



Winds of Change: Transcending Quality Assurance in the AI space

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The need for faster delivery

Change is inevitable, as is the need for faster software product releases. This necessity arises from the exponential growth in digital adoption, advancements in software technology, and increased competition. Every decade there is a major transition happening in the software industry from the Internet boom to Mobile & Cloud Computing to Agile & DevOps Practices. With the growing demand for intelligent software delivery within shorter duration, the question arises: Is it the endgame for continuous integration and delivery?

AI revolution

According to Gartner, by 2026, over 80% of enterprises will be developing intelligent applications based on Generative Artificial Intelligence (GenAI). This projection suggests that there will be a significant shift in the software industry, driven by the integration of AI and ML. Though ChatGPT made a significant impact in the AI space last year, test automation tools at a very minimal level had demonstrated the glimpse of AI much earlier. The pace of AI is believed to be faster than any other technology that has been created in the past and companies have been challenged to keep up with this pace to sustain in the field.

From a broader perspective, testing focuses majorly on two areas: a) Functionality of newly developed features and b) Uninterrupted operation of existing functionalities due to new code. AI is also getting into individual testing areas like data analysis, data creation, visual testing, and automated scripting.

AI adaptability in software testing

AI is keen on bringing significant advancements, not just for performing repetitive tasks but to contribute to streamlining the test process – bringing the individual AI testing capabilities together as a framework.

- **Unravelling the puzzle**

An intelligent mechanism that understands the requirement is a good beginning for taking in AI into process. AI-powered NLP algorithms powered to analyze requirements from various sources, Predictive Analytics predicting potential future requirements and Automated Documentation maintaining comprehensive documentation are techniques where requirement understanding process can be optimized the in a great way.

- **Robust groundwork**

A tester invests significant portion of the time in designing and maintenance of the test cases. AI is capable to generate test cases from plain text input. Furthermore, it understands the scope and boundaries of the test, review requirements, analyse the code and design effective test cases with wide range of potential inputs and suitable test data. Many capabilities are being added even to regenerate cases based on changes imposed in the system.



- **Self-governance**

Automation testing has been there for several decades focussing majorly on automating repeated tests. But there are still challenges with maintenance, framework shifts, demand for skilled engineers, stabilization, and time consumption. Technologies like low code and easy to use tools are racing to propose new solutions. However, AI capabilities like automatic script generation, ready-made codes, smart locator changes, framework compatibility, intelligent test execution and maintenance can be a game changer for the software testing industry.

- **Test Impact Analysis**

An intelligence system like AI can assess the impact of code changes, analyse defect pattern, scan through the logs and thereby providing continuous feedback about the quality. This leads to creating resilient test cases, alerting stakeholders through bots for decision making and avoiding flaky tests.

Connecting the dots

AI is showcasing greater potential to augment human cognitive abilities which spells a big opportunity to the software testing industry. Harnessing its remarkable capabilities at all levels of life cycle with an end-to-end framework will streamline the entire test process leading the charge for effective testing of complex software products and super-fast delivery.