



The STATE OF SCRUM Report 2017 Edition

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



Table of Contents

| | |
|---|-----------|
| Executive Summary | <u>3</u> |
| Section I: Survey Respondent Profile | <u>10</u> |
| Section II: Scrum Adoption | <u>15</u> |
| Section III: Scrum Roles and Practices | <u>20</u> |
| References | <u>31</u> |

Executive Summary

Scrum and Agile practices, once the sole domain of software developers, are making significant inroads outside of IT and finding acceptance in industries beyond technology, a new Scrum Alliance® membership survey shows.

The survey results* mirror a trend covered extensively by *Harvard Business Review*, *Forbes*, *CEO Magazine*, and *The New York Times* — companies of all stripes are using Scrum and other Agile frameworks to innovate and remain competitive.

“The whole notion of agility in business has crossed the chasm,” says Simon Orrell, a Scrum Alliance Certified Enterprise CoachSM (CEC) based in Alberta, Canada.

Businesses outside of software and Silicon Valley are talking about Agile, according to Orrell, and what they’re saying is this: If you want to stay competitive in a global market, you’re going to have to adopt some form of agility. If you don’t, you won’t be here much longer.

Staying competitive is top of mind for the C-suite, as a 2017 Forbes survey of top global executives reveals. In fact, 70% of survey respondents are concerned that their company won’t be relevant or competitive in two years.

Agile part of global workforce trends

However, agility as it pertains to staying competitive is only part of the Scrum and Agile equation. Values such as collaboration, empathy, and transparency can have an equally positive impact on workplace culture and employee satisfaction.

What’s interesting is these values are highly prized by other major initiatives in the global workforce as well.

For example, the B Team, a group of global business leaders that includes Sir Richard Branson of the Virgin Group, also espouses human-centric practices and places them at the heart of the business agenda. The B Team’s 2016 Progress Report notes that values such as respect, equality, collaboration, and meaningful work are key to achieving employee engagement and overall employee well-being.

Conscious Capitalism, a movement first recognized in the 1990s and now an organization cofounded by Whole Foods CEO John Mackey, takes a similar view: Businesses should focus on their purpose beyond profit. The Conscious Capitalism credo states that “conscious businesses have trusting, authentic, innovative, and caring cultures that make working there a source of both personal growth and professional fulfillment.”

Design thinking also takes a humanizing approach to business. Organizations that use a design-thinking model for problem solving and product development embrace iteration, collaboration, and empathy with users, according to a September 2015 *Harvard Business Review* article.

What Are Scrum and Agile?

Scrum is a team-based approach to delivering value to business. It is an Agile framework and consistent with the values specified in the Agile Manifesto.

These values, which emerged from the software development industry in 2001, are as follows:

- *Individuals and interactions over processes and tools*
- *Working software over comprehensive documentation*
- *Customer collaboration over contract negotiation*
- *Responding to change over following a plan*

[Learn more](#)

About the SCRUM ALLIANCE® Survey

When: Fall 2016

Respondents: 2,000+ Scrum Alliance members

Countries represented: 76

Industries represented: 15+

Respondents’ primary functional area: Technology-related field, with 40% in IT and 26% in software development

Other functional areas:

- *Product development*
- *Operations*
- *Finance*
- *Education*
- *Sales and marketing*

Benefits of Agile

CIOs, CTOs, and executives from the Forbes Technology Council cite the benefits of Agile as:

- *Faster feedback*
- *Ability to adapt to change*
- *Problems identified early*
- *Flexible prioritization*
- *Team purpose*

“When I look at some of these initiatives and trends, their principles are in line with Agile — the people side, motivated teams, teams where purpose is important,” says Brock Argue, a CEC based in Calgary, Canada.

In his opinion, Agile doesn’t fit into these workforce trends. Instead, it’s the reverse. These initiatives are “the new expression of agility.”

That may indeed be the case. After all, Agile has been around in explicit form since 2001, when the Agile Manifesto was hatched by software engineers at a ski resort in Utah (and its roots developed still earlier). Now, 16 years later, Scrum and Agile practices have gained a strong foothold in the global marketplace, as the 2016 Scrum Alliance survey results indicate:

- **Scrum increasing beyond IT, beyond software:** Scrum and Agile have not only started to break down organizational walls within companies, but they are also taking hold in diverse industries.
- **Scrum and Agile practiced worldwide:** While more than three-quarters of Scrum Alliance survey respondents live in North America and Europe, they also live in Asia and Australia.
- **Less tension over Scrum implementation:** While still present, the tensions that arise from Scrum implementations have tapered.
- **Scrum certifications valued:** Scrum certifications, the primary mechanism for furthering one’s education in Scrum practices, continue to be beneficial.
- **Evolving roles:** A key Scrum Team role — that of the ScrumMaster — is evolving into a shared role and continues to evolve.
- **Mix-and-match approaches:** Most survey respondents use Scrum as one of the Agile frameworks in their organizations, and the number of respondents using other approaches along with Scrum is growing.

Overall, the future of Scrum and Agile looks bright indeed. Survey results show that most respondents, 98%, plan to use Scrum going forward. Beyond the constraints of this survey, however, it’s clear that some type of Agile framework is in place at very big companies, including Google, Apple, Facebook, IBM, HP, PayPal, Salesforce, Boeing, American Express, JP Morgan Chase, and BBVA Compass.

“I expect that just about every company will have an Agile transformation effort,” predicts Michael de la Maza, a CEC in San Francisco. “I expect it to become absolutely pervasive.”

Highlights of the Scrum Alliance survey

Scrum is increasing outside of IT

The survey results indicate that while the majority of respondents work in IT or software development, other departments are using it as well. In fact, 21% of all Scrum projects are run by departments outside of IT.

“One of the reasons Scrum has migrated outside of IT is that companies are rarely just about IT,” Orrell says. “They’re also about marketing, finance, and sales.”

Getting everyone in the organization to follow the same set of principles removes roadblocks and impediments to ensure the successful delivery of a company’s product or service, he explained.

In other words, organizations outside of IT are noticing the results that Scrum teams are getting, and they want to try it themselves.

De la Maza has another take on Scrum’s reach beyond IT. “There’s an enormous dearth of good managers,” he says. “Agile and Scrum are a way of helping people become better managers.”

With few options for formal training for mid-level managers available, Scrum offers an alternative, he says. Managers in departments outside of IT are discovering its principles and practices and applying them to successfully lead teams.

Scrum in IT and Beyond

- Respondents in operations or product development continue to be the primary non-IT users of Scrum (45%), followed by research and development (39%).
- Departments seeing a rise in Scrum include:
 - Sales and marketing (31%).
 - Finance/accounting (20%).
 - Human resources (20%).
- 21% of all Scrum projects are run by departments outside of IT.

“What does a first-level manager in marketing and HR do when they want to become a better manager?” de la Maza asks. “What does a second-level manager do? A very good answer is emerging.”

A 2016 *Harvard Business Review* article notes that even exposure to Agile can improve a manager’s skills. “Working on Agile teams can also help prepare functional managers — who rarely break out of their silos in today’s overspecialized organizations — for general management roles,” the article states. “It exposes them to people in other disciplines, teaches collaborative practices, and underscores the importance of working closely with customers — all essential for future leaders.”

Another explanation for Scrum and Agile’s growing reach beyond IT is the proliferation of Agile and Scrum coaches. “Coaches are starting to help connect the dots” between departments, Argue says. Not only that, but Scrum and Agile coaches are now specializing in particular areas, such as marketing and HR.

Scrum spreads across industries

According to the survey, respondents report high usage of Scrum in industries such as information technology and hardware and software development, but it’s also making inroads in other industries, including finance/banking, insurance, education, consulting, retail, and media and entertainment.

An article in *The New York Times* noted Agile’s use in industries as diverse as museums and car dealerships, while a 2016 *Harvard Business Review* article has reported that Agile is practiced in industries such as farm manufacturing, wineries, and online music delivery systems.

Argue attributes Scrum’s spread to critical mass. Scrum is now mainstream and “more and more recognizable, and less risky in industries that culturally are not acceptable of high risk. More organizations are willing to try it out,” he says.

It’s also spreading because industries are increasingly becoming digitized “with more process automation,” says Andreas Schliep, a CEC and executive partner of DasScrumTeam in Switzerland. “And process automation works best with approaches like Scrum.”

Indeed, the 2017 *Forbes* report of senior executives shows that “nearly three-quarters (72%) of respondents are already seeing tangible results from digitization in the area of market share increase.”

Schliep, however, adds that Scrum’s adoption beyond IT and the software development industry can be attributed to something even simpler. “It happens to be the capability to handle complex issues.”

Scrum practices still dominate in North America and Europe

The survey shows that more than three-quarters (78%) of Scrum Alliance respondents live in North America and Europe, with Asia ranking a distant third at 11%.

The concentration of Scrum practitioners in these areas is most likely explained by its origins, according to de la Maza. “If you look at the Agile Manifesto, all of those people who signed it are North Americans or Europeans,” he says.

Scrum in Diverse Industries

- **Hardware and software development** represent the highest level of full Scrum deployment (40%).
- **IT** indicates a higher average percentage of projects delivered by Scrum (54%).
- **Media and entertainment industry** reports the highest usage of any Scrum for an Agile approach (98%), with a higher average percentage of projects delivered by Scrum (59%).
- **Insurance and finance/banking** use trainer/coaches (60%) and often offer in-house training (72%).
- **Manufacturing** reports low Scrum usage.

Where Do People Practice Scrum?

- 61% of respondents from 76 countries report that they use Scrum.
- Three-quarters of survey respondents are from North America (52%) and Europe (26%), with Asia ranking a distant third (11%).
- The top five countries represented are:
 - U.S. (48%)
 - India (8%)
 - U.K. (7%)
 - Germany (5%)
 - Canada and Australia (each at 4%)

It might also have to do with cultural norms. “One of the things that we’re trying to do inside Agile teams is to remove the notion of hierarchy, treat people as equals, and dispense with some very traditional business models around management,” Orrell says. “We’re trying to provide an environment where all team members have an equal say in possible solutions.”

Therefore, in cultures where plan-driven approaches remain important aspects of corporate life, Scrum adoption may take longer to catch on.

“The Agile work mindset requires collaboration, cooperation, and a face-to-face corporate culture,” Schliep says. In countries and regions with more hierarchical systems, such as Russia, Asia, and other parts of the world, Scrum practices are more difficult to establish.

Tension over Scrum declines

Respondents in previous Scrum Alliance surveys reported that Scrum caused perceived tension with other parts of the organization that don’t use Scrum.

The 2016 survey, however, indicates that tension overall has subsided, with 69% of respondents reporting tension, down from 73% in 2015.

One reason respondents are reporting less tension may be due to the higher level of acceptance and awareness of Scrum and other Agile methods, according to Argue.

It also helps if other areas of an organization notice when Scrum teams are successful and start considering adopting it themselves. More Scrum coaches within organizations may be having an impact as well.

“I think we’re helping to bridge the gap between the different groups — the development teams and other groups that they might have to interact with,” he says. “We’re helping them see how it works for their organization and how they can interact with the Scrum Teams effectively.”

Even if tension has decreased, 70% of survey respondents say the primary cause of that tension is adherence to top-down, command-and-control approaches to management.

Scrum modifies the structure of an organization, Schliep says. “It creates ripples in the organizational structure around it. The typical reaction to that is to keep the structure intact. It takes awhile before an organization’s structure changes and starts to create a new pattern.”

That pattern may refer to a flatter organization that’s less hierarchical and instead empowers employees to participate in decisions and foster mutual appreciation of individuals’ abilities, according to the B Team’s *Towards a Plan B for Business* report. It mentions Google, Starbucks, KPMG, and other companies that have flatter organizations, albeit with some structure, to spur decision making and innovation.

