

Your comprehensive guide

# Introduction to AI in Quality Assurance and IT Testing

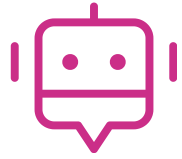




# Table of contents

1. Introduction to AI in in Quality Assurance and Testing .....	Page 3
2. Current state of AI in testing .....	Page 4
3. Opportunity cost of delaying AI adoption .....	Page 5
4. R&D at Acutest: pioneering practical testing innovations .....	Page 6
5. AI deployment in Testing: assessing risks and maximising benefits.....	Page 8
6. Engage with Acutest.....	Page 10
7. About Acutest .....	Page 11





# 1. Introduction to AI in Quality Assurance and Testing

Artificial intelligence is transforming the field of quality assurance; it is set to play a crucial role in software testing. According to Gartner\*, AI can significantly enhance the productivity of testers, offering a new dimension to test automation tools and enabling software engineering teams to bolster software quality while curtailing testing cycle times.

## The Future is AI-Driven

\*By 2027, a staggering **80%** of enterprises are expected to have AI-augmented testing tools woven into their software engineering toolchain, a leap from the mere **10%** in 2022. This strategic planning assumption underpins the belief that AI is not just a fleeting trend but a foundational element for the future of software testing.

## Capabilities Unlocked by AI

AI-augmented tools are not just about automation; they're about intelligent adaptation and self-optimisation. Machine learning, self-healing heuristics, and computer vision are just a few of the technologies revolutionising areas such as test case and data generation, suite optimisation, and defect prediction, setting a new bar for test efficacy and robustness.

**“By 2027, a staggering 80% of enterprises are expected to have AI-augmented testing tools woven into their software engineering toolchain.”**



## 2. Current state of AI in Testing

The IT skills gap\* in the UK underscores a crucial challenge. As organisations grapple with the integration of AI tools, tools which inherently lack social intuition, the onus to assess their value and fit falls on a limited pool of tech-savvy evaluators.

These individuals must critically examine whether these tools are solving the right testing and quality problems without introducing new ones, consider the organisation's unique needs and potential blind spots that AI might not catch.

This calls for a strategic approach in talent development, focusing on cultivating a workforce skilled in both technical and contextual evaluation to ensure that AI implementation truly aligns with organisational goals and doesn't lead to unforeseen complications.

\*<https://www.forbes.com/uk/advisor/business/software/digital-skills-gap/>







### 3. Opportunity cost of delaying AI adoption

#### The Tide of Change

The software testing landscape is being reshaped by trends that demand faster, more flexible, and more comprehensive testing solutions. The growing complexity of applications, the shift towards agile and DevOps methodologies, and the increasing backlog of manual tests call for the swift adoption of AI-augmented tools.

#### The Cost of Inertia

Delaying the integration of AI in testing processes could mean falling behind in efficiency, cost reduction, and ultimately, market competitiveness. AI promises not only speed in test creation but also a significant reduction in the cost and effort associated with test maintenance.

Embracing AI in the software development process can be a significant step towards achieving excellence. AI offers several advantages that can transform the way companies develop, deploy, and maintain their software.





## 4. R&D at Acutest: pioneering practical testing innovations

We're developing transformative approach in software testing and project management with our latest AI-driven innovations. Our self-healing test automation and clear AI-assisted project articulation streamline workflows and documentation, while our integration with AzureDevOps we aim to optimise the development lifecycle, enhancing both efficiency and collaboration.



### Self-Healing tests for efficiency

Our team has incorporated self-healing technology into the test automation frame. This means broken tests update themselves when there are changes in the software they're testing. The result is less manual work to keep tests up-to-date and more time for your team to focus on new challenges.



### AI-Powered Clarity in project goals

We're harnessing AI to make project requirements crystal clear from the start. By ensuring everyone is on the same page, we avoid misunderstandings and set the stage for successful project outcomes.



### Automated, detailed documentation

Our AI-driven tools can generate thorough, easy-to-understand documentation. This not only saves time but also helps ensure every detail is accurately captured and communicated.





## Simplifying test documentation

We're developing AI tools to streamline how we create our test plans and reports, making them more user-friendly. This allows testers to conduct their work with greater ease and precision.



## AzureDevOps integration

We've integrated these AI innovations with AzureDevOps, enhancing the way we manage and track software development and testing tasks. This ensures a seamless, efficient workflow from code to deployment.



## Insights from our innovations

Our innovations are teaching us valuable lessons about AI's role in testing—its strengths and its limits. While AI can greatly enhance the quality and efficiency of our work, we recognise the irreplaceable value of human insight for tasks that require nuanced understanding and context.



## Experience sharing

Sharing our experience is part of our ethos. We believe in empowering our clients with the knowledge to leverage AI effectively, supporting their experts, and enhancing their business processes. We are not just testing experts; we are partners in your technological journey, committed to achieving the best results together.





