2025

State of Digital Quality in Functional Testing

Trends in functional testing, insights from software development and testing professionals, and ways to deliver better quality apps.



APPLAUSE

Experts have long predicted that automation and AI would reduce the need for humans in a variety of roles – including software testing and QA. Over the last few years, AI and automation have become more widely used in development and testing, yet humans remain essential to the process. While AI and code assist can help speed release velocity, the code AI produces isn't necessarily flawless. And despite promises that agentic AI may help establish and maintain automated testing, AI and automation alone cannot provide the comprehensive, end-to-end test coverage that enterprises demand.

Teams must validate that software features and functions operate as intended across various devices and configurations, meet requirements, and perform the way users expect. The methods and tools that teams use to complete those tests are constantly evolving. In this year's State of Digital Quality in Functional Testing report, we look at some of the shifts taking place as organizations work to more efficiently bring high-quality digital experiences to market.



Executive summary

There's no universal definition of — or single path to — digital excellence. Yet, most people recognize it when they experience it: everything works easily, with no friction or flaws. Users can carry out their missions efficiently and intuitively. The complex seems clean and simple. Consistently releasing apps that meet customer expectations demand constant assessment and evaluation of apps themselves, as well as internal tools, processes and capabilities — not to mention user expectations. It's a complex formula that's constantly shifting. Here's what organizations are doing today to ensure their functional testing efforts pay off.

- **Organizations are blending a variety of quality assurance methods, testing types and metrics to assess digital quality.** More organizations are testing and collecting feedback throughout the SDLC: While our previous survey found that 41.7% only tested and gathered feedback at the testing stage of the SDLC, this year just 14.7% said they limit testing to a single stage. The most common testing types include UX, usability and UAT — realms where human input is a crucial part of the process.

- **AI is rapidly becoming more deeply integrated into testing.** In many cases, AI is now enabling teams to create and maintain automation scripts. Teams are also turning to AI to help them improve coverage, prioritize test cases based on risk and usage patterns, and recommend improvements to test plans and code. Organizations rely on human staff to implement AI, train the systems, and evaluate (and often act on) AI outputs.

- **Despite the efficiencies AI and automation can provide, many teams still find it challenging to test adequately before release.** Lack of time for sufficient testing was the most prevalent testing challenge (36.8% of 1,716 respondents). Other top challenges included testing in inconsistent/unstable environments (36.7%) and keeping up with rapidly changing requirements (34.8%).

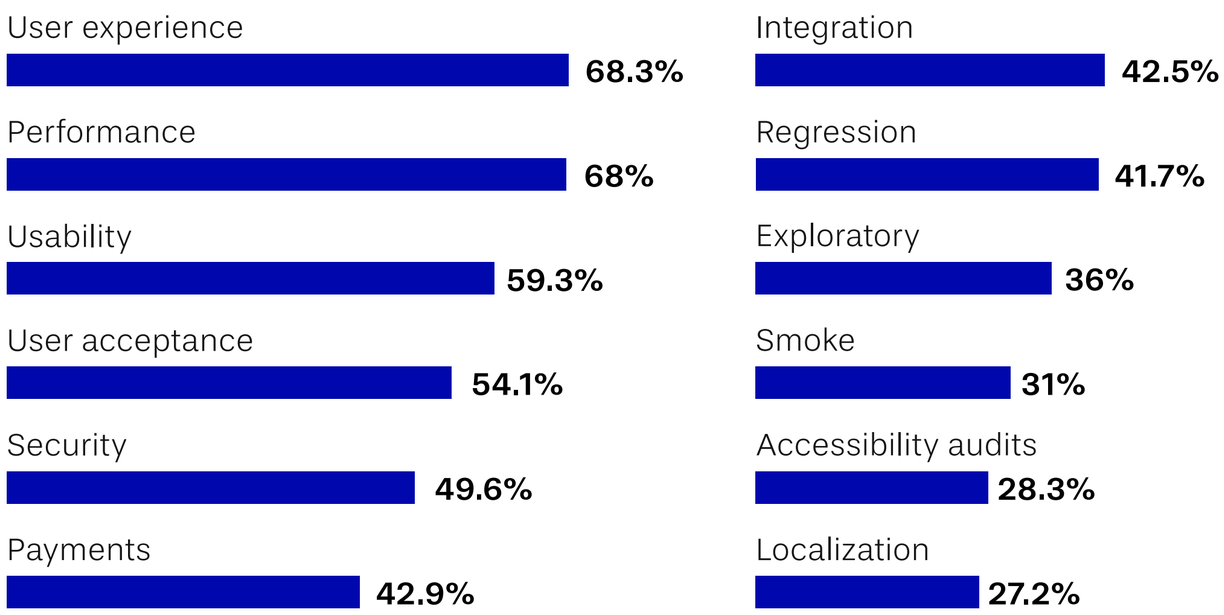
How organizations are measuring digital quality

