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# 77% of organizations are investing in artificial intelligence solutions to bolster their Quality Engineering

The transformation of traditional testing towards Agile<sup>1</sup> quality management is accelerating to support value delivery to customers and end users

Paris, November 9, 2023 – The 15<sup>th</sup> edition of the <u>World Quality Report</u>, published today by <u>Capgemini</u>, <u>Sogeti</u><sup>2</sup>, and <u>OpenText</u>, highlights the rising importance of Quality Engineering (QE)<sup>3</sup> to enhance both sustainability in business operations and value delivery to customers and end users. According to the report, 67% of organizations have incorporated QE at the core of their business operations, to ensure that technological advancements adhere to quality standards.

The report highlights that with high customer expectations, interoperability demands, regulations, evolving guidelines, and cybersecurity risks, testing now requires an approach that is more rigorous and agile than ever before. The trend of hyper-personalization is also adding to the complexity, as it demands exhaustive testing. Quality Assurance (QA) is therefore evolving from a pure testing scope to broader Quality Engineering (QE), which focuses on delivering value over volume to enable customer experiences, brand protection, and business outcomes. This shift requires a re-focus onto the end-to-end customer journey and collaboration with business teams.

## The use of AI is on the rise in Quality Engineering, but an incremental approach is key

Trends in the use of AI to deliver quality outcomes are moving fast. Organizations cite for the first time, higher productivity as the primary outcome driven by AI (65%). Generative AI will make possible increased productivity and velocity, leading to more frequent deployments with a higher quality customer experience.

Respondents reported that using AI to improve the reliability of tests (33%) and reduce the number of defects (29%) was no longer their primary focus. This indicates a shift in the testing philosophy, with an increased tolerance for defects as long as they can be fixed quickly and efficiently. Continuous testing, inherent in Agile and DevOps<sup>4</sup> practices across organizations, has accelerated this trend.

However, concerns related to security, privacy, and biased outcomes still need to be addressed, with 31% remaining skeptical about the value of AI in QA, emphasizing the importance of an incremental approach.

<sup>&</sup>lt;sup>1</sup> In software development, **Agile** practices include requirements discovery and solutions improvement through the collaborative effort of self-organizing and cross-functional teams with their customer(s)/end user(s), adaptive planning, evolutionary development, early delivery, continual improvement, and flexible responses to changes in requirements, capacity, and understanding of the problems to be solved. It aims to provide better responsiveness to changing business needs.

<sup>&</sup>lt;sup>2</sup> Part of the Capgemini Group, **Sogeti** makes business value through technology for organizations that need to implement innovation at speed and want a local partner with global scale. With a hands-on culture and close proximity to its clients, Sogeti implements solutions that will help organizations work faster, better, and smarter. By combining its agility and speed of implementation through a DevOps approach, Sogeti delivers innovative solutions in Quality Engineering, cloud and application development, all driven by AI, data and automation.

<sup>&</sup>lt;sup>3</sup> Quality Engineering spans the entire product lifecycle, not just the software development process.

<sup>&</sup>lt;sup>4</sup> **DevOps** is the combination of practices and tools designed to increase an organization's ability to deliver applications and services faster than traditional software development processes.

Mark Buenen, Global Leader, Quality Engineering and Testing at the Capgemini Group, commented: "*The World Quality Report provides insights on the key trends and developments in Quality Engineering. It sheds light on the evolving role of quality within sustainable IT and the opportunities for applying AI solutions, notably the huge potential of generative AI applications. It's interesting to see the role AI can play, particularly in generating test cases and automating quality procedures, but also on the importance of quality practices to enhance value delivery to customers and end users. However, to ensure AI's reliability within Quality Engineering long-term, organizations should take a gradual, incremental approach."* 

"Quality Engineering is changing, and AI is one of the driving forces for this transformation. AI offers endless possibilities and opens the door to smarter DevOps, including quality assurance," said Muhi Majzoub, Chief Product Officer, OpenText. "As the findings in the World Quality Report demonstrate, 77 percent of businesses understand this and are making investments to make AI a critical part of their quality engineering infrastructure. AI's impact will extend beyond investors and customers to provide profound economic, social and environmental benefits as well."

## Quality Engineering's active role within sustainable IT

This year's edition of the report also confirmed sustainable IT as an increasing interest area for quality teams. The vast majority (97%) think that QE is an active element in driving the sustainability agenda in their organization and over half (55%) highlighted benefits on the environmental aspect of sustainable IT.

However, for most respondents (63%), the priority over the next 12 months remains understanding how to monitor and report on green metrics within their QE testing processes.

### The rise of Agile quality management

To keep up with the fast-paced digital environment, 70% of organizations cited that they are valuing a central Testing Center of Excellence (TCoE) over traditional project level QA practices. This demonstrates they are moving to Agile quality management, which emphasizes continuous improvement, adaptability, and customer-centricity.

Notably, respondents are prioritizing development skills for quality engineers, such as SQL/Python/C#/Java (42%) and CI/CD (39%), over traditional testing skills like automation (28%) and performance tooling (24%).

Despite the rise in quality automation, the report acknowledges persistent challenges, with an average of 27% of organizations still grappling with legacy systems and the fast-changing application landscape.

The report and additional information are available here.

## World Quality Report 2023 research methodology

The World Quality Report is the only global report analyzing application quality and testing trends. It has been produced annually since 2009. This year's edition has tracked and examined the most important trends and developments in Quality Engineering and Testing by surveying more than 1,750 senior executives across 32 countries and 10 sectors. The expert findings are complemented with commentary, examples and best practices from senior executives from various fortune 500 organizations, that participated in deep-dive interviews around these topics.

### About Capgemini

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and deep industry expertise, Capgemini is trusted by its clients to address the entire breadth of their business needs, from strategy and design to operations, fueled by the fast evolving and innovative world of cloud, data, AI, connectivity, software, digital engineering and platforms. The Group reported in 2022 global revenues of  $\in$  22 billion.

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