Infosys partners with PMI Mortgage Insurance Co. to provide “Best in Class” solution improving quality and execution efficiency in testing framework

Abstract

This case study illustrates how Infosys provided “Best In Class” solution for PMI Mortgage Insurance Co. with improvement in all the major aspects of a framework i.e. better, faster and in a cost effective manner. Our solution approach enhanced the performance of the automation scripts in all PMI applications

For more information, Contact askus@infosys.com

Nov 2009
Client Profile

PMI Mortgage Insurance Co. (PMI U.S.), a subsidiary of The PMI Group, Inc. (NYSE:PMI) was founded in 1972, and provides credit enhancement solutions that expand homeownership while supporting its customers and the communities they serve. Through its wholly and partially owned subsidiaries, PMI offers residential mortgage insurance and credit enhancements products. PMI U.S. is incorporated in Arizona, headquartered in Walnut Creek, CA, and licensed in all 50 states, the District of Columbia, Puerto Rico, Guam, and the Virgin Islands.

Key Challenges

PMI had more than five applications which were using WinRunner scripts for testing. The support for WinRunner had been discontinued by HP and hence there was a need to move to latest testing tool QTP. The client wanted to convert the WinRunner scripts to Quick Test Professional (QTP) scripts in all applications while retaining the scope and degree of automation of the current WinRunner scripts during conversion. There was also need to enhance the performance of the automation scripts in the applications. Few of the challenges faced by the client were

- Various versions of the existing WinRunner automation framework were in use across applications which were hard to maintain and reconcile. Standards could not be enforced across frameworks due to time and effort constraints.
- Applications to be automated included proprietary applications developed using Visual Basic (client server), RPG (midrange), and Java (web applications), as well as packaged software from PeopleSoft.
- Test data redundancy was very high and there was minimal re-usability of the WinRunner Data Driven Tests.
- Additional testing scope was identified for functional and regression tests of reports, etc. that were not supported in the existing framework.
- Test reporting to Quality Center was not consistent across frameworks and hence it was difficult to verify test results consistently by looking at the different project reports.
- It was difficult to move QA analysts and automation engineers across projects as thorough initial training was required to understand the different frameworks in use across projects.

The above challenges urged the client to look for IT service provider who could help migrate to QTP tool smoothly while enhancing consistency and predictability in testing framework. Client chose to partner with Infosys based on our industry experience, business process expertise and technology skills coupled with solutions and metrics-driven approach to deliver tangible business outcomes-operational and financial.

Infosys Solution Approach

PMI and Infosys designed a holistic phase-by-phase migration approach ensuring standardized testing framework to bring in consistency and predictability. PMI and Infosys also instituted a strong change management process to enable a smooth migration. After analyzing the performance, maintenance, reusability, normalization, ease of use and cost factors, we selected the following approach as the best feasible solution

Implemented framework

- This approach is based on the concept of Business Process Testing
- Complete application is divided into number of Business Process components based on the business flow of the application.
- Each user action on the application is one step in the BPC
- These BPCs consists of hierarchy in which the application is identified by QTP and the action that needs to be performed
- QTP function reads these values and performs actions based on the steps in BPC, along with necessary validations and reports the results to Quality center.
- Same function can be re-used for any application based on the technology like web, mainframe, visual basic for this frame work
- BPCs can be created even before the build exists, without using Descriptive programming Test Case authoring to be performed in Microsoft Excel, providing a user experience that is easy to learn and maintain
• Business Process Component (BPC) design to provide 100% reusability with respect to steps and test data across multiple test scenarios
• Hybrid framework and customized report structure.

Migration plan
• Automation engineer to establish a QTP test harness by creating call script, process calling module object repository and all required artifacts for one test case
• QA analyst extends test coverage by adding test cases and enhancing the object engine to meet immediate needs of the project.
• This is an incremental approach for all the applications until the migration completes.

This approach resulted in significant improvement in test execution performance compared to WinRunner and test cases were very easy to maintain from QA analyst prospective because test steps and data were normalized in BPC’s

Key Benefits
Infosys was able to provide the following value adds to the client processes
• 150% efficient execution comparative to the existing WinRunner framework resulting in regression time reduction and better chance to increase the scope of testing.
• With 60% migration being done by the QA Analyst, saved half of the investment required for the migration.
• Less maintenance in the scripts gave greater flexibility to the QA analyst to maintain the framework resulting in maintenance time savings.
• Reduced training overhead since implemented solution will be common across all the applications.
• Re-usability of the scripts from one application/project to another project/application saved the migration time required.
• Faster migration for all the applications as scripting was done before even the application was available

Few additional benefits (e.g. savings in maintenance and overall project cost, standardized automation framework and flexibility in staffing) are going to be realized once different programs adapt their test case creation using the framework.
“This was an outstanding project that allows PMI to have a standard, “best in class” testing framework that will reduce cost, improve quality, and allow faster development and execution of test cases. It is rare that all 3 aspects (better, faster, and in cost effective manner) are improved in a single project.”

Bob Jensen – Director, Enterprise Architecture

“I just wanted to thank you for your efforts on presenting the demo last evening. I want to send my sincerest thanks for your efforts as well. This is a very exciting time for the QA group at PMI and any success is due in no small part to your efforts.”

Valarie Kaye – QA Manager