10 most common quality indicators n= 2,439

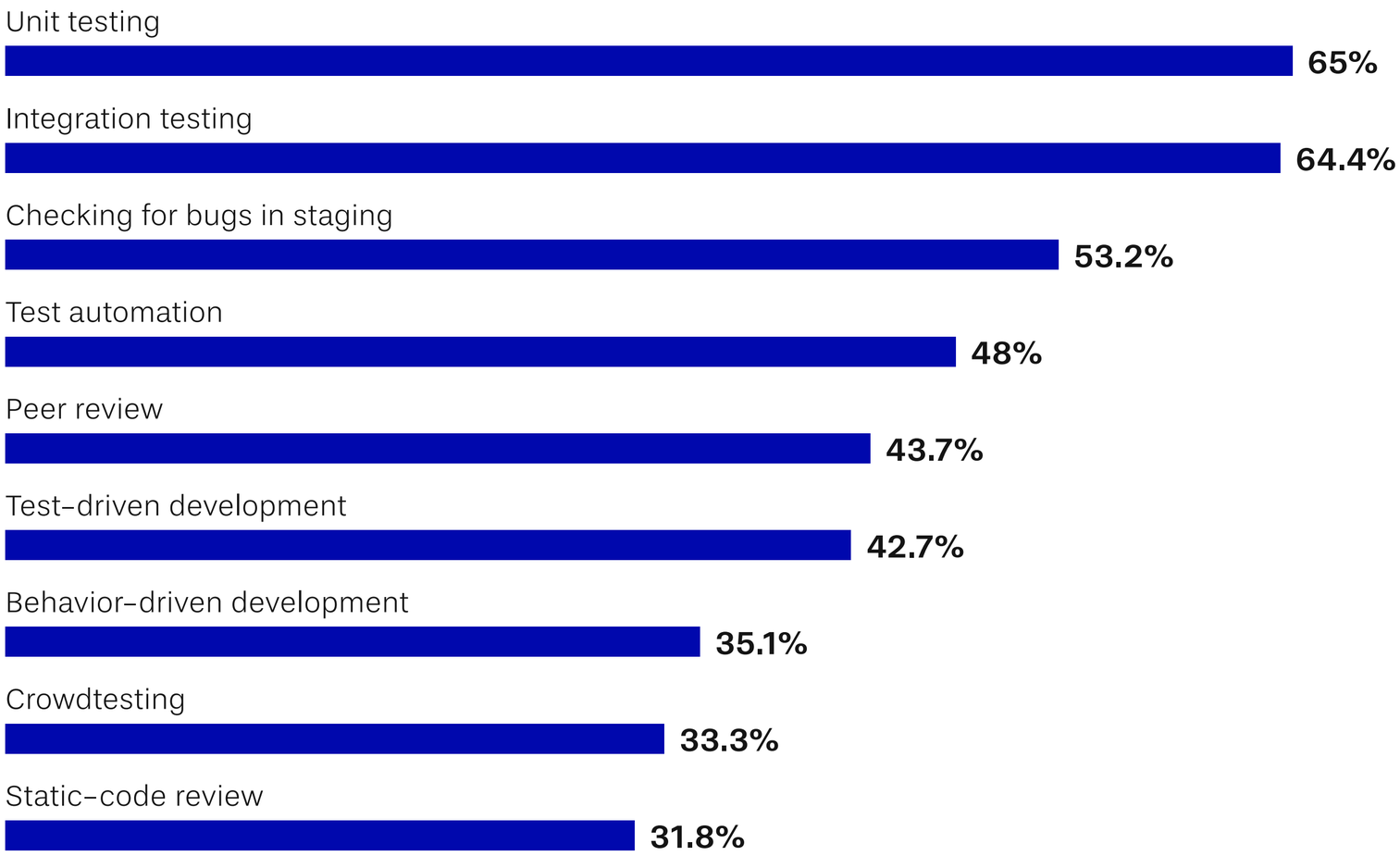
1. **Customer satisfaction research** 59.8%
2. **Customer sentiment/feedback** 51%
3. **Test coverage** 39.9%
4. **Number of customer support tickets** 39.4%
5. **Increase in activity (purchases, logins etc.)** .. 37.4%
6. **Number of defects reaching production** . 36.1%
7. **Engagement rates on websites/apps** 34.7%
8. **Revenue** 33.3%
9. **Customer retention & churn rates** 32.1%
10. **App store ratings** 29.1%

Organizations prioritize UX, usability and user acceptance testing to help them release relevant, intuitive digital experiences. While AI and automation can provide some assistance, there's no replacing human judgment and input on subjective decisions.

