Tricentis

2025 Quality Transformation Report

Closing the gap between speed, quality, and trust in the AI era

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FOREWORD

In today's hyper-competitive environment, software delivery is no longer just a technical discipline – it's a defining factor of business success. Every industry is under pressure to move faster, innovate boldly, and embrace artificial intelligence (AI) as a catalyst for change. Yet, as revealed in Tricentis' inaugural *Quality Transformation Report*, the race for software development and delivery speed often comes at the expense of overall quality, compounding risks and costs that quietly erode business performance.

Through this research, we set out to understand the challenges facing technology leaders and their teams at this pivotal moment. What we found is a landscape marked by opportunity, but also by imbalance. While advances in AI offer the promise of automation and acceleration in software testing, misalignment around what truly defines high quality in software threatens to stall progress.

The findings are clear: Software development and delivery teams that can balance the demands of velocity with discipline around quality and risk will lead the next wave of digital transformation — an evolution we're defining as *quality transformation*. Those that fall short will continue to face mounting operational costs, increasing customer turnover, more frequent security breaches or compliance failures, as well as the ever-present risk of business disruption.

The **Tricentis 2025 *Quality Transformation Report*** provides a roadmap for navigating this complex environment. In today's software economy, quality is the currency that drives speed, lowers risk, and empowers teams to deliver lasting value.

EXECUTIVE SUMMARY

Software development and delivery teams today are producing faster than ever, but too often, speed comes at the expense of high-quality software. Under growing pressure to accelerate release cycles, nearly half **(45%) of organizations now prioritize delivery speed over software quality**. Alarmingly, nearly two-thirds **(63%) admit to deploying code without fully testing it**, sacrificing long-term stability for short-term velocity.

The consequences of these shortcuts are substantial. **Forty percent of organizations estimate that poor software quality costs them over $1 million annually**, with financial services firms being hit the hardest - **nearly half (49%) report losses exceeding $5 million each year.**

Two-thirds (66%) of all organizations surveyed say they're likely to suffer an outage or major disruption in the next year, with nearly a quarter (23%) deeming their organization extremely at risk.

Misalignment between leadership and their teams is blocking quality gains. Poor communication between software development and quality assurance teams (33%) and a disconnect between leadership and development teams (29%) are two of the most significant barriers to achieving higher quality software.

Meanwhile, AI is fundamentally reshaping the software landscape. AI adoption is rising fast, and confidence in its role in software development and delivery is growing.

Over 4 in 5 IT professionals believe that AI will help teams deliver both high quality and speed in unison.

Nearly 90% of organizations report they can effectively measure the return on investment from generative AI, signaling a decisive shift from experimentation to business impact.

Excitement about AI agents is particularly strong, with 82% of CIOs, CTOs and software delivery teams anticipating productivity gains from offloading repetitive tasks, and **9 in 10 expressing trust in AI to independently make critical software release decisions.** However, this optimism is tempered by new complexities. From concerns around AI bias and over-reliance to gaps in AI literacy and explainability, organizations must balance the opportunities of AI with responsible deployment.

The bottom line is that AI is opening new doors to productivity and performance, but without addressing leadership alignment and embedding a disciplined, quality-first approach, organizations risk eroding the very value they seek to create.

Closing the gap between ambition and execution requires more than just acceleration. It starts with creating strong alignment around quality, supported by clear, measurable standards across teams. Organizations must strike the right balance between speed and resilience, ensuring quality is never compromised in the race to deliver. To achieve this, leaders should adopt tools, powered by the latest AI technologies, that not only advance testing and delivery, but also deliver measurable improvements in quality, efficiency, and business impact.

To understand these dynamics more deeply, in March 2025 Tricentis partnered with Censuswide to survey over 2,700 global technology leaders and practitioners across the United States, UK, Germany, Singapore, Japan, and Latin America (Mexico, Brazil, Argentina, Colombia, Peru). Respondents include CIOs, CTOs, general managers, VPs of engineering, VPs of applications, VPs of IT, VPs of quality assurance, IT practitioners, DevOps leaders, quality assurance leaders, and software developers from sectors such as public sector, energy and utilities, manufacturing, and financial services.

This report reveals how leading organizations are building the foundations for faster, higher-quality software delivery by addressing talent and knowledge gaps, sharpening their quality priorities, and embracing innovations like autonomous testing and quality intelligence to accelerate transformation.

