ALTIMETRIK®

Case Study

Automation: Driving fast and reliable application testing

Client: A Large Pharmaceutical Organization

Reduced regression testing efforts by eliminating 80% of the manual testing effort

Testing made scalable to include new applications

Test reports available in simple, business-friendly language

Reduced operational disruptions and financial loss

Business users create test scenarios with minimal training

Automate test case understanding for easy review and feedback

Background

A large pharmaceutical company had spun off a standalone entity. To facilitate the transition, the functionality of four applications specific to the standalone entity had to be validated in the new environment.

An automated testing approach was adopted, utilizing a Java Selenium-based framework with Cucumber-TestNG for test case definition and execution and Extent Reports for comprehensive test execution reporting.

Pain Point

Over time, applications are fine-tuned to run smoothly in complex ecosystems. They build dependencies on platforms, databases, networks, storage, management tools, plug-ins, devices, and backup processes. However, when a business transitions into separate entities, the applications find themselves in a new environment.

In their new environment, the applications need to be tested as their performance could be impacted by a change in their configurations or their dependencies. Testing ensures functionality is maintained, mitigating the risk of operational disruption. Automation is the only reliable way to execute extensive testing for functionality, input and output reliability (reduce errors), system response, user experience, and scalability.

Key Objectives

Faster validation of apps

For manual regression it was 4 hours/app (16 hours for 4 apps). Automation of regression cases reduced to 1 hour of set up and 20 minutes of execution for all 4 apps

Reduce errors

Historically, sampling was used for manual regression to verify functionality. Automation covers 100% scenarios, reducing the possibility of error from 95% to 0.5%

Scalability and inclusion of additional apps

Identifying repeated scenarios and feature of applications to design reusable components reduced the effort of redesign and implementation and eliminated 60% of duplicate efforts

Solution

Altimetrik implemented a special test framework designed to deliver scalability and effectiveness:

Unified Framework:
All four applications were integrated into a single framework. This enabled centralized test script management and execution, contributing to scalability and ease of maintenance.

Page Factory Implementation:
A page factory pattern facilitated centralized management of page objects specific to each application. This improved script readability and maintenance and enabled the easy identification and utilization of distinct page objects.

Maven Framework:
Maven was employed for dependency management, simplifying the addition or removal of plugins and software components. The framework's built-in organization mechanism further eased folder and file management.

Utility Features:
A common class containing reusable methods reduced scripting complexity. This improved the readability of step definition scripts and resulted in fewer lines of code. A shared utility class served all applications, enhancing the usability and extensibility of utility methods.

Property Files:
The use of property files played a dual role in maintaining configurations and storing test data separately. A common configuration file and individual application-specific test data files were used, minimizing the risk of manipulation and enhancing file-related performance.

Cucumber:
The adoption of Cucumber allowed test cases to be written in English Gherkin language, ensuring clarity and understanding for business users. This feature streamlined test execution and facilitated the step-by-step implementation of test scripts.

Extent Reports:
Integration with Extent Reports provided visually appealing reports with embedded error screenshots. This enriched the test execution experience and helped users identify and understand defective areas.

Utility Extended Methods:
The framework provided an array of utility extended methods, including JavaScript calls, synchronization mechanisms, multiple browser configuration options, parallel testing capabilities, Excel file interaction, and the ability to capture defect page screenshots. Additionally, a rerun option for failed tests was available.

The scenarios covered by the framework included:

- Applicability for all UI testing and Excel validation-based scenarios
- Count validation between source and target scenarios
- Data validation between source and target in UI application
- Functionality-based scenarios (e.g., Switch button, Filter validation, etc.)
- Extensibility to API and database automation
- Extensibility to BI reports testing

The Outcomes

Efficiency

Reduced the time required for testing, allowing faster validation of the standalone entity's applications.

Consistency

The standardized framework enabled uniform testing processes, reducing human errors.

Scalability

The unified framework and the centralization of methods and resources facilitated scalability, enabling the inclusion of additional applications if needed.

Clarity

The use of Cucumber and Extent Reports provided comprehensive and clear test case reports in a business-friendly language, enhancing communication between stakeholders.

Risk Mitigation

By identifying defects and issues early in the transition process, the framework mitigated operational disruptions and potential financial losses.

Conclusion

The successful implementation of the **framework showcased the efficiency, reliability, and scalability of the approach.**

A unique combination of tools, methodologies, and features enabled the smooth validation of the standalone entity's applications during the separation process.

The project **served as a model for streamlined, efficient testing** in complex organizational transitions, contributing to the successful separation of the standalone entity from its parent.

About Altimetrik

Altimetrik is a pure-play digital business services company. We focus on delivering business outcomes with an agile, product-oriented approach. Our digital business methodology provides a blueprint to manage data and develop, scale, and launch new products to market faster. Our team of 6,000+ practitioners with software, data, cloud engineering skills help create a culture of innovation and agility that optimizes team performance, modernizes technology, and builds new business models. As a strategic partner and catalyst, Altimetrik quickly delivers results without disruption to the business.