Types of tests organizations are conducting n= 2,361



The most common quality control activities n= 2,158



Finding the optimal mix

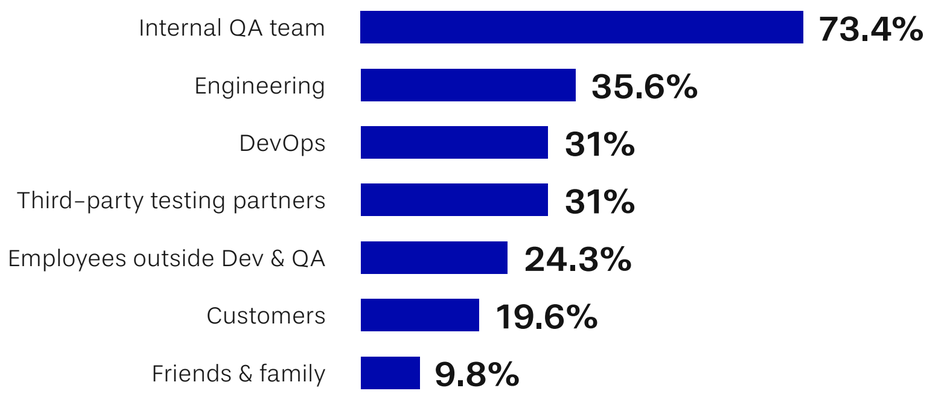
It's no secret that organizations that incorporate a variety of testing types and quality control measures throughout the SDLC find defects faster. When facing short deadlines and long to-do lists, however, many teams may be reluctant to add another test or checkpoint. If possible, analyze data to uncover the gaps in your strategy – where are you discovering the most critical and high-priority defects? What's the root cause? Can you reduce silos or tester fatigue to get a fresh perspective? You may uncover patterns that could be addressed with a relatively simple fix.

Software QA is not going away

Is AI changing the ways developers and test teams work? Yes. Is it going to eliminate the need for human testers? Not any time soon. Just ask AI – you'll most likely get a response emphasizing that AI is a tool, not a replacement. While AI changes how people work, it is not expected to completely replace human testers; it will simply shift their roles. As teams look to implement the optimal mix of testing types and QA measures, AI becomes another variable in the equation.