Of course, tension may have less to do with Scrum and more to do with organizational change, according to Orrell. “Tension is created simply because we are trying to make a transformation from traditional business practices to iterative, incremental business practices. There’s always going to be tension there.”

Schliep agrees. “The idea behind Scrum is to bring customers and development departments together. Of course there is tension. It’s like you want to play a game of football. And one half wants to play European football and the other half American football.”

Organizational Tension

- 27% of respondents believe that Scrum causes tension, down from 37% in 2015.
- Meanwhile, those who believe it causes tension “to some extent” rose to 42%, up from 36% in 2015.
- 70% of respondents cite the primary cause of that stress as adherence to top-down, command-and-control approaches to management.

ScrumMaster Role

- 23% of respondents report that each project has a dedicated ScrumMaster, down from 26% in 2015.
- 19% of respondents say it is not uncommon for a project manager to work with the ScrumMaster on a project.
- 85% of ScrumMasters are certified.

The evolving role of the ScrumMaster

The ScrumMaster plays an important role on a team by keeping the Scrum process running, facilitating meetings, advocating for the team, interacting with executives and other managers, and handling other duties. While these tasks may not be changing, the role of ScrumMaster is evolving.

As reported in previous surveys, ScrumMasters tend to be assigned to multiple areas. While that is still the case, the 2016 survey indicates that now fewer ScrumMasters are focused on single initiatives. It is also more common for them to share the role with project managers.

One of the reasons the role may be changing is that it's a large role to begin with, according to de la Maza, so it may require more people to handle the tasks associated with it, especially as it pertains to organizational change.

"The role of ScrumMaster, as it's defined, is an awesome role," he says. "Here's this person who's an expert in organizational change who can also talk to VPs, interact with teams, remove impediments, and so forth. It's difficult to find a single person to do that."

Schliep thinks the role is being transferred to or shared with project managers or other managers because many ScrumMasters come from a technical background and don't necessarily have the people skills to fulfill the role effectively.

"When we're looking for a good product owner, we look for a business background or advanced studies in business economics. If we're looking for a good technical person, we want to see someone with a computer science background. But what are people actually looking for when they look for a ScrumMaster? The ScrumMaster's job is to work with people."

Developers often move into the role of ScrumMaster, he explains, and that isn't always a good match.

An ideal candidate is someone not only with the technical know-how but also with a background in social sciences. Schliep says that offering advanced training or education focused on people skills would help better prepare ScrumMasters for such an important role.

Certifications remain beneficial

Certification can be a starting point for individuals and organizations that discover Scrum and want to learn more about it, Argue says. It also offers a path to achieving real change in the workplace.

That appears to be working, as most survey respondents (82%) believe that certification has helped their Scrum practice.

According to Schliep, certification is most helpful when it is tied to career development, mentoring by a Scrum expert, or engagement with the Scrum and Agile community. But the value of certification goes beyond that.

As the business community observes the benefit of practices, in particular the iterative, incremental techniques of Scrum, companies will seek out employees with education and experience, Orrell says.

Getting a certification, whether it's learning what it takes to be a ScrumMaster, a Scrum developer, or a coach, "is not just about taking exams, it's also about demonstrating experience," he says. Of particular interest is experience in helping companies transform their business.

As Scrum and Agile become more mainstream, the value of certifications will rise, and companies will want to hire employees knowledgeable about Scrum practices.

"I think companies are going to find if they don't take advantage of using Scrum or some other Agile mindset, then they're going to fall away to their competitors," Orrell says.

ScrumMaster Role

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Value of Certification

82% of respondents believe that certification has helped their Scrum practice.

Mix-and-match Agile approaches are on the rise

Scrum continues to be a popular framework. About a third of survey respondents say they use it exclusively. But perhaps what's most interesting is that almost two-thirds use it with other Agile approaches. In fact, respondents report that their organizations use three different frameworks on average.

Orrell believes companies are mixing and matching approaches as a quick fix for rapid growth. "These companies are looking to scale immediately, and they're looking for answers on how to scale immediately, without really paying attention to how their specific company should evolve," he says.

The problem is that "getting proficient with the core of Scrum takes time. If that core isn't embodied prior to scaling, it's very difficult to embody that mindset at a large scale."

De la Maza agrees. As a coach, he is constantly surprised by how few clients understand Scrum. The reason Agile transformations fail, he says, is "first, people don't know what Agile is, and when they find out what it is, they don't want it. And second, they don't know what Agile coaching is, and when they find out what it is, they don't want it. So what do people want to do? What people want are quick, easy solutions; they want copy and paste."

Scrum, on the other hand, "is about deeply understanding your way of work. When you do that, you generate practices that work for you."

There's another reason companies use multiple Agile approaches, according to Argue. And that is that certain industries gravitate toward particular frameworks. For example, he has seen organizations that manage infrastructure and operations use Kanban, while those in more creative industries, such as user experience and marketing, prefer design thinking.

Since design thinking is tied to the creative process, it's possible that it's more appealing to artistic groups, whether or not it's as effective as any other framework.

Schliep says design thinking is "better at discovering the problem than Scrum. Scrum is good if you know the problem, but you do not know the exact solution." However, he thinks most frameworks are essentially the same, and that the difference is in name only.

Ultimately, it may come down to choice. "Agile companies of today have a rich tool box of approaches that are suitable for different types of challenges," Schliep says. "It's more a question of preference."

The forecast of Scrum remains positive

Whether companies use Scrum exclusively or use a variety of Agile approaches, the outlook for Scrum is favorable. Just as they responded in 2015, virtually all 2016 survey respondents (98%) say they plan to use Scrum moving forward.

Argue predicts that Scrum will continue to push boundaries into other industries and go deeper into departments within companies. "It will be the catalyst to causing an organization to become an Agile organization." Schliep foresees early education and universities adopting Scrum to prepare students to enter a workforce where Scrum has become more mainstream.

Different Agile Approaches

- 89% of respondents report that Scrum is at least one of the Agile approaches used in their organization.
- 60% use Scrum and other approaches, up from over half (55%) in 2015.
- 32% report using Scrum exclusively, down from 43% in 2015.
- Other common frameworks used:
 - Kanban
 - Traditional Waterfall
 - Hybrid of traditional Waterfall and Agile
 - Lean

Why Agile Transformations Fail

Not all companies succeed when they adopt Agile practices.

A *Harvard Business Review* report, "Agile Practice: The Competitive Advantage for a Digital Age," offers these reasons:

- **Time and effort.** Companies underestimate how long it will take to implement Agile.
- **Impact on business culture.** Management finds it hard to change from taskmasters to coaches and resource providers.

“The ability to prioritize, the ability to collaborate with a team, all these necessary skills and ancillary skills of facilitating and coaching will become more important in each work environment,” he says. “And all of these will, over the course of the next five to 10 years, show up more in university or college education.”

Indeed, that is already happening. There are K–12 schools in the United States, Canada, and Europe where children learn Agile practices. U.S. universities, such as Rutgers, the University of Virginia, and Northwestern University, offer courses in Agile or Agile project management. So do universities in Great Britain, Australia, and the Czech Republic.

But whether in education or business, it’s adopting Agile practices, such as innovation and collaboration, that can make or break a successful Agile transformation.

“Companies are going to continue to see that their ability to innovate in order to compete is going to rely on them figuring out how to experiment in a very short time frame,” Orrell says. “Those experiments will sometimes succeed and sometimes fail, but that’s the nature of innovation.”

“It’s that innovation that’s going to keep companies competitive.”

The Future of Scrum

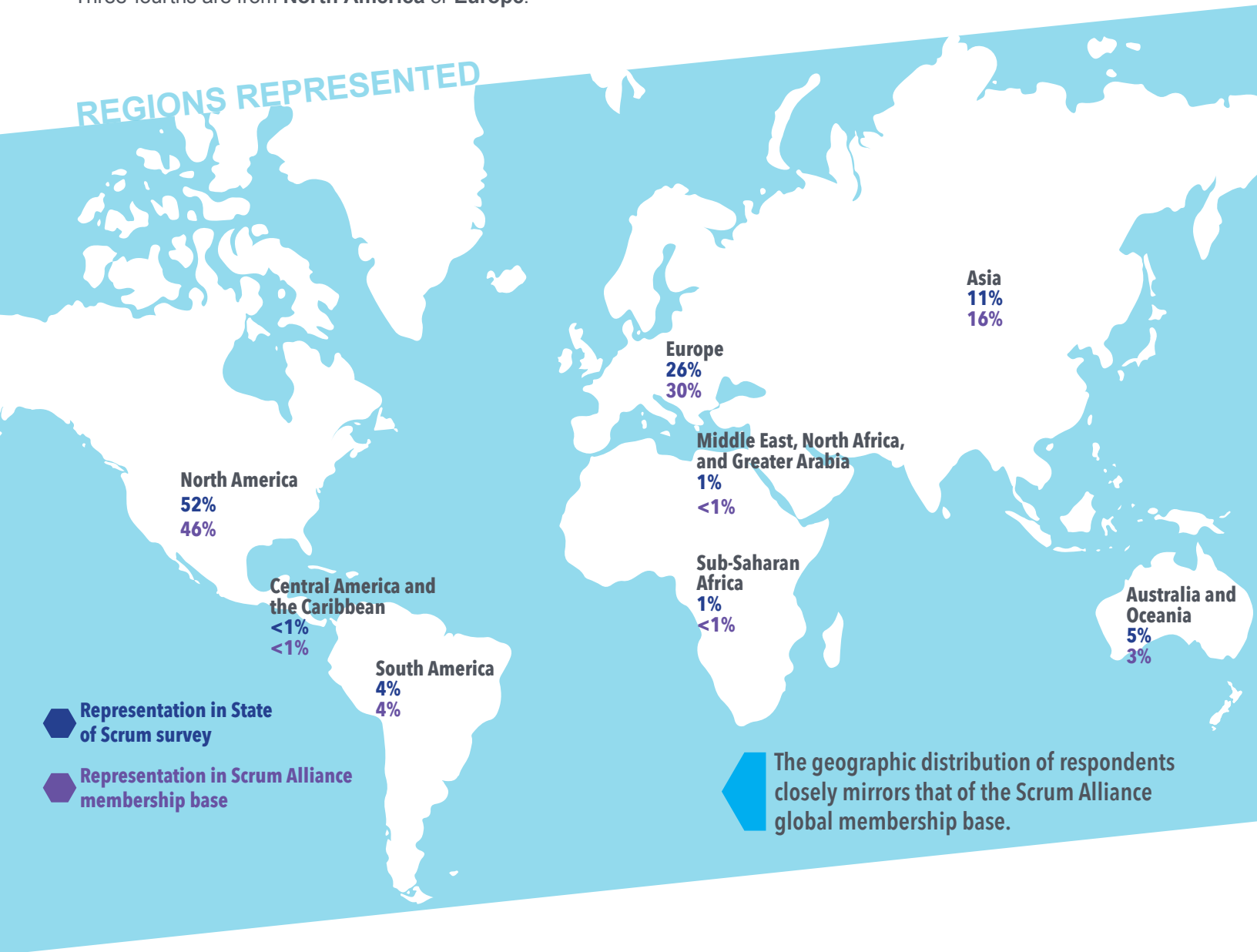
98% of respondents say they plan to use Scrum moving forward.