Across all regions, IT leaders are aligning around three core strategic imperatives: increasing the speed of development and deployment (44%), improving overall software quality (44%), and automating manual processes (42%). These priorities reflect the growing recognition that speed and quality must advance in parallel – not in opposition.

Regionally, the US (46%) and Latin America (51%) prioritize speed, APAC it's quality (44%), and EMEA it's process automation (42%) – underscoring how context shapes execution priorities.

THE STATE OF SOFTWARE DELIVERY IN 2025

For many software development and delivery teams, the race to release has come at the expense of rigor. Under pressure to move fast, quality checks are often bypassed to keep pace with aggressive timelines. Today, only about one-third of global businesses prioritize software quality over delivery speed.

Meanwhile, nearly two thirds (63%) admit to deploying code without fully testing it, citing the need to expedite release cycles (46%) and accidental slips of untested code (40%) as driving factors.

This is highest amongst those in LATAM (76%), followed by EMEA (73%) and APAC (52%). Other reasons given include having too much to test (38%) and not being sure what to test (25%).

Many IT professionals are delaying releases because they are not confident in their test coverage – with almost a quarter (24%) saying this happens often. Respondents in EMEA are the most likely to delay releases because they aren't confident in their test coverage, followed by APAC (76%), and then LATAM (70%).

% of respondents who "often or sometimes" delay releases due to lack of confidence in test coverage.

This recalibration of priorities is also shifting how organizations define and measure software quality. When asked what they consider the most effective indicator of quality, respondents were most likely to point to improved development and deployment speed (15%). This ranked higher than more traditional metrics such as enhanced customer satisfaction and retention (11%), mean time to resolve or triage defects (11%), and the volume of customer support cases (10%). The results demonstrate just how strongly speed has become linked to perceived quality in today's fast-paced environments.

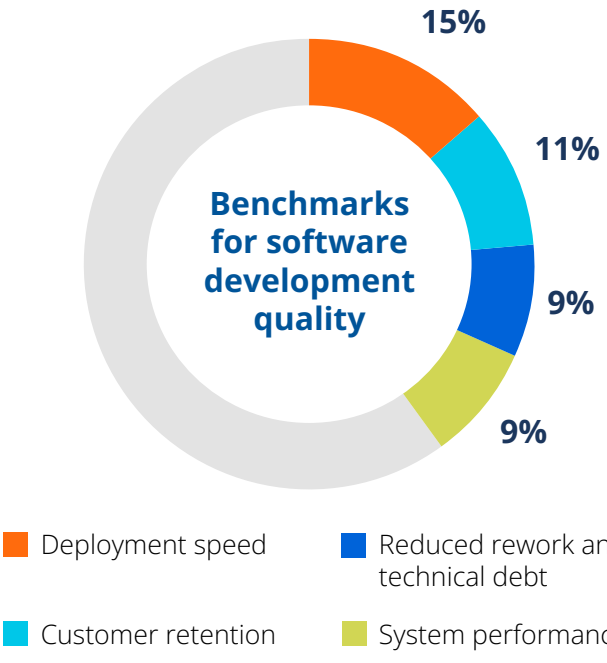
While speed may be the easiest to quantify, it is not always the most meaningful measure of long-term success.

Through Tricentis SeaLights, quality engineering teams gain the metrics, traceability, and insights needed to confidently meet their high-quality standards while delivering software quickly by identifying gaps in test coverage, determining which tests to skip and which to run, and optimizing testing strategies.

More complex, but arguably more important, indicators like customer retention (11%), reduced rework and technical debt (9%), and system performance (9%) continue to fall lower on the priority list. This growing reliance on speed as a stand-in for quality highlights the need for more balanced, outcome-based measurement frameworks that reflect both velocity and resilience.

Alongside speed, quality, and automation, organizations are continuing to modernize their foundations. Cloud migration (38%) and application modernization (36%) also rank among the top strategic IT priorities for 2025. These efforts are essential for building the agile, future-ready infrastructure required to support ongoing innovation — and mark a broader shift in how organizations design, develop, and deliver software.

The goal shouldn't be simply to move faster, but to move smarter – with quality and efficiency embedded at every step of the software development lifecycle (SDLC).