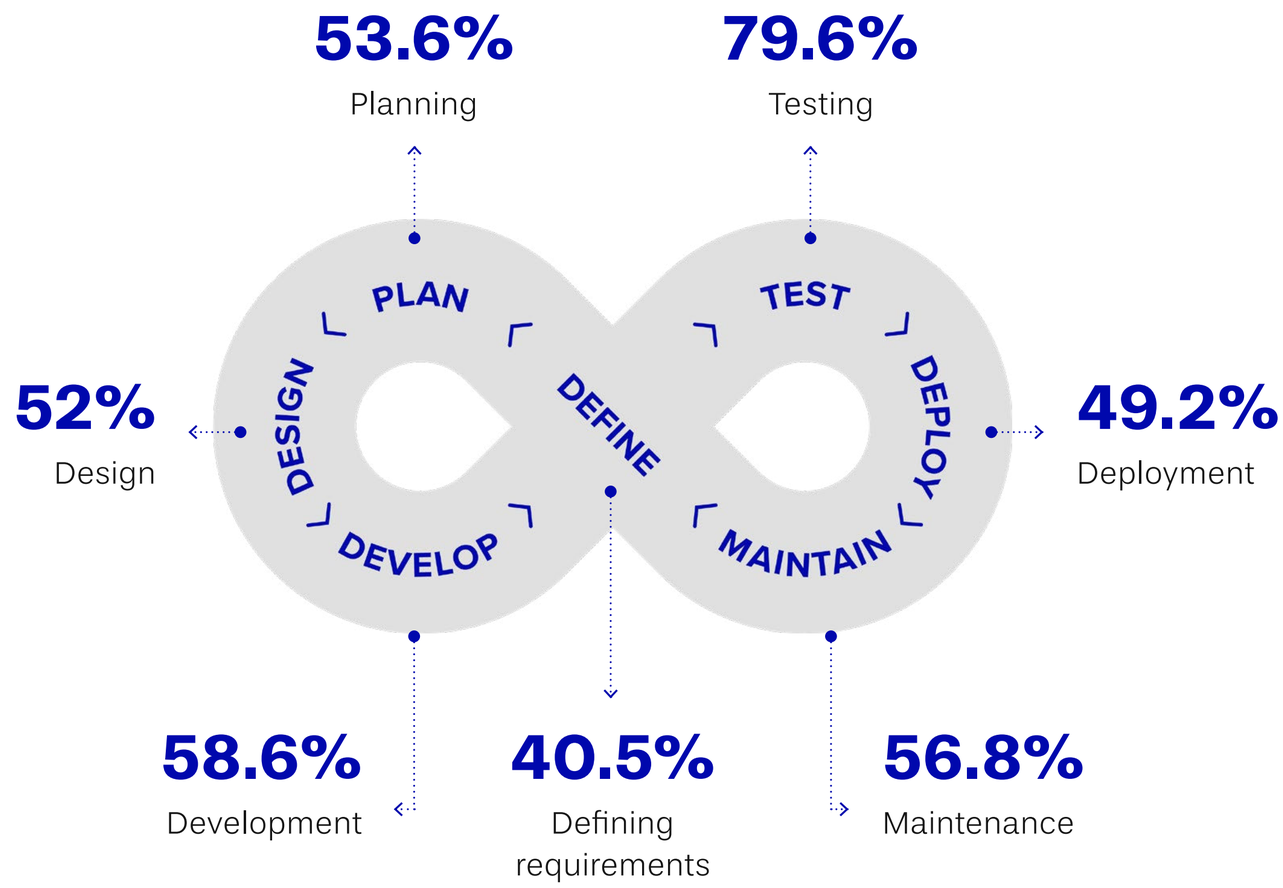
Who carries out testing

n= 2,087



Where in the SDLC teams are conducting testing and collecting feedback

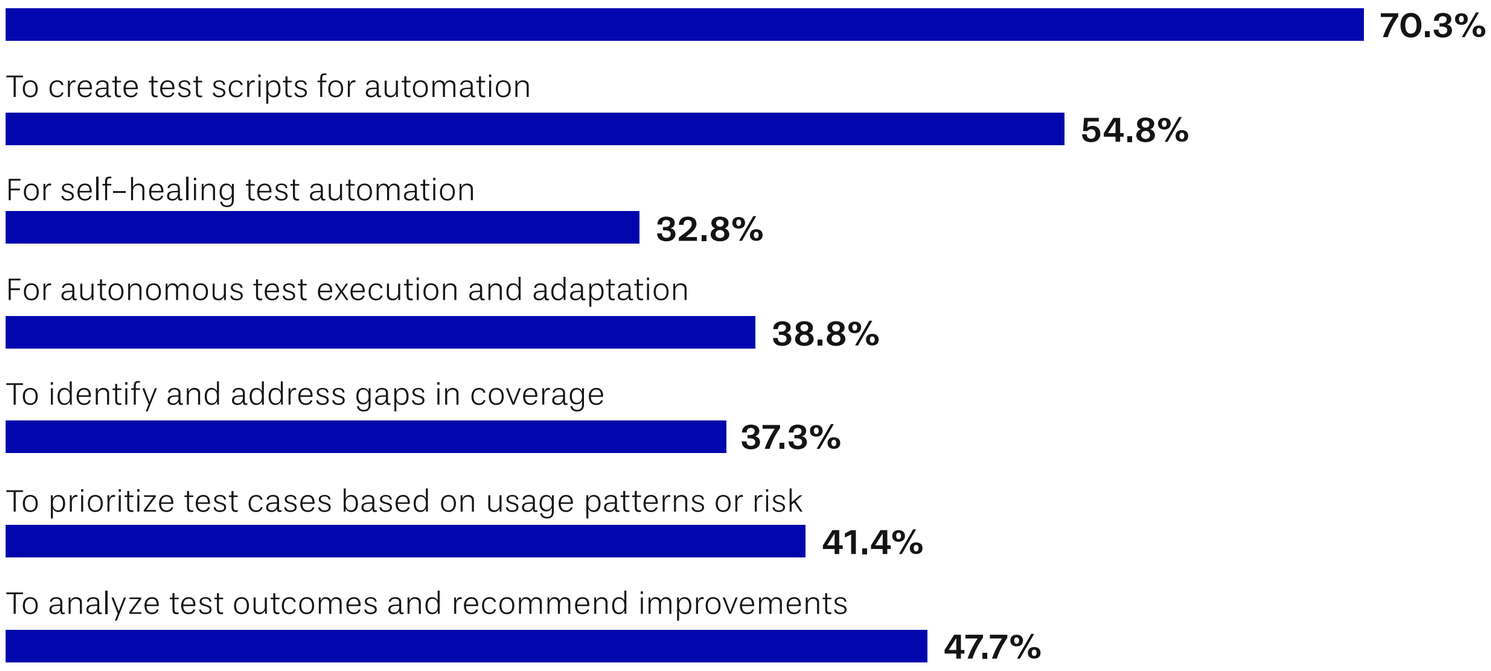
n= 2,101

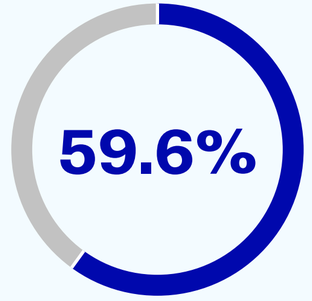


AI, data and documentation

Data and documentation help drive decisions and create consistency across the organization. Though teams may increasingly turn to AI for support, people still decide how to act on the data and which processes work best.

