

CASE STUDY:

Using Service Layer Test Automation Approach

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Client:

Client is a leading US publisher with core focus on content transition to digital media. They constantly evolve their solutions through research based content, tools and service libraries to enable learning and encourage information discovery.

The company is best known for its full-text magazine and newspaper database, and other online databases accessible from schools and libraries, as well as multi-volume reference works, especially in the areas of art, religion, history and social science.

Challenges:

Client reached out to QA InfoTech and asked if we as an independent QA partner can help them address some of their biggest pain points and challenges:-

- ✓ They were looking for a perfect solution to handle frequently failing UI level test cases even though they were using a very popular automation framework
- ✓ Cost of test automation maintenance was another major concern they wanted us to address
- ✓ Since, they had a poor experience in terms of delay in project releases, they wanted our help to fasten the QA feedback process so that project releases are not delayed due to QA activities

Solution:

We analyzed the situation and found that most of the challenges they had were due to test automation being done at the UI level. We suggested revisiting this approach and taking on automation at the service layer level. This approach would make the test cases more robust because it will remove their dependency from UI changes and will also reduce the effort of maintaining the test suite. Using these tests, QA team will be able to test the services independently without waiting for the UI to be implemented helping bring in faster feedback and catching defects early in the cycle.

Service-layer testing is all about testing the services of an application separately from its user interface - the backend service APIs are tested directly. Our client agreed on this approach and asked us to move forward with Service layer test automation.

We asked the client to expose test environment services to get access at our end and to provide all the required information. We then automated services by using the ICE service that is basically used to establish the connection between service API's and the service layer.

Client Benefits:

After applying service level test automation, here are some of the benefits QA InfoTech was able to provide the client:-

- Automation test suites at services level are more robust because they are independent of UI changes hence test cases will not fail until there are defects/changes in services, bringing down the overall cost of maintenance.
- Service level tests allowed quick feedback cycles because tests were executed as soon as the services are available.
- By testing at the service level, defects were eliminated even before they showed up in the UI, improving overall defect prevention rates
- Better root cause analysis for issues was taken up since they were discovered at the service layer. Some measurable results from our implementation are as seen below:

Earlier test suite maintenance costs	Current test suite maintenance costs	Earlier test suite execution time	Current test suite execution time
\$8000	\$4000	24 hours	10 hours

By Kapil Dev

At QA InfoTech (an ISO 9001:2008, 20000-1:2005, 27001:2005 and CMMI Level III certified company), we specialize in providing independent offshore software testing and, unbiased software quality assurance services to product companies, ranging from the Fortune 500s to start-up companies.

Established in 2003, with less than five testing experts, QA InfoTech has grown leaps and bounds with five QA Centers of Excellence globally; three of which are located in the hub of IT activity in India, Noida, one in Chandigarh, India and the other, our affiliate [QA InfoTech Inc.](#) Michigan USA. In 2010 and 2011, QA InfoTech has been ranked in the top 100 places to work for in India. For more details, please refer to our [blog on this event](#).

"We assure the highest degree of Excellence and Accuracy in our engagements. Once you have placed your trust with us, rest assured we guarantee an elated peace of mind"

- Mukesh Sharma, Founder & Chief Executive Officer

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