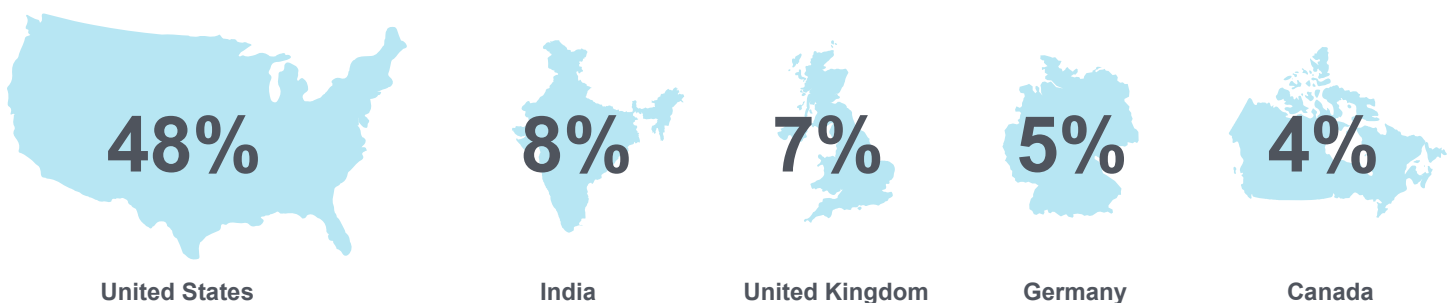
SECTION I: SURVEY RESPONDENT PROFILE

1. In which country are you located?

A total of 2,113 people across 76 countries responded to the survey. Three-fourths are from **North America** or **Europe**.



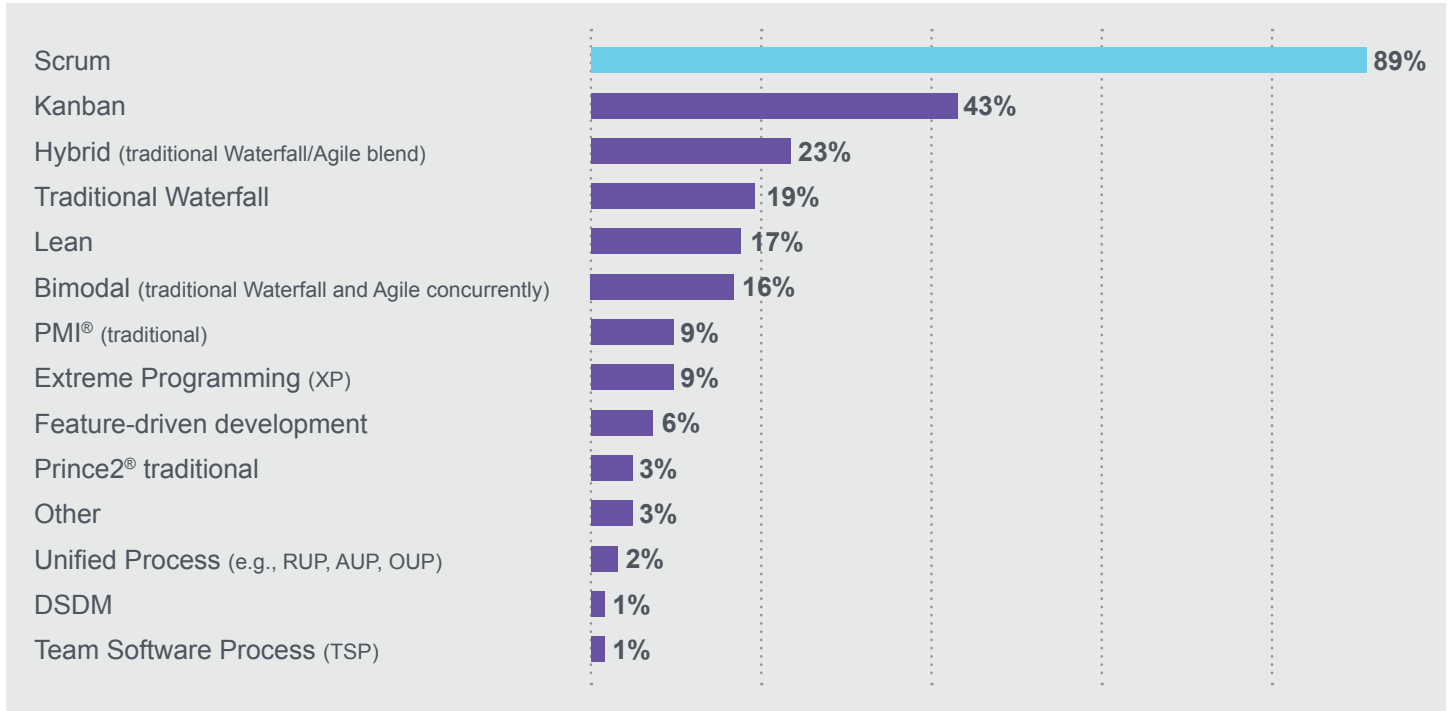
Top 5 Countries



2. Which Agile approach is your organization using?

(Multiple answers allowed)

Most respondents — 89% — report that Scrum specifically is the Agile approach or at least one of the Agile approaches used in their organization. (Ninety-two percent of respondents use any form of Scrum, including scaling Scrum frameworks, among their approaches.) Kanban is the second most common, followed by a hybrid approach, then traditional Waterfall. Lean, previously in third place at 21% in 2015, fell to 17% in 2016.



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

Number of Agile Projects per Respondent



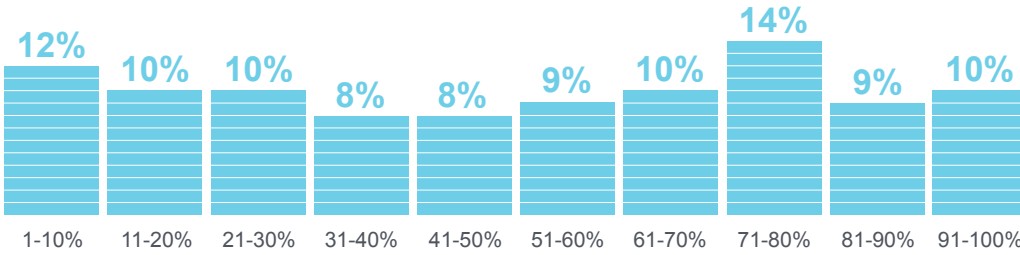
4. How would you describe the state of Scrum in your organization?

State of Scrum

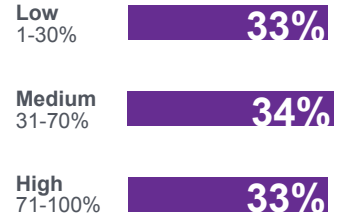


5. For what proportion of projects is Scrum used in your organization?

On average, Scrum is used for one-half of all projects delivered, with one-third reporting high usage levels of **71%–100%**.



AVERAGE USAGE OF SCRUM: 50%



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

More than half of organizations *recommend* certification, but less than 10% *require* it.

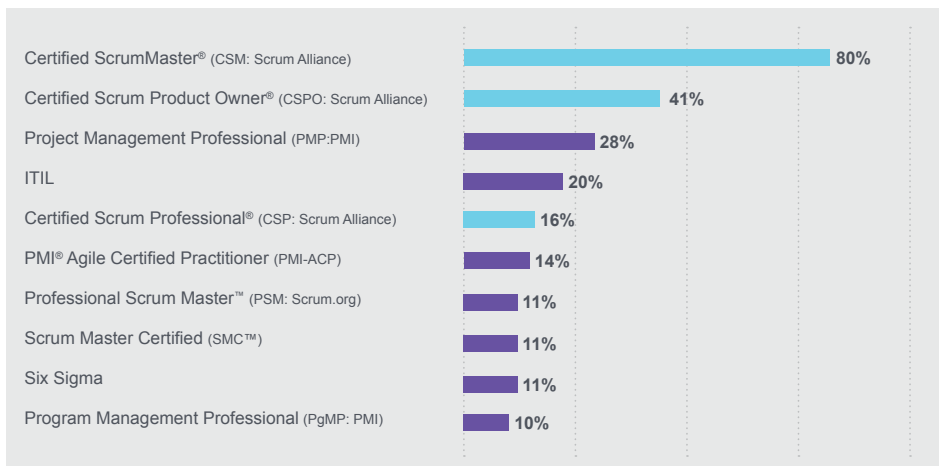
Our Organization . . .



7. Which certification(s) does your organization require? (Multiple answers allowed)

If requirements are in place, most organizations require Scrum certifications (91%), the Scrum Alliance CSM® and CSPO® being the primary types required. Over a third expect a project management certification, specifically a PMP. Other frequently required certifications include ITIL and PMI Agile Certified Practitioner.

Of organizations that require certifications, the average number of any certifications required is 3.4 per organization. ””



REQUIRED CERTIFICATIONS (NET)



7A. What is your organization's policy on the types of certification training it covers?

There is a clear-cut policy on the types of training covered, including reimbursable and out-of-pocket expenses, and other constraints.

66%

There's no policy on training activities, but it doesn't mean they don't encourage it. The budget is either limited or they can't spare the manpower.

29%

There is an explicit policy stating that they don't cover any training.

6%

8. Which certifications do you personally have? (Multiple answers allowed)

Certifications earned by respondents

| | |
|--------------------------------|-----|
| Scrum certifications only | 60% |
| Scrum and other certifications | 36% |
| Project management only | 1% |
| Have no certifications | 3% |

| | |
|---|------------|
| NET: Scrum | 96% |
| Certified ScrumMaster® (CSM: Scrum Alliance) | 83% |
| Certified Scrum Product Owner® (CSPO: Scrum Alliance) | 28% |
| Certified Scrum Professional® (CSP: Scrum Alliance) | 10% |

| | |
|---|----|
| Professional Scrum Master™ (PSM: Scrum.org) | 3% |
| Leading SAFe 4.0 | 3% |
| SAFe® Program Consultant (SPC4) | 3% |
| Certified Scrum Developer (CSD: Scrum Alliance) | 2% |
| Scrum Master Certified (SMC) | 2% |

| | |
|--|----|
| Professional Scrum Product Owner (PSPO: Scrum.org) | 1% |
| SAFe® 4.0 for Teams | 1% |
| LeSS (Large-Scale Scrum) | 1% |
| SAFe® 4.0 Advanced Scrum Master | 1% |
| Scrum Product Owner Certified (SPOC) | 1% |
| SAFe® 4.0 Product Manager/Product Owner | 1% |
| Certified Agile Leader (CAL: Scrum Alliance) | 1% |
| Scrum Fundamentals Certified (SFC) | 1% |

| | |
|--|----|
| Certified Team Coach (CTC: Scrum Alliance) | 0% |
| Scrum Developer Certified (SDC) | 0% |
| Expert Scrum Master Certified (ESMC) | 0% |