How teams are using AI in the testing process n=1,240





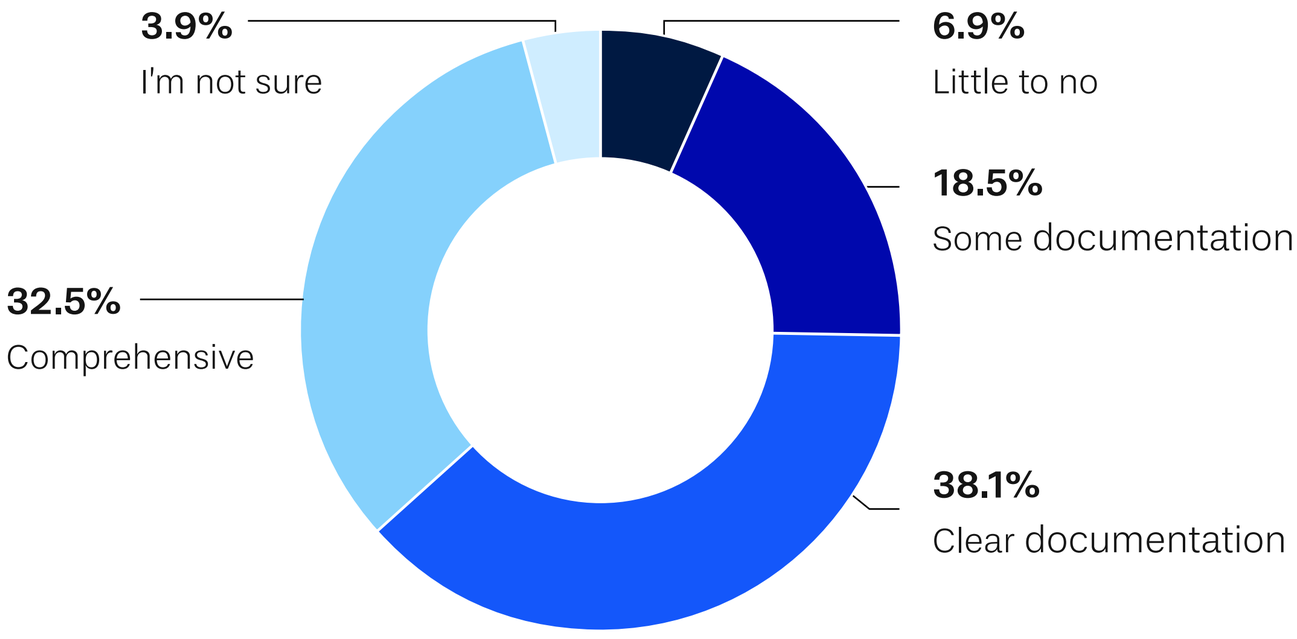
AI is rapidly becoming part of QA

In this year's survey, **59.6%** of 2,161 respondents reported that their organization uses AI in the testing process.

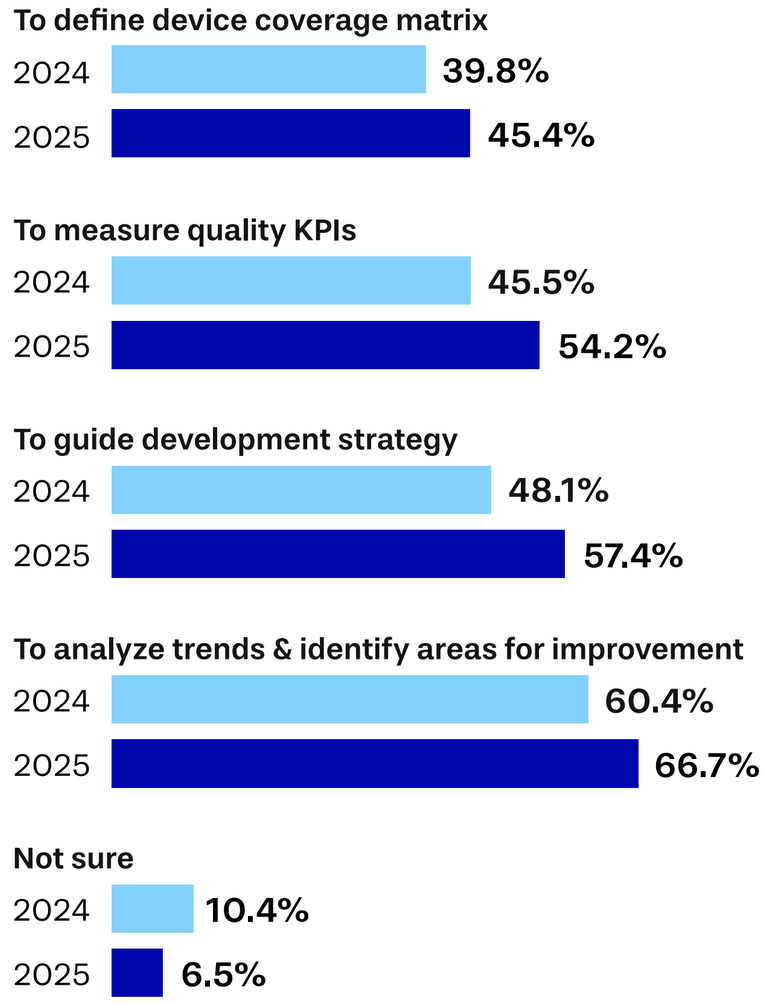
Tap AI to improve documentation and data analysis

