

Global Telecommunications and Automotive Leader Transforms Testing with an Organization-level Automation Strategy



How a three-phased, iterative approach and low-code modular framework boosted quality, prioritized risk and cut release time for a top automotive and communications group.



Challenges

Scattered management of test cases and lack of detailed test case templates caused replication and varied formats.

Maintenance of test automation tools, scripts and framework was ad hoc; test plans failed to capture prioritization.



Solutions

Qualitest created a centralized repository and migrated scripts from a legacy tool to a new-age low-code automation tool with a modular framework.

We introduced risk-based testing to prioritize test cases and automate business-critical processes.



Results

Eliminated around 55% of duplication by arranging test cases with appropriate business modules.

Cut about 40% of the testing time during each testing cycle.



Client overview

The Client is a global company with nearly 50,000 employees and \$22 billion in revenue. Their two major divisions, Communications and Automotive, lead the world in their respective industries.

The conglomerate's widely recognized brands include an online auto marketplace, a smart home security system linked to their internet service, and a vehicle valuation/auto research company.

Everything everywhere all at once: Hundreds of apps, multiple users, high-maintenance tools

The Client maintains 400+ applications across the group for various business reasons, and these applications are used by internal and external users (vendors, partners, customers, etc.). The Client faced challenges managing the testing cycles across their portfolio due to a scattered automation approach and various automation tools requiring high maintenance. They needed an organization-level automation strategy that could reduce their manual efforts, increase testing efficiencies, build trust with stakeholders, and help project teams release early into the market and adapt to new application releases.

They needed Qualitest to assess the current situation, recommend standards and processes that could improve their overall automation experience, and help promote the culture of automation testing among their project teams.

The Client wanted to:

- Choose an automation approach and strategy for the organization.
- Implement a robust automation framework that would reduce development and maintenance costs.
- Suggest and implement toolsets for automation testing to automate enterprise-wide applications.
- Automate 100 high business-critical test scenarios for Oracle E-Business Suite [EBS].
- Train their functional and business teams in the automation tool.
- Establish a QA partner who understood their industry and business rationale, with the eventual goal of a multi-year engagement.

From start-up to steady state in three iterative phrases

Leveraging extensive expertise with automation solutions, Qualitest created an automation strategy and approach for the Client's QA CoE and helped them select the automation tool that best suited their vast application portfolio. Our teams implemented an iterative process model, with three clear, well-defined phases:



- **Phase 1:** Defined automation strategy and approach, automation tool setup, and proof of concept with the automation tool
- **Phase 2:** Automation framework and automation of the test cases
- **Phase 3:** Steady support and handover to the Client's team

Phase 1: Automation strategy and tool setup

In this phase, the Qualitest architect and SDETs undertook enterprise-level deep dives and fact-finding excursions into the Client's existing automation architecture. Qualitest gained a detailed understanding of gaps in the existing automation strategy and toolset. At the end of this phase, Qualitest provided a precise automation testing strategy, along with a tool that would be used for the steady-state project.

After a comprehensive review of several proofs of concepts, Qualitest identified the right solution to support across the platforms and applications. We recommended Tricentis Tosca as the automation testing platform and set up the tool in the customer's infrastructure. We also recommended and implemented Tricentis qTest as the test management platform.

Phase 2: Automation script development

In Phase 2, the Qualitest architect and SDETs took all the necessary steps to create a robust framework that would reduce overall development and maintenance to implement the automation. We initiated the automation of highly business-critical Oracle EBS test cases and completed them successfully by following the methodology for the project.

- **Engage:** Introduction of the Qualitest team to the project team.
- **Define:** An automation approach document defining how the project deliverables would be achieved.
- **Prepare:** The E2E & RBT scope were assessed to form the automation scope. Considerations were made regarding a scenario's technical compatibility and functional suitability for automation. A detailed plan to develop automated test scripts by the breakdown of the scripts/components to be automated was built.
- **Develop:** Created and enhanced automation scripts as per the identified business functions and parameterized them with different values to run on multiple environments.
- **Execute:** Executed automated test scripts daily to identify potential failures and resolved functional issues with the business SMEs. Produced auditable results for the execution of the automated scripts. Obtained signoff on the automated test scripts by the stakeholders.
- **Maintain:** Formally ended the project engagement, summarized the project, and handed over assets to the Client's Test Team.



Phase 3: Steady state support and handover

In this phase, the Qualitest team provided support to the Client teams to maintain and enhance the regression suite. The team performed all necessary documentation to provide step-by-step details to develop and maintain the regression suite so upcoming releases and executions would be well supported.

Key benefits

The modular framework helped in reducing maintenance and further development efforts. The low-code tool brought consistency in test cases and ensured that even non-business users could understand the automation process and be able to test the application with the test cases introduced. The transformation has helped our Client increase their confidence in regression testing to cover business-critical areas and ensure bug-free delivery.

Qualitest met all the Client's stated goals within the allotted time frame. Moreover, our work has resulted in lasting improvements that will continue to make a difference:

- Tracking of requirements and building E2E scenarios have both been streamlined through the modular structure of functional and automation test cases.
- The Client saved 40% of effort in every testing cycle by the removal of duplicate test cases.
- The Client gets faster feedback is provided through distributed unattended parallel execution.
- Patch and release testing is now supported by business process identification and mapping.
- The Client's dependencies on SMEs have been decreased through self-sufficient test cases with test data and prerequisites.

As a result of this organization-level automation implementation, the Client can move to their major releases with the secure knowledge that their product is tested thoroughly with effective coverage.

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