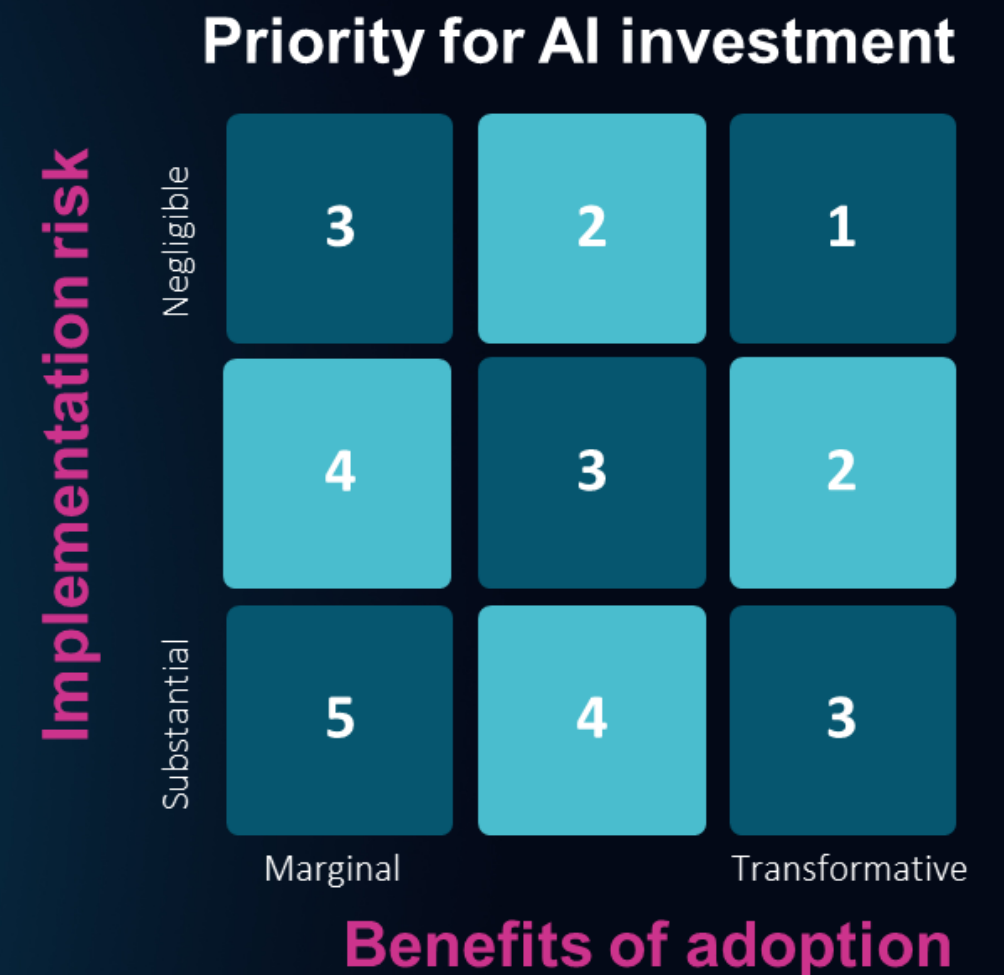
## 5. AI deployment in Testing: assessing risks and maximising benefits

### Crafting the Benefit-Risk matrix

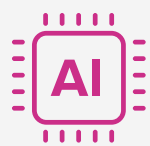
To systematically evaluate AI's role in testing, we've crafted a Priority Matrix that categorises the potential benefits and associated risks. On one axis, we assess the benefits AI could bring, ranging from 'marginal' improvements to 'transformative' changes. On the other axis, we gauge the risks, from 'negligible' concerns to 'substantial' challenges.

### Risk Factors Considered

The risks we consider in this matrix include the costs of implementation, the level of expertise required to manage AI solutions, privacy concerns inherent in AI systems, the skill set of the available team, and the suitability of the existing technology for AI integration.







## Evaluating AI integration points

With the Priority Matrix as a guide, we evaluate where and how to integrate AI into the testing process. We look for sweet spots where the benefits are transformative yet the risks remain negligible or moderate, ensuring that the deployment of AI is both advantageous and secure.



## The human factor

At every potential integration point of AI, we emphasise the importance of human expertise. AI can process and analyse data at an incredible scale, but human testers are the ones who provide context, make nuanced judgments, and ensure that the insights AI provides are actionable and relevant.



## Strategic AI adoption

At Acutest, our approach is to integrate AI in ways that enhance your team's work, not replace it. We focus on where AI can make significant improvements, always considering the crucial human expertise that understands the nuances of your business. Our role is to support your staff, complementing their skills with AI's strengths to create a seamless, efficient workflow and better overall results.





## 6. Engage with Acutest

### Streamlining workflows with AI

Our focus at Acutest is on practical applications of AI that enhance—not replace—the work of your in-house experts. We offer straightforward tools and clear guidance to integrate AI into your existing workflows, making complex tasks simpler and more manageable.

### Expertise amplification

We aim to amplify the talents of your business's experts. By incorporating AI into routine processes, we help free up their time for critical thinking and strategic work, ensuring their skills are utilised where they're most needed.

### Knowledge sharing approach

Understanding that testing is a critical aspect of any business, our approach is to share our expertise. We don't just provide technology; we equip you with the know-how to leverage AI for smarter, faster decision-making.

### Our commitment to customers

At Acutest, we're committed to a partnership that makes AI accessible and functional for your team. We're ready to guide you through every step of the AI integration process, ensuring it brings clear benefits to your business without added complexity.



## Accelerate and safeguard your IT programmes and change projects

Since its launch in 2002, Acutest has grown as a market-leading consultancy, specialising in testing and assurance of software, business processes, and IT transformation.

In April 2021, Acutest joined Trustmarque, adding to their unrivalled strengths across the IT lifecycle as a solid digital transformation partner.



**IT AWARDS 2023**







Want to learn more about how your projects  
could benefit from AI?

Book a call with our experts:  
[enquiries@acutest.com](mailto:enquiries@acutest.com)

[www.acutest.com](http://www.acutest.com)