With only 32.5% of respondents stating that they have comprehensive documentation for test cases and plans, the rest may want to try AI as a starting point. AI can make it easier for teams to generate and update test plans for all features. It can also sift through the data to identify patterns that can inform QA strategy.

How well organizations document test cases and test plans n=1,825



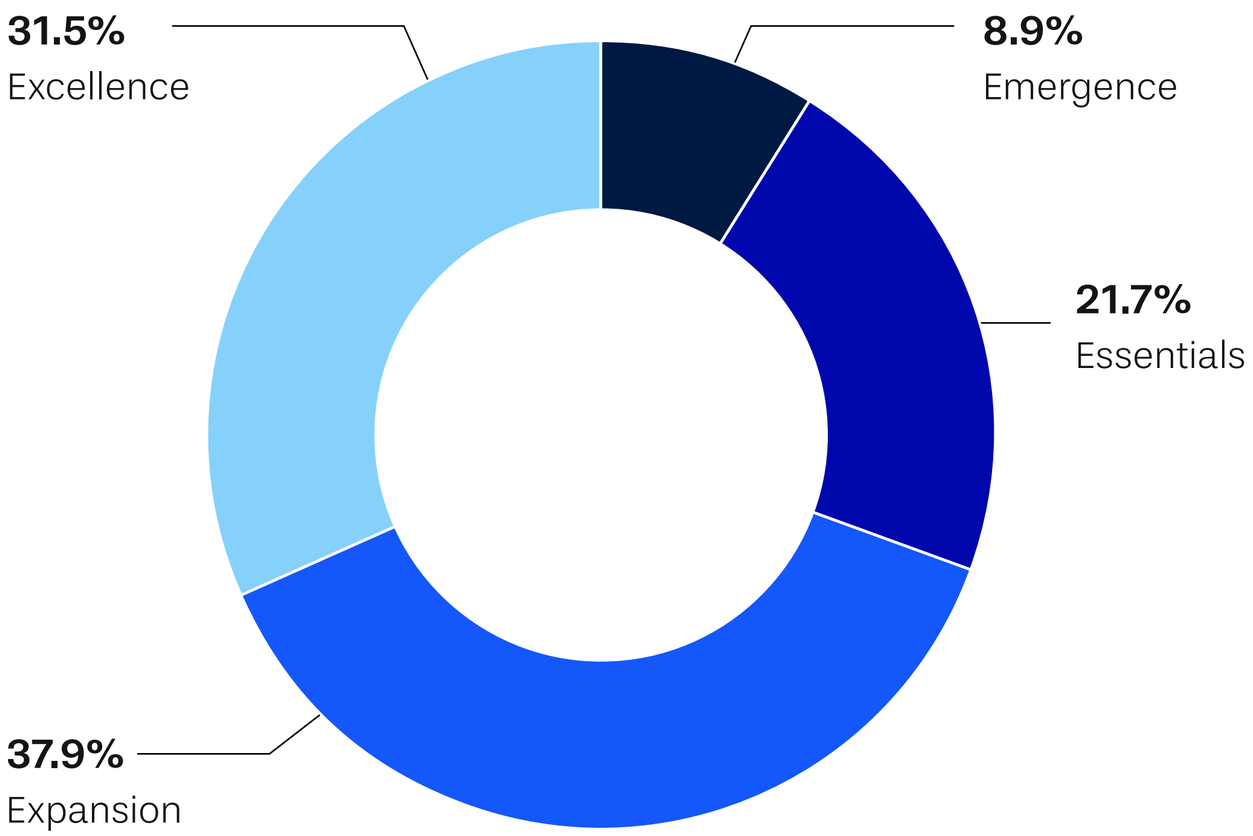
How organizations are using test case reporting and metrics n=1,825



Overcoming digital quality challenges

How teams rate their organizations' structure and consistency around digital quality

n=1,818



Emergence: Lack of consistent systems, and documentation.