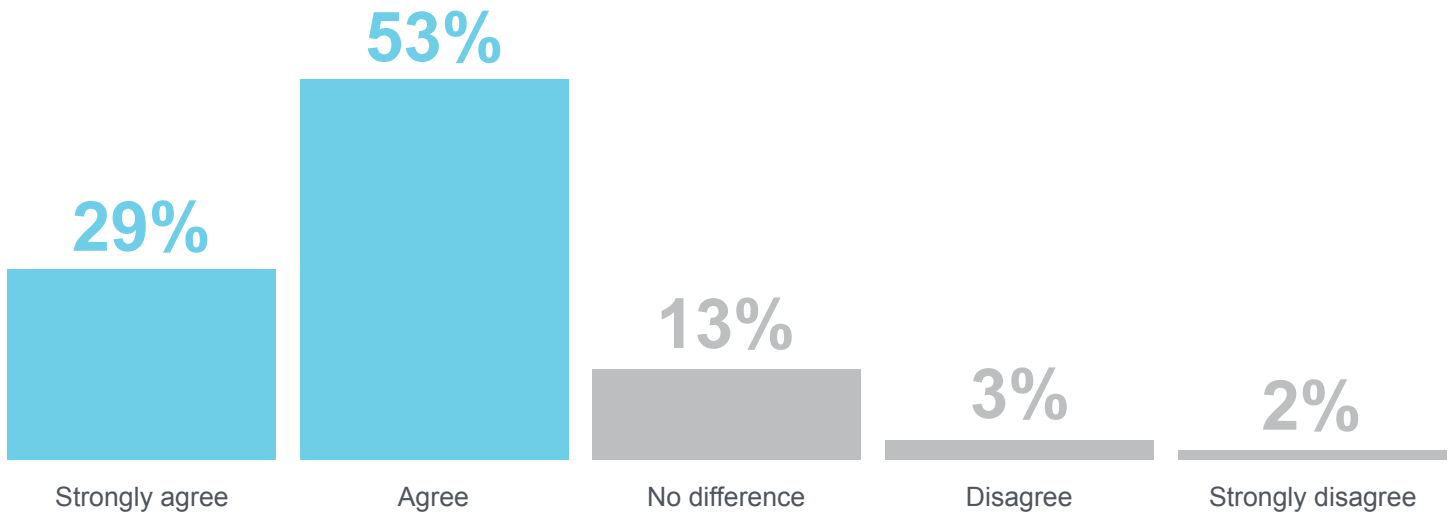
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|---|------------|
| NET: Project Management | 30% |
| Project Management Professional (PMP: PMI) | 17% |
| ITIL | 11% |
| Six Sigma | 6% |
| Prince2 | 5% |
| Program Management Professional (PgMP: PMI) | 1% |

| | |
|---|-----------|
| NET: Agile | 8% |
| PMI® Agile Certified Practitioner (PMI-ACP) | 5% |
| ICAgile Certified Professional | 2% |
| SAFe Agilist | 1% |
| ICAgile Certified Agile Coach | 1% |
| Leadership Agility 360 | 0% |
| SCRUMstudy Agile Master Certified (SAMC) | 0% |

| | |
|-----------------------|-----------|
| NET: Other | 6% |
| The Leadership Circle | 0% |
| The Leadership Gift | 0% |
| Other | 6% |
| No certification | 3% |

9. Obtaining Scrum certification has improved the process and practices of Scrum.

Most respondents see the value in certification: **82% agree or strongly agree** that it has enhanced their practice of Scrum.

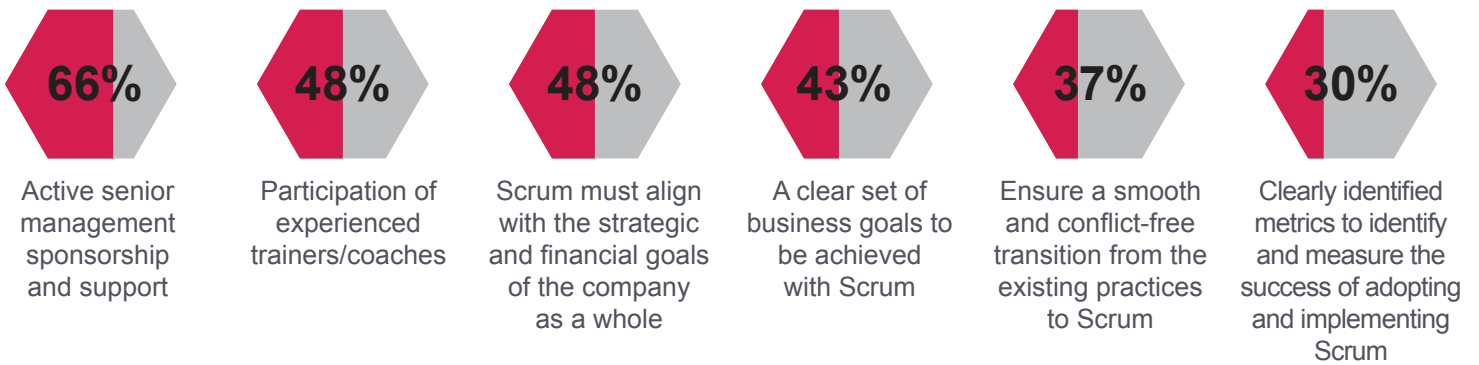


SECTION II: SCRUM ADOPTION

10. When your organization was adopting Scrum, which of the following considerations were important? (Multiple answers allowed)

Senior management support outweighs other factors, but the participation of experienced trainers/coaches and alignment with the organization’s strategic and financial goals share second rank.

Key Success Factors When Adopting Scrum



11. How would you describe the culture of your organization to facilitate Scrum? (Multiple answers allowed)

Two-thirds of respondents (66%) report that their Scrum teams are included in work effort estimates and ordering the product backlog. Almost half (49%) observe that senior management is supportive of Scrum.

Organizational Culture



12. The highest business priority for Scrum projects is:

Respondents report that customer satisfaction and improving time to market are the most important business priorities for Scrum projects. One in five respondents rank the following as important as well: meeting budget, time, and scope constraints.

Highest Business Priority for Scrum



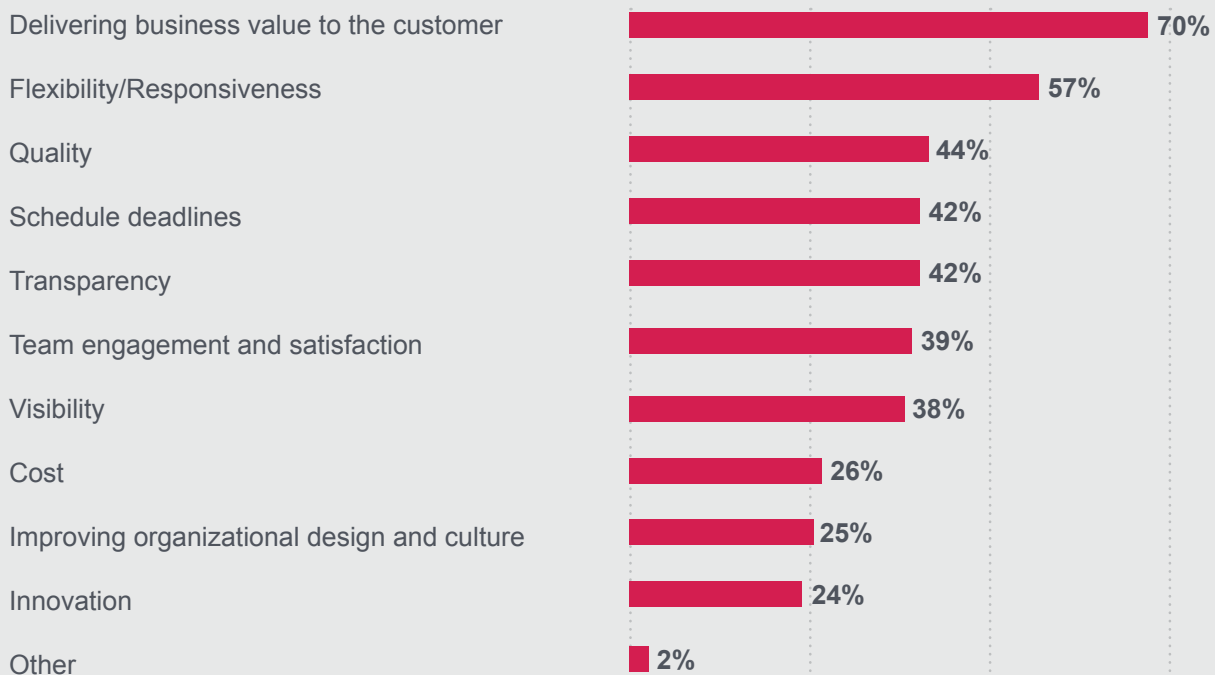
13. Which areas would you say were valued most by your organization's executives for delivery of Scrum-based projects?

(Multiple answers allowed)

Although down from 80% in 2015, delivering value to the customer (70%) continues to be the most important outcome for Scrum projects. More than one-half of respondents value flexibility and responsiveness.

When **Scrum** usage is high, delivering business value to the customer increases to 76%. Improving organizational design and culture also goes up, to 30%.

Valued Most by Executives for Scrum-Based Projects

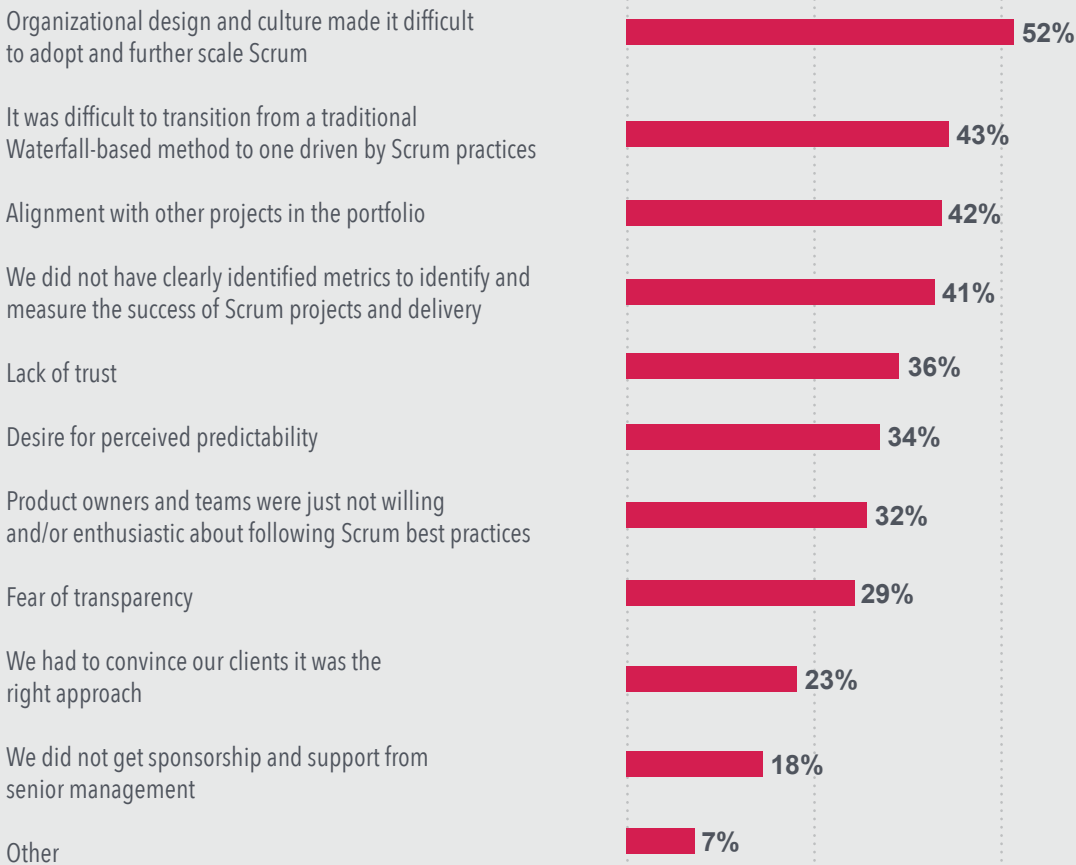


14. What are some of the challenges faced by your organization in achieving those values with Scrum? (Multiple answers allowed)

More than half of respondents said their organizations struggle with adopting Scrum to their culture. Over 40% report challenges in project alignment, clearly defining metrics, and the transition from Waterfall.

Larger companies with more employees struggle more with organizational culture, transition from Waterfall, and project alignment.

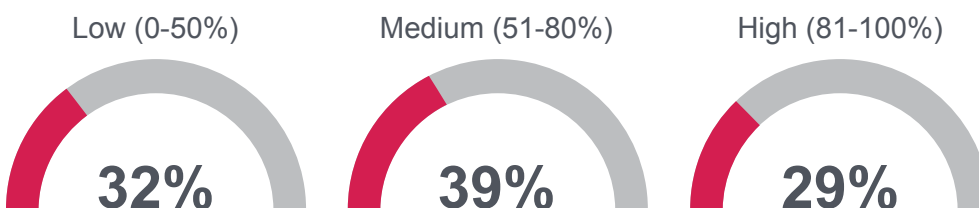
Challenges with Scrum



15. For all the projects in your organization that were managed using Scrum, what range would you estimate were successfully delivered using Scrum?

