

## Case Study: QA Transformation

# FROM AD HOC TESTING TO MODERN CI/CD DELIVERY ENGINE

**QualityLogic engaged in a multi-year endeavor with a rapidly scaling organization to radically transform their quality assurance program from an ad hoc, informal approach to testing into a state-of-the-market CI/CD QA platform and a product-platform operational model.**

## Starting at Zero

When we first engaged with the client, there were no QA resources internally. QA activities were conducted ad hoc by developers, project managers, and related roles. This approach led to poor and inconsistent quality outcomes, which prompted the client to engage QualityLogic. An additional challenge for the client was lack of skilled QA talent and insufficient internal resources to set up a QA function in line with best practice.

## Building Processes

We began to lay the foundation for the future QA platform by assigning a team of manual QA resources. This team focused on building product knowledge, establishing a QA process which worked with the client's SDLC, documenting test cases, and implementing consistent QA checks and support across each application. During this time, We also worked with the client to shift testing left, where resources participated early in the delivery cycle, such as by working with internal business analysts and developers during requirements analysis so that test cases could be built as features were developed, leading to a just-in-time approach to testing.



A key activity during this early period was the establishment of descriptive, clear acceptance criteria, and test cases which were atomic and did not rely on assumed knowledge. After 4 months, and with the foundation of the QA platform built, the team began to incorporate automated testing into the QA services to shorten the testing and delivery cycle and provide earlier confidence to developers. We began a significant effort to build a custom test automation framework and automate the existing manual test cases, including embedding QA engineers with developers to write test automation code as features were developed, thereby making automation available as soon as code was ready for release. We were integral in recommending and implementing the right test tools and frameworks to support the automation initiative. This initial automation effort occurred primarily in the first two years, and the QA team shifted from consisting primarily of manual test resources to test automation resources as the automation coverage grew and became central to the QA platform.

## Shift to Agile

During this period, we also supported the client in shifting to an agile, pod-based delivery model. This model consisted of organizing product owner, developer, and QA teams into agile squads who focused on one product line or application. This enables work to be organized around a specific application, and for internal teams to remain within the same application context allowing them to specialize. We also worked closely with the client to ensure the QA approach, tools, and technologies were standardized across each agile squad and application to ensure consistent quality outcomes.

As test automation and the agile SDLC matured, we then supported the client in transitioning to a CI/CD delivery model. Our engineers established a Jenkins CI/CD pipeline for the client and integrated ~3,000 E2E tests into this build pipeline. Some of the features included a third-party test code repository coupled to Jenkins for automated test runs and reporting, test parallelization, and test fail and defect logging. This support occurred primarily in years 2 and 3.

## Full Circle Transformation

QualityLogic enabled the client to transform its QA operation from non-existent, where QA activities were performed ad hoc by developers and product owners, to a state-of-the-market CI/CD delivery model with QA transitioned into a product-platform, agile support model. This support has enabled the client to achieve several key release milestones, rapidly expand its userbase, and deliver consistently higher quality applications and features to its customers.

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