THE HIDDEN COST OF COMPROMISED SOFTWARE QUALITY

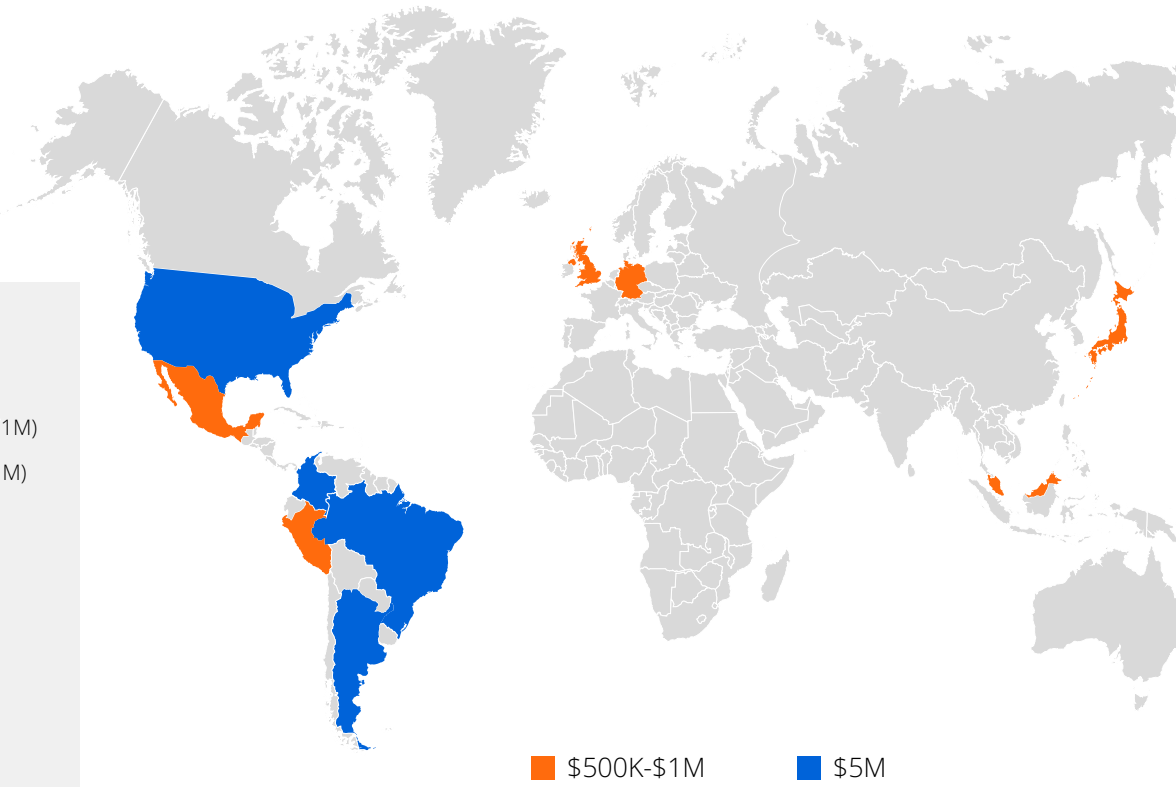
High-quality software delivers more than technical excellence – it unlocks meaningful business outcomes. According to respondents, **the top five benefits they seek from better software quality include improved team efficiency (17%), stronger customer satisfaction and retention (15%), reduced security and compliance risk (14%), increased revenue (14%), and faster delivery (14%).** These outcomes highlight quality as a true business enabler.

For most companies, poor software quality isn't just a technical issue – it's a multimillion-dollar drain. Of individuals surveyed, **81% say it costs their business between $500,000 and $5 million USD every year.** Alarmingly, nearly 40% estimate losses of over $1 million, driven by staff churn, technical debt, and escalating maintenance costs. Technical debt in particular is compounding these financial pressures. Legacy systems and ongoing maintenance strain resources, limit agility, and drive up the cost of quality failures over time.

In the U.S., the pain is even sharper: nearly half (45%) of businesses report costs upwards of $5M annually. Similarly, in the UK, 45% of businesses estimate their software quality costs fall between $500,000 and $1M annually – a significant burden even in mature markets.