Scrum was successfully used more than half the time, according to 68% of the respondents.

Scrum Success

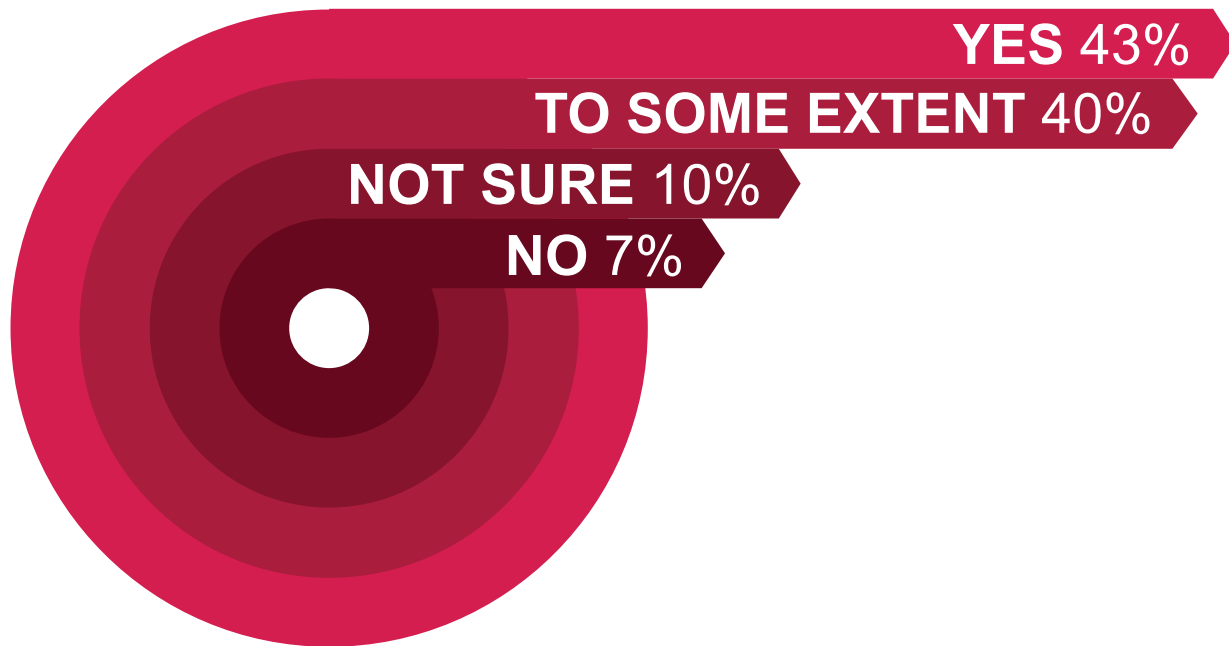


Successful Delivery of Scrum Projects

| | |
|----------|-----|
| 0% | 2% |
| 1%–10% | 7% |
| 11%–20% | 5% |
| 21%–30% | 6% |
| 31%–40% | 4% |
| 41%–50% | 7% |
| 51%–60% | 8% |
| 61%–70% | 11% |
| 71%–80% | 20% |
| 81%–90% | 17% |
| 91%–100% | 12% |

16. Has Scrum improved your team's quality of work life?

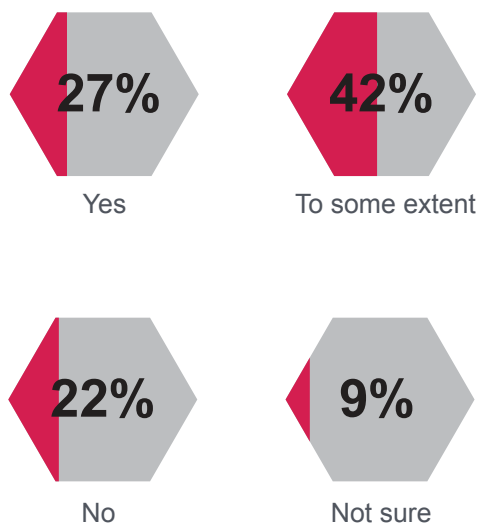
Improvement in Quality of Work Life



17 and 17A. Is there tension between the way Scrum teams are run and the way the rest of your organization is managed?

Two-thirds of respondents report that Scrum created at least some tension with the rest of the organization. However, the number of respondents who believe it created tension (to at least some extent) decreased 4% overall from 2015.

Tension Between Scrum Teams and Wider Organization



That Tension Is Due to . . .



18. How likely is it that your organization will continue to use Scrum?

The outlook for Scrum clearly remains favorable. Virtually all (98%) consider it likely that their organization will use Scrum in the future.

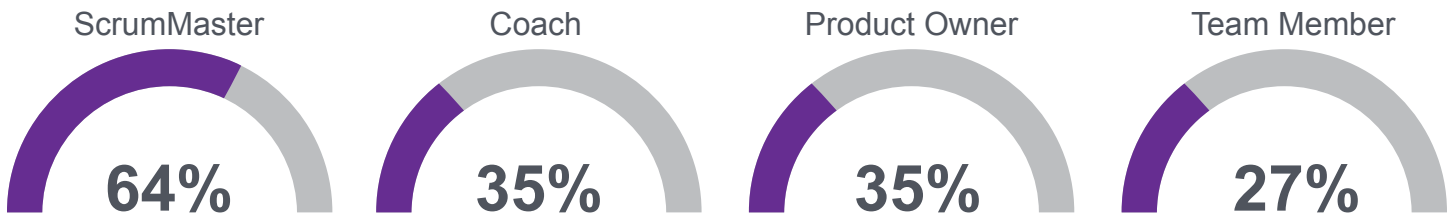
Will Continue to Use Scrum



SECTION III: SCRUM ROLES AND PRACTICES

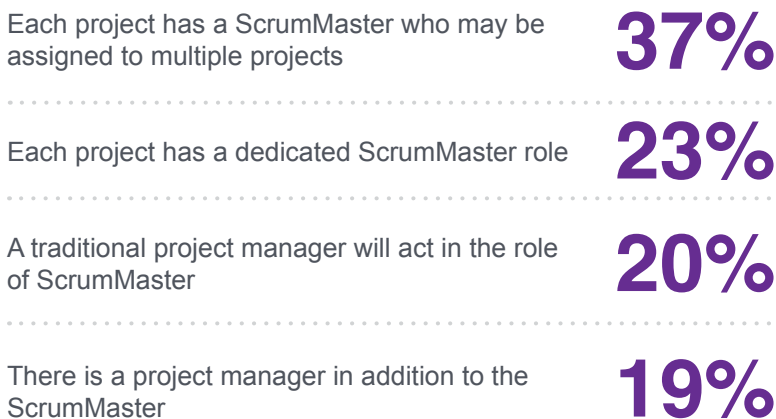
19. What is your role with a Scrum team? (Multiple answers allowed)

Scrum Roles



20. How would you describe the role of the ScrumMaster within your organization?

ScrumMaster Role

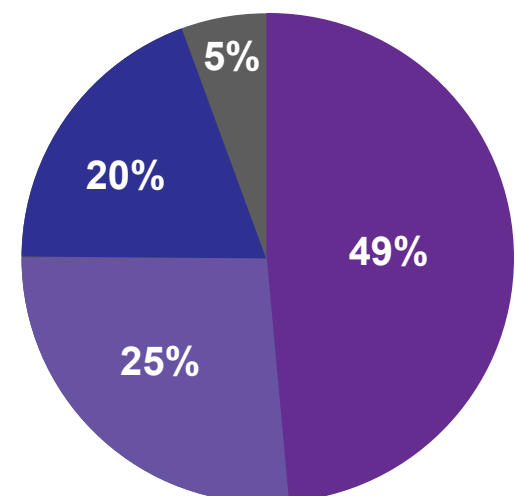
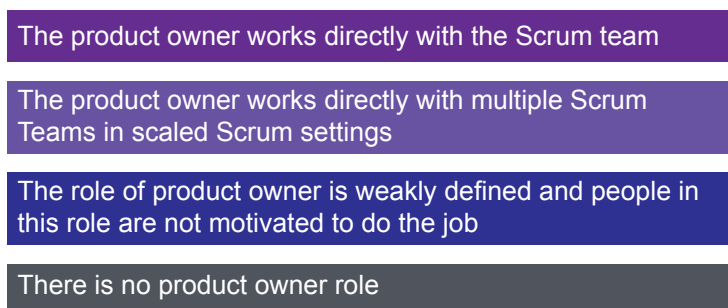


Traditional project managers are more likely to function as ScrumMasters when working for the government or in the IT industry.

21. How would you describe the role of the product owner within your organization?

One-half of respondents report that the product owner works directly with the Scrum team.

Product Owner Role



22. Where is your Scrum Team located?

State of the Scrum Team

The Scrum Team is distributed across different sites and/or geographic areas

54%

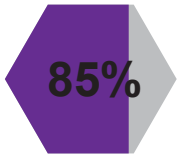
The Scrum Team is colocated

46%

23. Which individuals working with the Scrum Team are certified?

(Multiple answers allowed)

Certification Across the Organization



ScrumMasters



Product Owners



Coaches



Scrum Teams

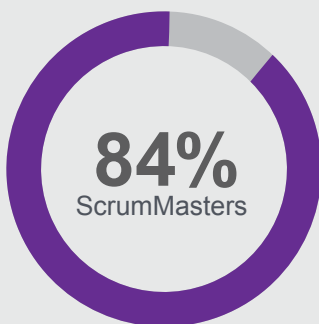


None of the above

23A. Which team members have received multiple-day training?

(Multiple answers allowed)

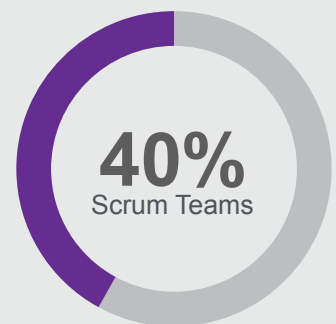
Multiple-Day Training Across the Organization



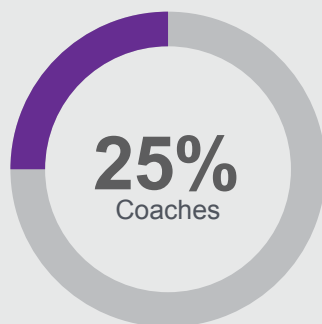
ScrumMasters



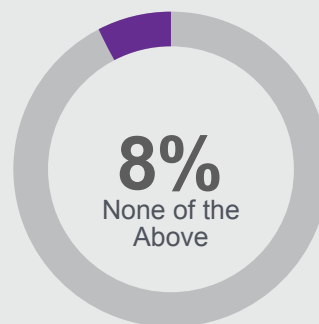
Product Owners



Scrum Teams



Coaches



None of the Above

24. Which of the following describes the training and coaching options at your organization?

(Multiple answers allowed)

Training and Coaching Options



24A. Which of the following in-house options are available?