Essentials: Early stages of defining and documenting processes and establishing consistency around test efforts.

Expansion: Clear processes, a broad range of testing types and some reporting are in place; teams are working to improve coverage, scalability and efficiency.

Excellence: Quality is embedded in the company's DNA and built into all products and experiences from end to end.

See more details and additional frameworks.

The impact of different variables on digital quality

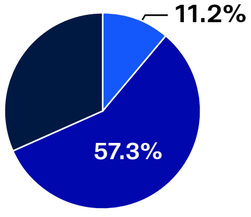
This year, we asked survey participants to rank the difficulty of some common challenges in the areas of skill and resource constraints, scale and coverage, and test data and documentation.

The toughest challenges in each category were testing in inconsistent/unstable environments, not enough time to test before release and lack of clear reporting. The next few pages showcase the concerns in each area.

Skill and resource constraints

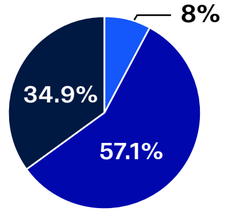
n=1,716

Incomplete requirements



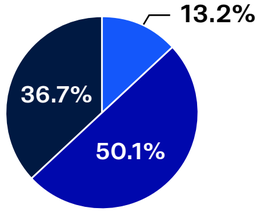
11.2% Not challenging
57.3% Slightly/moderately challenging
31.5% Very/extremely challenging

Rapidly changing requirements



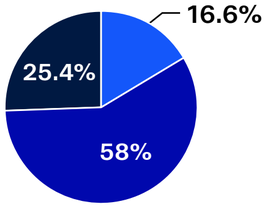
8% Not challenging
57.1% Slightly/moderately challenging
34.9% Very/extremely challenging

Inconsistent/unstable environments



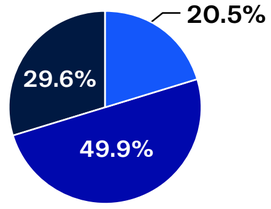
13.2% Not challenging
50.1% Slightly/moderately challenging
36.7% Very/extremely challenging

Siloed QA & Dev teams



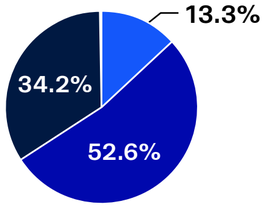
16.6% Not challenging
58% Slightly/moderately challenging
25.4% Very/extremely challenging

Lack of in-house skills to test AI applications



20.5% Not challenging
49.9% Slightly/moderately challenging
29.6% Very/extremely challenging

Overwhelming bug backlog

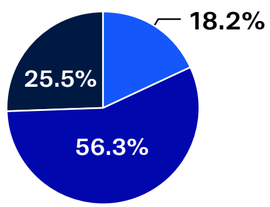


13.3% Not challenging
52.6% Slightly/moderately challenging
34.2% Very/extremely challenging

Scale and coverage

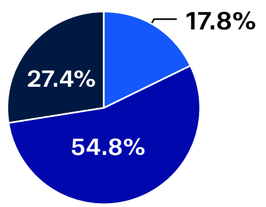
n=1,716

Limited test coverage



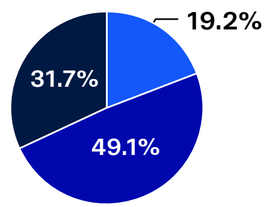
18.2% Not challenging
56.3% Slightly/moderately challenging
25.5% Very/extremely challenging

Limited device coverage



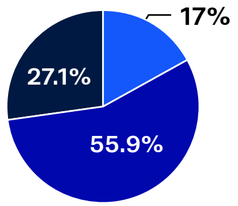
17.8% Not challenging
54.8% Slightly/moderately challenging
27.4% Very/extremely challenging

Inability to test in real-world scenarios



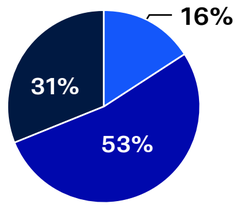
19.2% Not challenging
49.1% Slightly/moderately challenging
31.7% Very/extremely challenging

Scaling for new product or market launches



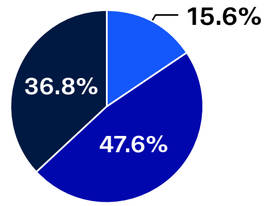
17% Not challenging
55.9% Slightly/moderately challenging
27.1% Very/extremely challenging