Cost of quality failure

USA - 45% ($5M)
UK - 45% ($500K-$1M)
Singapore - 40% (500K-$1M)
Germany - 44% (500K-$1M)
Japan - 52% (500K-$1M)
Mexico - 45% (500K-$1M)
Brazil - 50% ($5M)
Argentina - 46% ($5M)
Columbia - 42% ($5M)
Peru - 42% (500K-$1M)



The larger the business, the steeper the price. Three-quarters of global enterprises with over 1,000 employees could spend as much as $5M a year battling software quality issues. **Financial services firms are feeling it the most, with nearly half (49%) losing over $5M each year – making them the hardest-hit sector globally.**

While financial services top the list, the burden is widespread. **Energy and utilities companies (42%), public sector organizations (38%), retailers (36%), and manufacturers (34%) are all seeing substantial financial fallout from software quality gaps.** Across industries, the cost of poor quality is compounding, putting operational resilience and profitability at risk.

42%

Energy and utilities companies

38%

Public sector organizations

36%

Retailers

34%

Manufacturers

The risk isn't just financial – it's operational. **Two-thirds (66%) of all organizations surveyed say they're likely to suffer an outage or major disruption in the next year, with nearly a quarter (23%) deeming their organization extremely at risk.** In fact, 68% of enterprise organizations report they are at risk, underscoring that quality gaps are a universal concern. Quality gaps today are tomorrow's outages.

WHAT'S HOLDING TEAMS BACK FROM ACHIEVING HIGH SOFTWARE QUALITY?

Achieving higher software quality remains an uphill battle for many software teams. One-third (33%) of respondents point to poor communication and weak feedback loops between developers and testers as their biggest hurdle. This lack of alignment slows progress and increases the risk of issues slipping through the cracks.

The disconnect extends beyond the development and QA teams. Many respondents point to misalignment between engineering teams and leadership as a key barrier to quality. Nearly one-third (30%) say they're under constant pressure to release software too quickly, while 29% report lack of clear, organization-wide quality metrics, leaving teams unclear on how quality is evaluated.

Tricentis' proven approach to AI-powered quality engineering helps organizations deliver quality at speed for any app on any infrastructure, from mobile to mainframe and everything in between.

Beyond communication hurdles, technical debt adds another layer of complexity. **Over one-third (34%) of respondents say ongoing maintenance and unresolved technical debt are the largest obstacles to delivering high-quality software.** Unless these foundational challenges are resolved, quality gaps will continue to widen, undermining delivery speed, team morale, and business outcomes. Other challenges include a lack of clear quality metrics provided by the organization (29%), a disconnect between leadership and development teams (28%), and budget constraints (25%).

These findings highlight that, while the focus on software quality is growing, meaningful progress will require overcoming technical, organizational and resource-based hurdles.

34%

Over one-third (34%) of respondents say ongoing maintenance and unresolved technical debt are the largest obstacles to delivering high-quality software.

CONFIDENCE, CLARITY AND THE NEXT WAVE OF AI

The good news is that **over 4 in 5 IT leaders and professionals included in our research believe that AI will help software development teams deliver high quality software faster.**

Almost 90% of respondents say their organizations can effectively quantify the ROI from generative AI within their software development lifecycles. In order to improve **this number even further, the following factors were determined to help increase confidence: stronger feedback loops (35%), stronger alignment on goals (35%), more data on how AI is impacting the SDLC (35%), and insight into customer expectations (34%).**

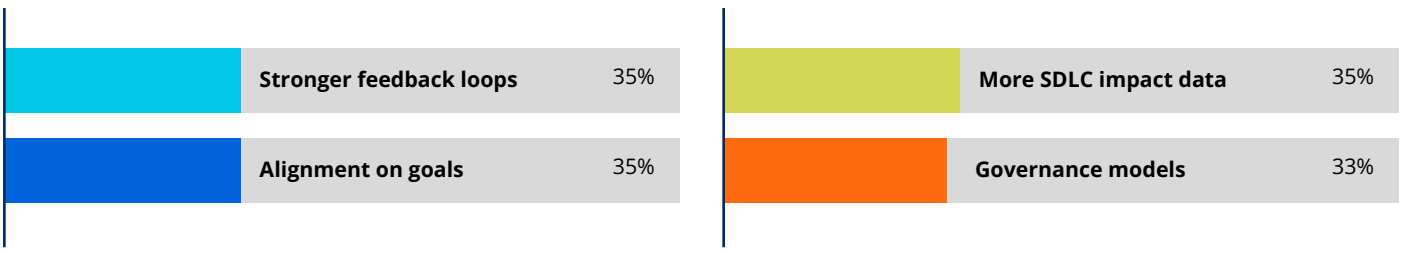
As AI adoption accelerates, organizations are taking a thoughtful approach to building trust in the technology. While software development teams remain mindful of ethical considerations, they are also laying the groundwork for responsible deployment at scale. Bias remains a key concern, with 38% of respondents highlighting the risk of discriminatory outputs, and another 38% cautioning against over-reliance. Rather than focusing solely on technical implementation, many leaders are prioritizing governance, transparency, and reputational safeguards.