(Multiple answers allowed)

In-House Training and Coaching Options

An in-house Scrum coach/trainer is available



An outside Scrum coach/trainer can be consulted



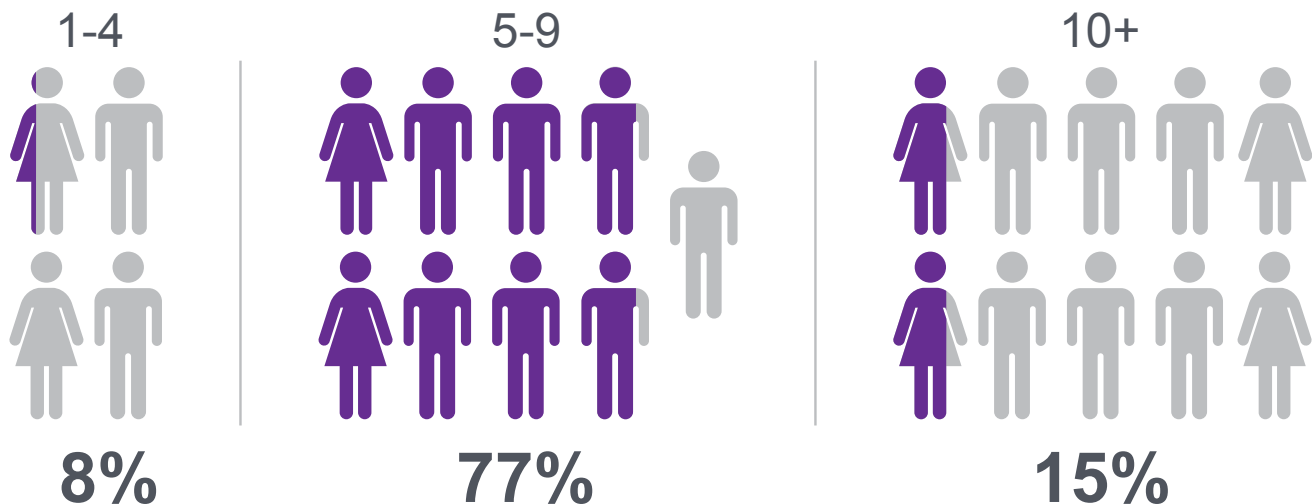
Our organization has employed a full-time coach/trainer



25. How many people are typically on the Scrum Team?

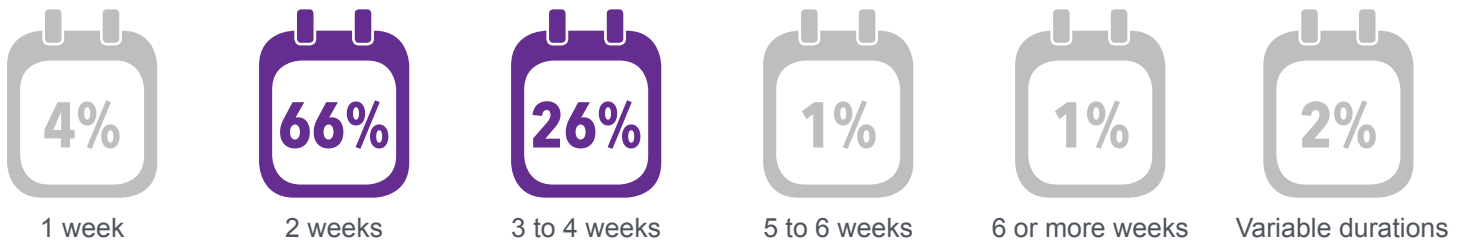
Team Size Average: 7.5 Members

In Scrum, it is a general recommendation that teams have seven members, plus or minus two.



26. How long do your sprints typically run?

Sprint Length



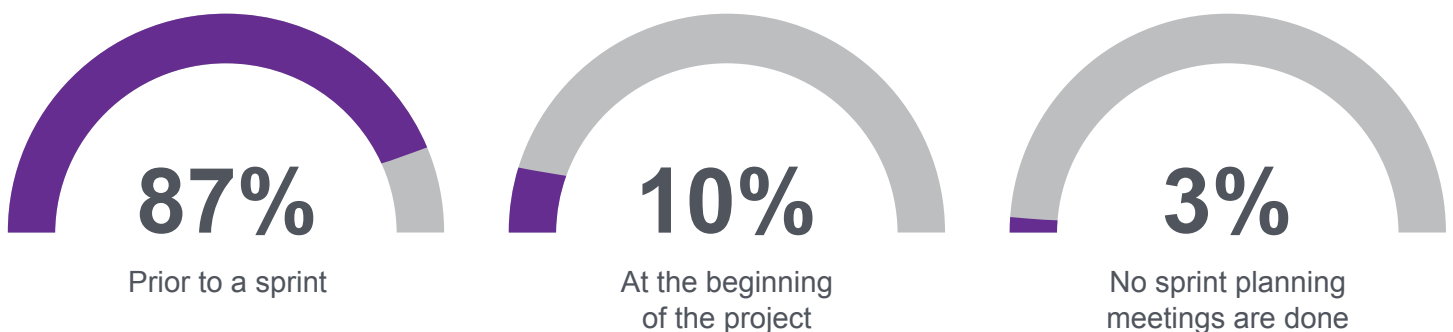
27. How many sprints are typically completed in a Scrum project or before your team releases to a customer?

Number of Sprints



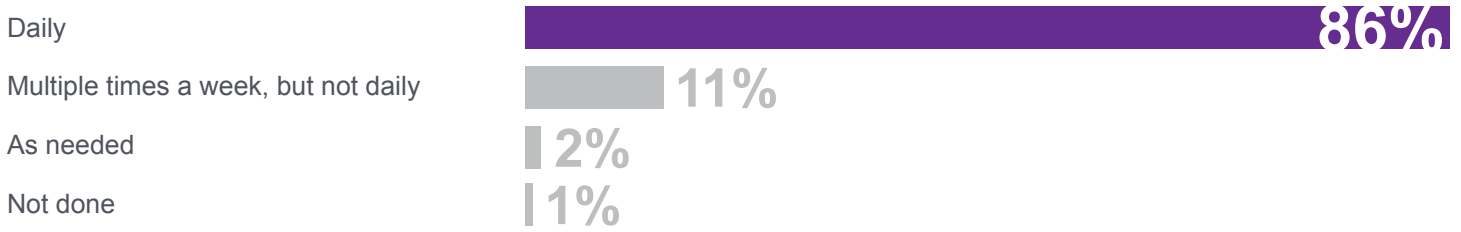
28. When does your team hold sprint planning meetings?

Sprint Planning Meetings



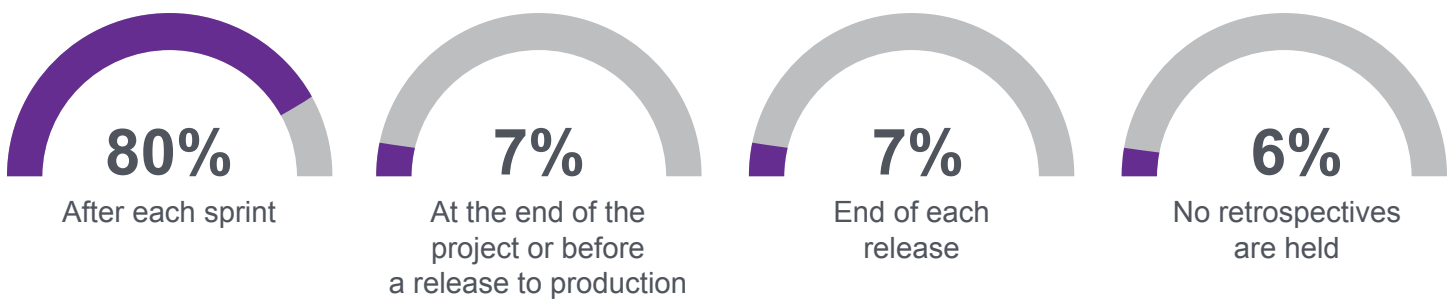
29. How often does your team hold daily Scrum meetings?

Scrum Meetings



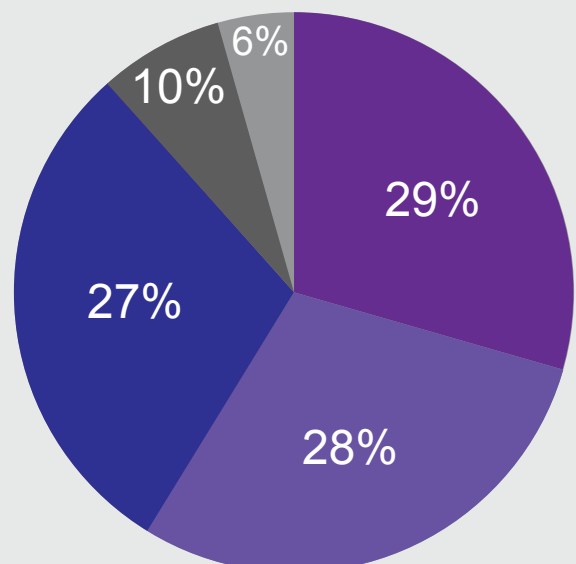
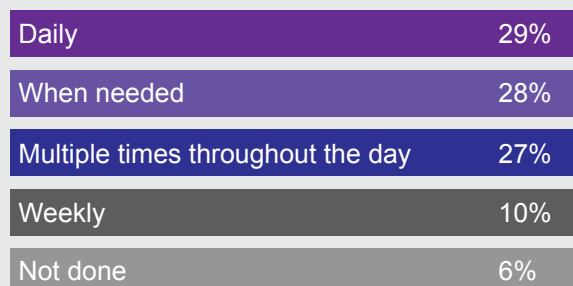
30. When does your team hold retrospectives?

Retrospectives



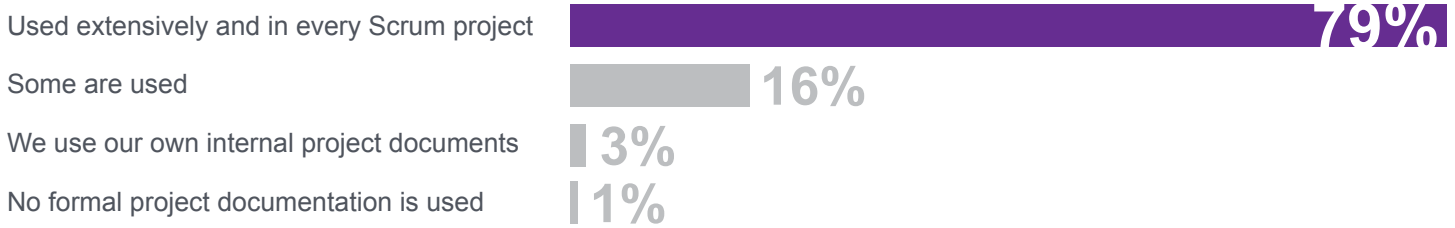
31. How often does your team engage in testing and continuous integration/build?

Testing and Continuous Integration Build



32. How often are Scrum artifacts, such as the product backlog and sprint backlog, used?

Scrum Artifacts



33. Which of the following Agile engineering practices are used in your Scrum projects and processes?

(Multiple answers allowed)

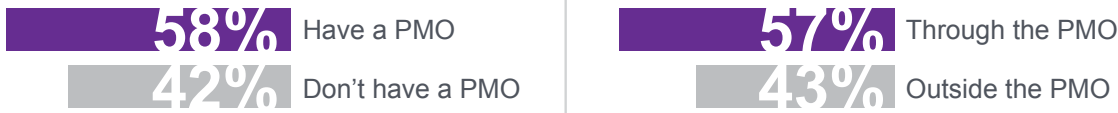
Used in Scrum Projects and Processes



34. If your organization and/or department has a PMO, are Scrum projects deployed and managed through it?

More than half of respondents (58%) have a PMO within their organization. The majority of those deploy and manage Scrum projects through the PMO.

PMO



PMOs are less common in industries such as hardware/software development, media and entertainment, and information technology.

35. If your Scrum projects were deployed and managed through a PMO, how effective and successful were they?

Nearly all projects managed through the PMO were rated as effective and successful or somewhat effective and successful.

Success of Scrum Projects



36. Do you have an existing traditional Waterfall method in place?

More than one-half of organizations have an existing traditional Waterfall method in place.

