</td>
<td>77%</td>
</tr>
<tr>
<td>10 or more on Scrum team</td>
<td>65%</td>
</tr>
<tr>
<td>3 or fewer on Scrum team</td>
<td>50%</td>
</tr>
</tbody>
</table>
Respondents in Europe report the highest rate of success with Scrum; 79% of European respondents say Scrum is successful in their organizations 50% of the time or more.

**SCRUM IS SUCCESSFUL 50% OF THE TIME OR MORE, BY REGION**

<table>
<thead>
<tr>
<th>Region</th>
<th>Success Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Europe</td>
<td>79%</td>
</tr>
<tr>
<td>Australia &amp; Oceania</td>
<td>76%</td>
</tr>
<tr>
<td>Sub-Saharan Africa</td>
<td>74%</td>
</tr>
<tr>
<td>North America</td>
<td>73%</td>
</tr>
<tr>
<td>Asia</td>
<td>70%</td>
</tr>
<tr>
<td>South America</td>
<td>69%</td>
</tr>
<tr>
<td>Central America &amp; Caribbean</td>
<td>68%</td>
</tr>
<tr>
<td>Middle East/North Africa</td>
<td>64%</td>
</tr>
</tbody>
</table>

40. Do you think your organization is likely to use Scrum further?

The outlook for Scrum is highly favorable. Virtually all consider it likely that their organization will use Scrum in the future.

**WILL USE SCRUM FURTHER**

- Very likely: 72%
- Somewhat likely: 23%
- Somewhat unlikely: 3%
- Very unlikely: 2%
ABOUT SCRUM ALLIANCE®

Founded in 2001, SCRUM ALLIANCE® is the largest, most established and influential professional membership organization in the Agile community. SCRUM ALLIANCE® is a nonprofit association with more than 400,000 members worldwide. Its mission is to Transform the World of Work® by guiding organizations to become prosperous and sustainable, to inspire people, and to create value for society. Scrum is at the foundation of all its products, services, and solutions. For more information, please visit www.scrumalliance.org.

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