

scintel

Technology for a **Changing World**

Automation Testing - Case Study

Increase-efficiency-and-
productivity-with-test
automation

EXECUTIVE SUMMARY:

Revenue of more than \$26.4 Billion, the client is one of the leading retailers in USA. Client has a chain of mid range department stores, the company headquarters is in Cincinnati and operates over 850 stores in the United States. The system Scintel supported was OMS (Order Management System). OMS support the following pre-production private label sourcing processes. Scintel has been supporting the testing of this application for around 5 years.

In Fortune 500 companies, senior executives are concerned about their IT Expenditures on maintaining the various testing environments and the expenditure involved in testing those environments. Despite the best efforts of manual testing teams, time becomes a constraint and they are unable to execute all the planned scripts every time. Moreover, the testing expenditures have been large for the large maintenance systems.

There are six major factors driving businesses to consider automation tools for testing.

SAVES TIME:

Time is money. Automation testing saves lot of time, efforts and money. Automation testing takes one tenth of the time taken by manual testing. The Smoke test execution time was reduced from 4hrs manual to 30 minutes automated.

BETTER QUALITY SOFTWARE:

More testing coverage. With the present scenario we are able to execute only 20% scenarios in OMS by using orthogonal testing method, whereas once automated we are able to execute all the scenarios every time.

CONSISTENT PROCESS HANDLING:

Consistency comes from having an established procedure and ensuring this procedure is followed every time. This can be achieved by automation.

INCREASED PRODUCTIVITY:

By automating many of the scripts that QA teams are currently executing manually, team can work more efficiently and can take on new or additional workload. QA started supporting smoke testing more environments. There by finding defects in the beginning of build process than waiting to be found in the QA environment.

REDUCTION IN ENVIRONMENT BUILDING / DELIVERY TIME:

With onshore testing, the overnight off-shore testing delay was saved, ultimately consistently saving several days in onshore / off-shore turnaround time while delivering an environment.

INCREASE IN TEAM CONFIDENCE:

The Release team had more confidence in the quality of all the environments. This paper examines the various challenges and benefits of automation of existing OMS application use. Since the number of test scripts were growing our client wanted Scintel to come up with a solution to reduce the number of days in testing cycle that way helping them to achieve the goal of every release a quarter. Scintel came up with a way to automatically test the application quickly and efficiently.

EXPECTATIONS:

The following were the key expectations or the outcomes expected out of this automation project:

- As initial step automate the OMS smoke test.
- Develop a testing strategy that would automate as much OMS test scripts.
- Design a plan to ensure that all the high priority test scripts are automated.
- Design an automated test suite using QTP that would help client increase productivity and thereby meet their goal for more releases in a year.

OUR APPROACH:

The solutions to these business challenges were implemented using teams made up Client and Scintel staff. Using Scintel's proven implementation methodology, Scintel consultants were able to design, automate, and deliver the required automation scripts. User feedback and testing was handled by Client staff. Before initiating the development Scintel made many presentations to the MST explaining the architecture and the data model behind, after which, Go forward approach was provided by MST for automating the smoke test.

TASKS PERFORMED:

The first step was to cross train off-shore resource to familiarize the automation team with the application, getting the hardware and licenses for the automation tools, after which we started automating the Order Management smoke test.

Once the overall testing strategy had been established the following tasks were performed:

- Developed Test Plan/Testing Timeline was developed.
- A dedicated environment for automated testing was identified.
- Designed an automation Framework/Architecture using QTP.
- Automation Framework included reusable actions, which can be easily modifiable to include more regression scripts in future.
- A shared object repository is used. If the objects are stored in the shared object repository they are available for entire application. Shared object repository also occupies less memory than the local object repository.
- Automation Scripts was saved and run from ALM (Quality Center 11.0).

CHALLENGES:

- Multiple interactions and changes to the design in the initial phases of automation.
- Instead of using function library file we are using Reusable action that impacted in our Script integration part.
- We are using QC so we can maintain all the individual scripts in QC itself so that we can track the result of each script in QC itself but for client's request we are maintaining the set of scripts separately.
- Qtp is very slow in client's machine but it is fast in our local machine.
- Many environments are available so each time we change the script to include the new environment. If the entire environment is predefined in the scope itself it would save time.
- Components that are out of scope should be predefined in the scope itself which would save time.

SOLUTION:

The Go forward solution was selected based on various factors. The Solution needs to support long terms goals of easy maintenance automated scripts. It should be easy to include the changes required for future enhance- ments. Technical feasibility in terms of performance (Execution time) has to bethere.

The following were the steps taken to overcome the challenges to achieve the desired results:

- The framework used for the project is Hybrid framework, combination of Data Driven & Keyword Driven.
- Framework was very much scalable, any number of scenarios can be added in future.
- Regular expression has been used to handle dynamically changing objects.
- Reporter Function used to get the actual result along with expected results.
- Global Variable is used as the variables that can be used anywhere in thescripting.
- The functions designed are reusable.
- Synchronization point used to sync the application loading and script running time. No Wait statements at all, which means time taken for execution will be less comparatively.
- Recovery Scenario used to handle abnormal state of the application. This means even if one script fails, execution will continue from next script failing the current script.
- Parameterization has been used for all field inputs and hence no manual intervention.
- Automated the application using only descriptive programming, No record and play back.

THE CLIENT:

The client one of leading retails with over 850 mid range department store and revenue of \$26.4 billion in United States with headquarters in Cincinnati.

INDUSTRY:

Retail and Wholesale.

BUSINESS NEED:

- Automation scripts to automate the application testing.
- Reduce the testing cycle's time.
- Increase the productivity and confidence of the team.

SCINTEL SOLUTION:

- Designed an highly scalable automation Framework / Archi tecture using QTP.
- Delivered the required automa tion scripts.

BENEFITS:

- Growth and scalability.
- Reduced Operation expense.
- Increased Productivity.