Traditional Waterfall in Place

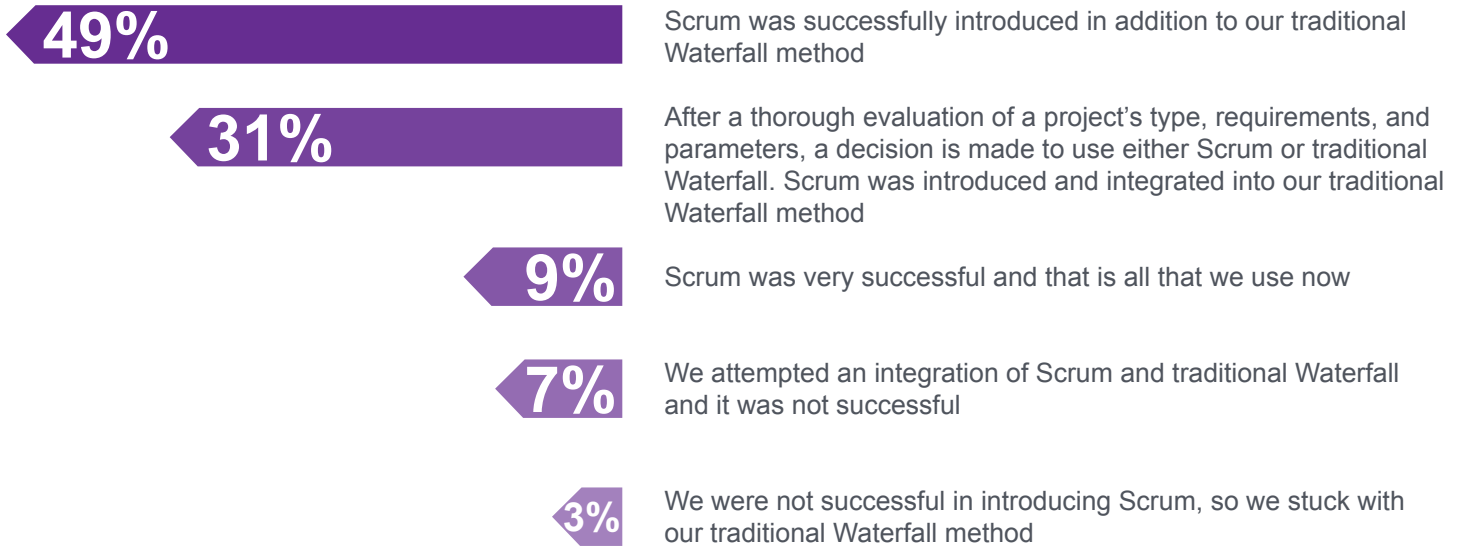


37. With the existing traditional Waterfall method in place, what was your experience when Scrum was introduced?

Most organizations (80%) with an existing traditional Waterfall method use Scrum as well.

Traditional Waterfall methods are more likely to be in place in industries such as government, manufacturing, telecommunications, and finance/banking.

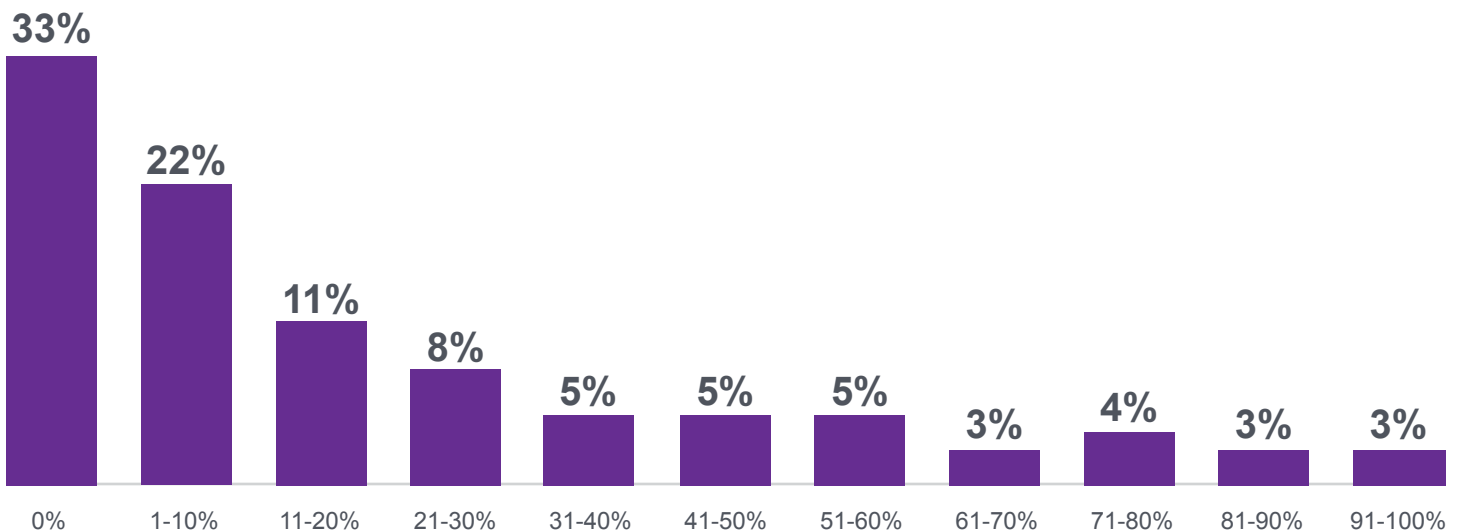
Experience with Scrum and Traditional Waterfall



38. If Scrum is being used outside of IT in your organization, in what range of all the projects being run in your organization would you estimate it to be? (Multiple answers allowed)

In a typical organization, 21% of all Scrum projects are run by departments outside of IT.

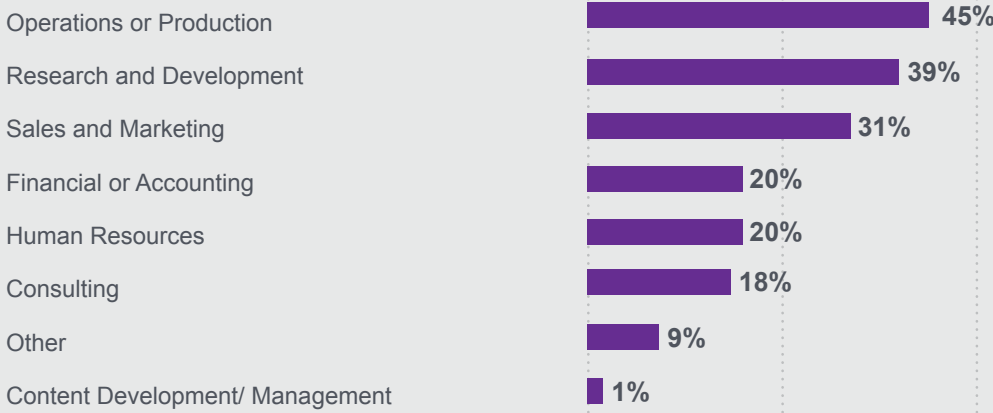
Scrum Projects Outside of IT vs. Total



39. Outside of IT, which departmental areas run Scrum projects?

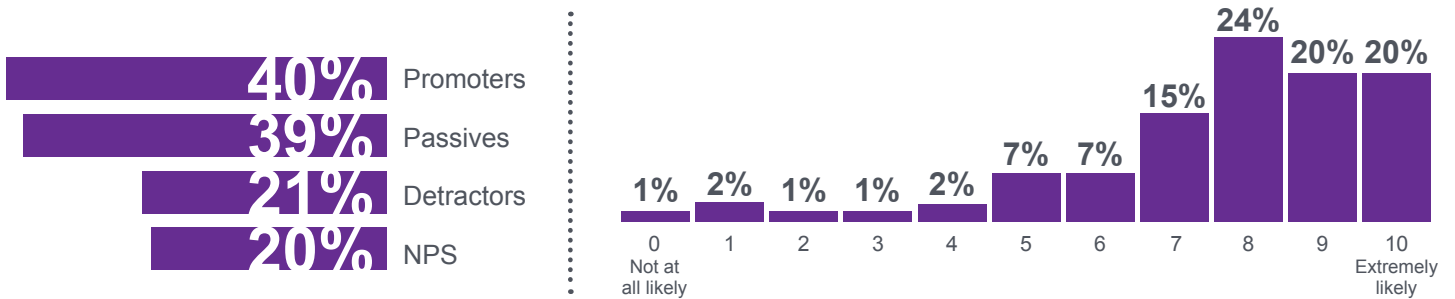
Nearly one-half of respondents with projects outside of IT reported that operations or production constitute the primary non-IT area using Scrum for projects. While research and development ranked second (39%), it declined significantly from 47% in 2015.

Departments Other Than IT Using Scrum

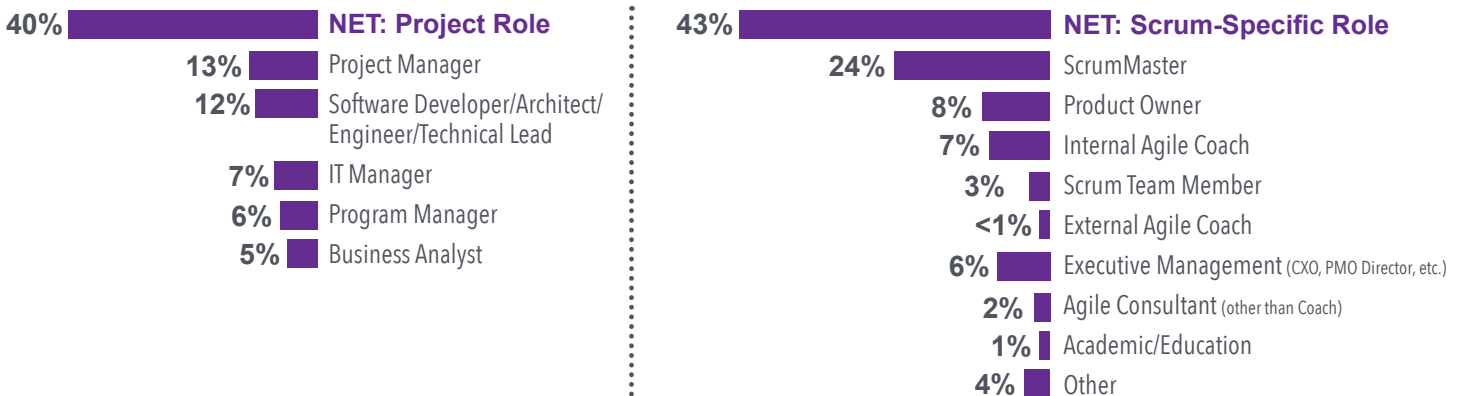


39A. How likely are you to recommend Scrum Alliance as a professional membership and certification organization to your colleagues and friends?