Building AI literacy is emerging as a strategic priority. Although only 40% of respondents currently emphasize understanding how AI reaches its outputs, this signals a growing awareness of the need for explainability and accountability in AI systems. As AI continues to evolve at a rapid pace, the need to build foundational literacy is only becoming more urgent. As confidence builds, so does the recognition that effective adoption depends on cross-functional understanding - not just technical capability.

Organizations also understand that long-term returns require long-term investment. Two-thirds (66%) expect their investments in software development and delivery to take at least three years to pay off, with over one-third (34%) anticipating AI-related ROI will take even longer. Rather than expecting immediate results, today's technology leaders are laying the foundation for sustainable transformation, powered by AI-augmented automation.

To fully capitalize on AI's potential, organizations must approach adoption with a focus on transparency, governance, and measurable impact - turning trust into a catalyst for innovation, not a barrier to it.

What would boost AI ROI confidence?



THE RISE OF AI AGENTS IN THE FUTURE OF AUTOMATION

Agentic AI is quickly becoming a powerful force in achieving quality transformation. Once viewed with skepticism, AI agents now empower productivity, quality, and scale. **The vast majority of respondents (82%) say they are excited about AI agents taking on repetitive tasks in the software development lifecycle, allowing teams to focus on more strategic work.** More broadly, 84% believe AI will help teams deliver under increasingly tight deadlines - highlighting the value of automation in high-pressure environments.

A significant 89% of respondents overall say they trust AI agents to make decisions that impact software delivery. However, confidence levels vary by industry: financial services and retail show the most hesitation, with over a quarter of respondents lacking confidence in AI decision-making. In contrast, manufacturing and energy sectors are leading the charge, with an impressive 92% expressing strong confidence in AI autonomy.

Agentic AI is a cornerstone of Tricentis' strategy, with agents acting not just as copilots or assistants, but as autonomous collaborators capable of completing high-value tasks across the software development lifecycle, while driving critical economic value for organizations.

To fully harness this potential, organizations are also prioritizing skill development. Rather than honing a single expertise, developers are building a broader, future-ready toolkit - including the ability to understand AI's limitations (44%), navigate ethical risks (43%), interpret tool interactions (43%), and grasp how AI generates its output (41%). This investment in talent ensures that human oversight and innovation remain central, even as automation increases.

44%
Ability to understand AI's limitations

43%
Navigate ethical risks

43%
Interpret tool interactions

41%
Grasp how AI generates its output

As teams prepare for this future, new practices like autonomous software testing and quality intelligence are rising to the forefront. By leveraging AI-driven insights and real-time automation, these approaches proactively identify risks, eliminate bottlenecks, and embed quality throughout the SDLC — enabling teams to deliver at speed without compromising reliability.

Strikingly, almost all (99.89%) respondents think autonomous testing will be useful for QA: Areas where technology leaders and software development professionals expect to see the most impact include improving software speed overall (28%), overall quality (28%), analyzing test results (25%) and test case maintenance (23%).

Where autonomous testing will have the greatest impact

28%
Improving software speed overall

28%
Overall quality

25%
Analyzing test results

23%
Test case maintenance

Software development professionals and leaders see AI-driven testing as a key enabler of smarter software delivery. Top priorities include boosting delivery speed and quality, analyzing test execution results, and converting manual tests into automated ones – highlighting how AI is poised to streamline high-impact stages of the testing lifecycle.

Further still, software development professionals and technology leaders expect AI to play a major role in streamlining quality assurance processes. **More than 70% believe AI will help improve defect leakage, test coverage, and maintainability – with nearly three-quarters citing AI's potential to enhance tester efficiency as well.** These capabilities are key to reducing risk, accelerating releases, and making quality scalable.

The rise of AI agents marks a turning point in the next wave of AI innovation – organizations that invest in both automation and human capability will lead the next era of digital transformation.