Lack of test automation



16% Not challenging
53% Slightly/moderately challenging
31% Very/extremely challenging

Not enough time to test adequately before release



15.6% Not challenging
47.6% Slightly/moderately challenging
36.8% Very/extremely challenging

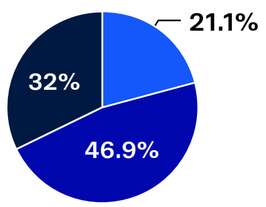
Challenge accepted

When organizations struggle with speed, scale and coverage, crowdtesting offers an excellent solution. The flexibility and diversity of the community-based testing model allow teams to easily gain the coverage they need, when they need it, for almost any device, test or scenario.

Documentation

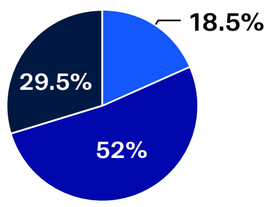
n=1,716

Poorly/inconsistently documented test run results



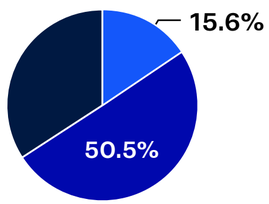
21.1% Not challenging
46.9% Slightly/moderately challenging
32% Very/extremely challenging

Poorly/inconsistently documented test cases



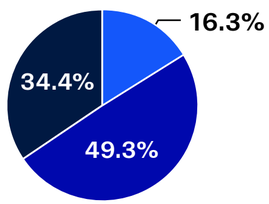
18.5% Not challenging
52% Slightly/moderately challenging
29.5% Very/extremely challenging

Inadequate test data/inability to reproduce defects



15.6% Not challenging
50.5% Slightly/moderately challenging
33.9% Very/extremely challenging

Lack of clear metrics and reporting



16.3% Not challenging
49.3% Slightly/moderately challenging
34.4% Very/extremely challenging

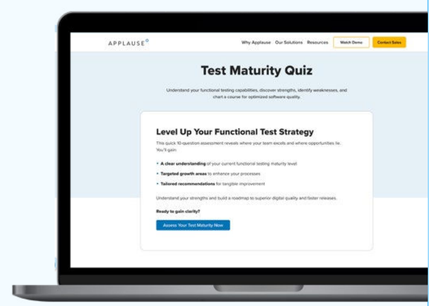
Facing the challenges of functional testing: AI can't solve everything

Throughout this report, we've identified areas where AI can help software development and QA teams expand and accelerate coverage without cutting corners. Still, AI can only do so much – humans must still drive strategy, develop processes and provide governance for decision-making. To improve digital quality, organizations must continue to invest in training, tools and testing to validate all aspects of the end-to-end customer experience. Teams must adapt to ensure that delivering applications at speed doesn't come at the cost of quality.

Take the self-assessment

Answer 10 quick questions to reveal the greatest opportunities for improvement in your functional testing strategy.

Start Now



Recommendations for improving functional testing efficacy and efficiency

1. **Assess how AI can help you address some of your most pressing challenges and resource constraints.** While AI is not a magic bullet, using it to develop test suites based on requirements, prioritize test cases and bug backlogs, and improve test reporting can help time-pressed teams work more efficiently. Developing solid prompts that can be reused to create better or more consistent test plans can save time and effort — and help catch defects before they reach production.

2. **Make sure you're measuring digital quality in ways that align with your organization's strategic goals and priorities.** While a reduced number of defects reaching production may seem great, if that doesn't translate into greater market reach, improved customer satisfaction, or reduced costs, that's not a meaningful KPI. Focus on monitoring metrics that tie to greater revenue, reduced costs, or increased efficiency and you'll be in a better position to justify investments in quality and test.

3. **Regularly assess the types of tests you're conducting, your device coverage matrix, and where in the SDLC you're collecting feedback to see if there are opportunities to adjust and improve.** The most successful organizations integrate quality throughout the process and examine digital experiences from a variety of diverse, real-world perspectives. They adapt to find the optimal mix that allows them to deliver high-quality releases at a pace and scale they can sustain over time.

"Functional testing is no longer a checkpoint — it's a strategic differentiator. Winning teams harness AI to streamline test creation and triage, but they also expand beyond automation to test with diverse users in real-world conditions. To compete, your testing must scale with your ambition — faster, smarter, and always aligned to business impact."



Rob Mason
CTO, Applause

To learn more about the methodology of the report, visit **stateofdigitalquality.com**

Acknowledgments

Thank you to the business leaders, community members and subject matter experts who shared their time, knowledge and insight to shape this report.

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