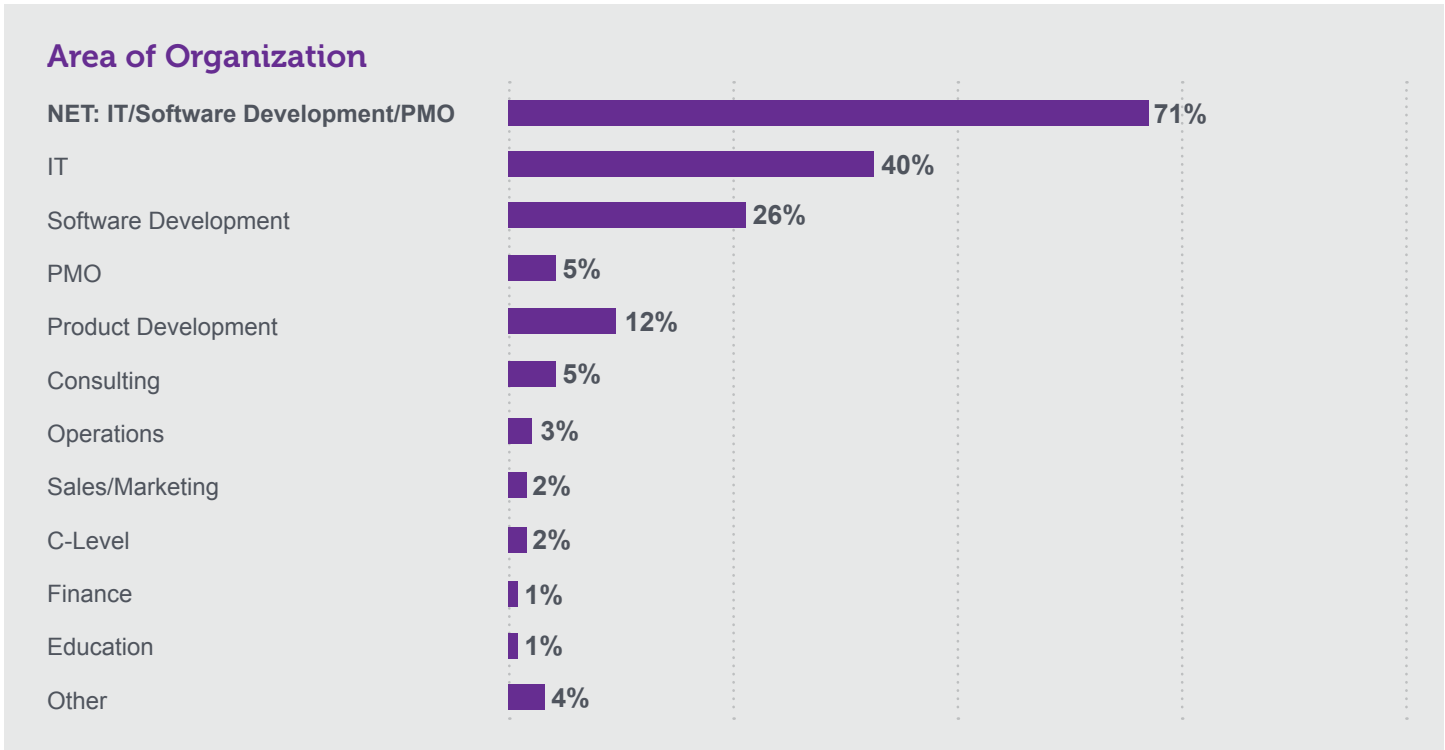
Scrum Alliance Recommended



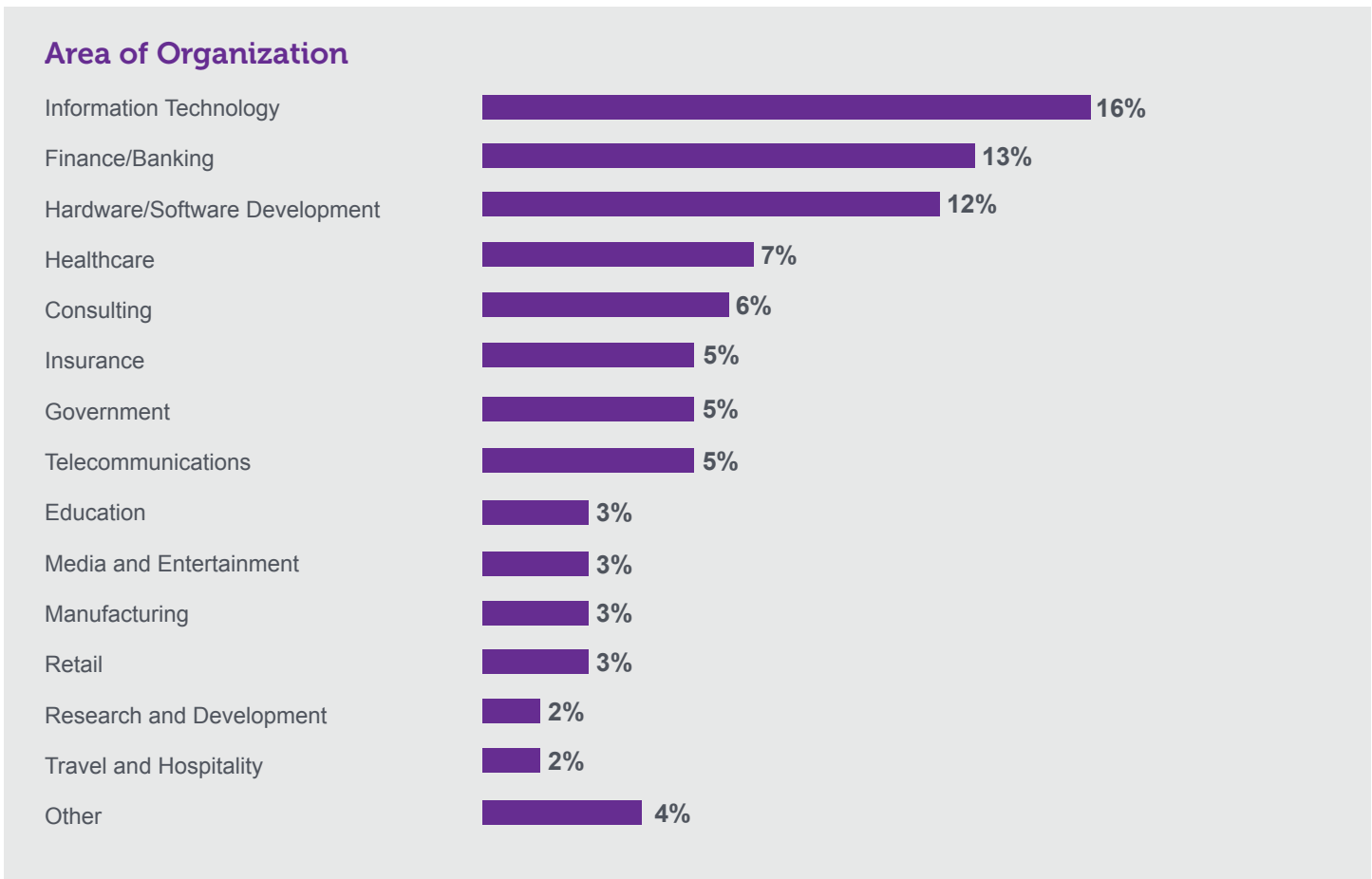
40. What is your primary role in your organization?



41. Which area of the organization do you work within?

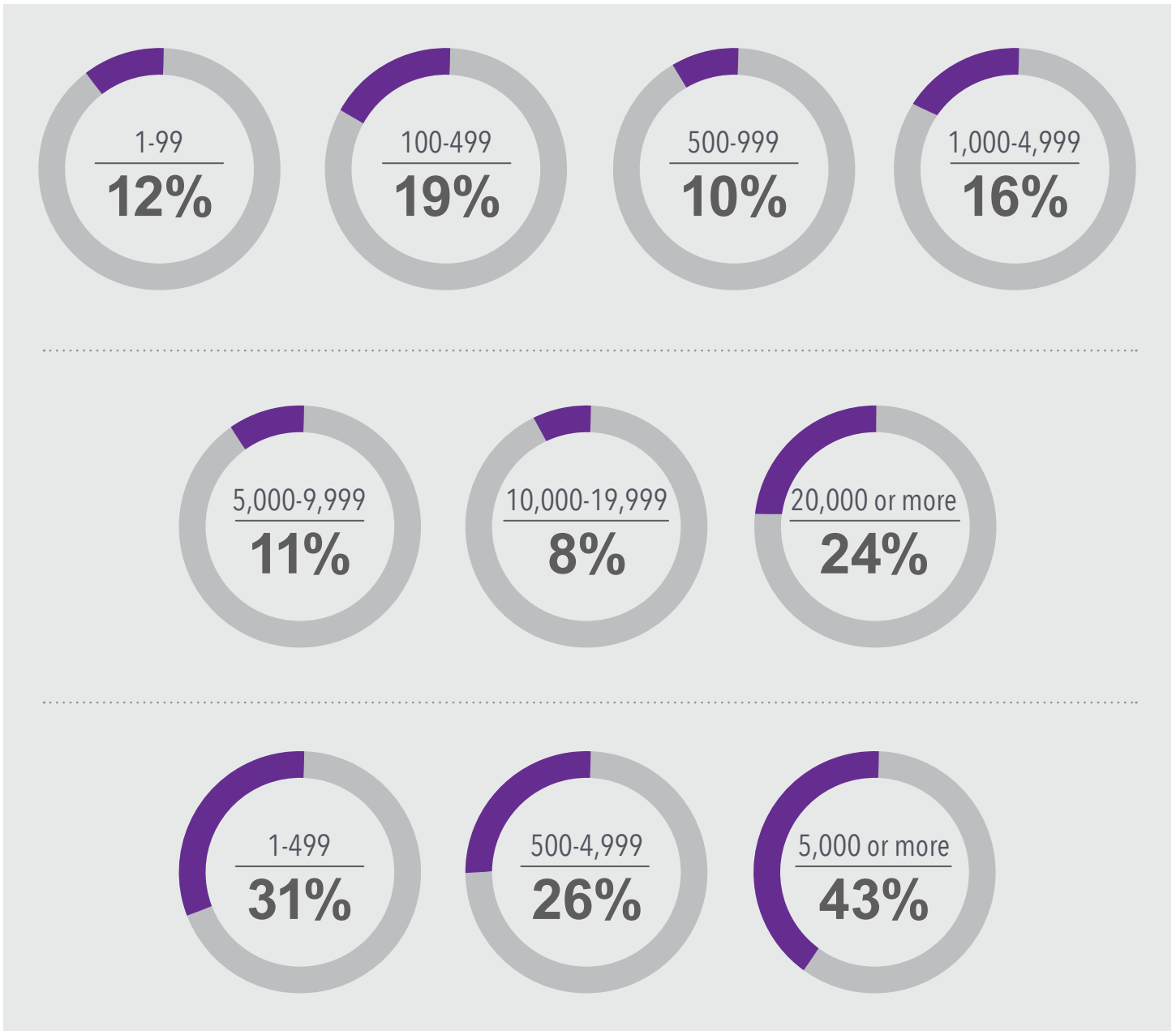


42. In what industry are you employed?



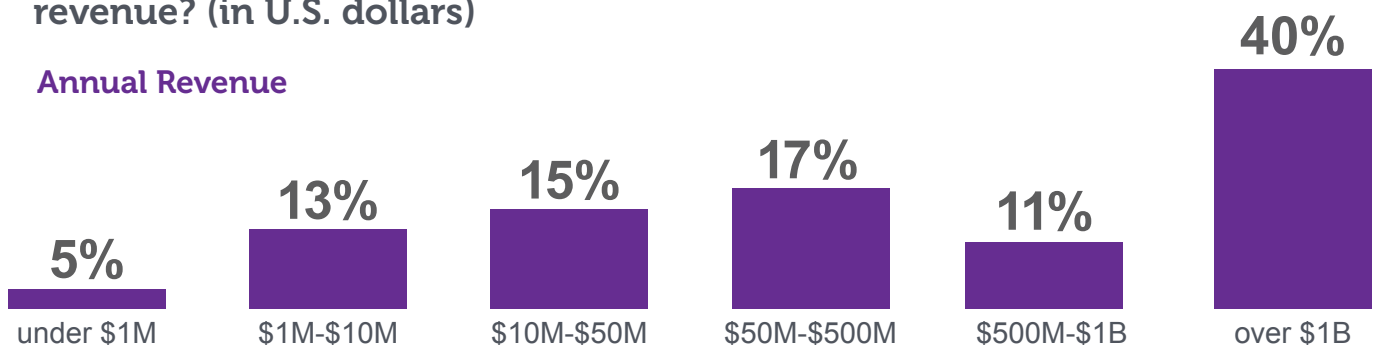
43. How many employees work at your organization?

Number of Employees



44. What is your organization's approximate annual revenue? (in U.S. dollars)

Annual Revenue



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