> ***Agentic AI is poised to take on some of the tedious tasks and free up testers and developers to focus on more strategic, business-critical activities that help them innovate faster and deliver better software. Simultaneously, it's imperative for leaders to prioritize investment in agentic AI training so teams have the skillset, knowledge, and confidence to "wrangle with the AI," a critical skill for the future.***
>
> David Colwell
> VP of AI and ML, Tricentis

CONCLUSION: THE PATH FORWARD TO SOFTWARE QUALITY AT SPEED WITHOUT COMPROMISE

The acceleration of software delivery is undeniable, but the cracks are starting to show. Under pressure to deliver faster, too many software development teams are cutting corners on quality. From mounting technical debt to rising outage risks, the hidden costs are adding up.

Across industries, organizations are absorbing millions in annual losses from preventable software quality issues. While AI is delivering real productivity gains, it also raises new complexities – from ethical concerns to explainability gaps – that demand vigilant leadership.

CIOs and technology leaders have an opportunity to transform their approach to software development and delivery. By embedding solutions that help to create quality transformation in software development workflows, teams can shift from reactive quality control to proactive quality engineering. They can accelerate releases without compromising on quality, control costs while improving customer experiences and outcomes, as well as deploy AI responsibly while ensuring trust in every decision.

The Tricentis quality engineering platform enables organizations to deliver software with high quality every time, across any environment, organization size, and number of applications with the most extreme levels of complexity. The unique model-based approach, which has been made more powerful with AI, creates a flexible, scalable, and powerful set of capabilities providing end-to-end coverage, transparency, traceability and support.

Tricentis Copilot solutions give teams intelligent assistants in the complex world of software quality engineering. Tricentis Copilots use generative AI to help organizations streamline testing, guiding teams toward faster cycles, more efficient testing, and better business outcomes.

KEY TAKEAWAYS

- **Software quality falters amid competing organizational pressures:** As organizations chase productivity gains from generative AI, teams are overwhelmingly focused on improving delivery speed (45%) over enhancing software quality (13%). The majority (63%) of global organizations ship code changes without fully testing them, citing the need to expedite release cycles (46%) and accidental slips of untested code (40%) as driving factors.
- **Quality gaps are costing organizations millions:** Nearly half (42%) of global organizations believe poor software quality costs them $1M or more annually, with **financial services firms reporting the steepest losses.**
- **Misalignment between developers and leadership is blocking quality gains:** Poor communication between software development and quality assurance teams (33%) and disconnect between leadership and software development teams (28%) prove to be top barriers to achieving higher quality software.
- **Agentic AI looks set to help plug productivity, quality, and performance gaps:** The majority of organizations surveyed (82%) report excitement about the possibility of AI agents to assume their monotonous tasks in the development and delivery cycle, freeing up time for more strategic and rewarding work. More broadly, 84% believe AI will help software development teams deliver software under increasingly tight deadlines.
- **AI is gaining executive trust to drive critical high-stakes decisions:** 9 in 10 CIOs, CTOs, and software delivery teams are confident in AI's ability to autonomously make software release decisions.
- **Enterprises are gaining clarity on generative AI's business impact:** Almost 90% of respondents say their organizations can effectively quantify the ROI from generative AI within their software development lifecycles.
- **Strikingly, almost all (99.89%) respondents think autonomous testing will be useful for QA:** Areas where technology leaders and software development professionals expect to see the most impact include improving software speed overall (28%), overall quality (28%), analyzing test results (25%) and test case maintenance (23%).

The paradigm shift underway in software development, accelerated by AI, presents both challenges and opportunities. For leaders and teams alike, success will depend on embracing innovative solutions that resolve the ongoing tension between speed and quality, while laying the foundation for more resilient, intelligent delivery.

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Survey methodology and participant demographics

Tricentis conducted the *Quality Transformation Report* via a global survey fielded in March of 2025, with 2,750 respondents from 10 countries (U.S., UK, Germany, Singapore, Japan, Mexico, Brazil, Argentina, Colombia, Peru) and five industry verticals including: public sector, energy and utilities, manufacturing, and financial services. Respondents included senior executives, CIOs, CTOs, general managers, VPs of engineering, VPs of applications, VPs of IT, VPs of quality assurance, IT practitioners, DevOps leaders, quality assurance leaders, and software developers.