



Case Study: How Selenium Automation Transformed QA Testing for a Health Technology Company

Selenium is an open-source framework used by companies worldwide to automate software testing. It is one of many quality assurance (QA) tools/systems that DecisivEdge uses for its clients.

Being open-source, Selenium offers many advantages - it is free, flexible, and supported by a large community that constantly improves it.

Companies can build on top of Selenium to meet their unique needs. At DecisivEdge, we did just that. We created custom tools and reporting on top of it, making it easier to reuse components, scale testing to different projects, and identify issues early.

For one healthtech company - with complex eConsent and patient education workflows - this became the foundation for a more reliable, scalable, and efficient QA process.

CHALLENGE

As the healthtech company built new functionality into its products and services, so did the complexity of its testing needs. The QA team had over 1,200 test cases to cover, but manual testing increased project costs, timelines, and increased the risk of bugs reaching production.

The team's first tool, Tosca, proved limiting:

- High maintenance: Even small product changes broke existing test cases, requiring constant rework.
- Limited coverage: Only 200 - 300 test cases could be automated, leaving most to be done manually.
- High cost: Licenses ran over \$11,000 annually, not including per-user fees.
- Vendor lock-in: As a closed tool, Tosca made it hard to adapt, migrate, or reuse test work elsewhere.

With limited QA resources spread across multiple projects, DecisivEdge needed a more flexible, cost-effective solution to help service the healthtech company, that could scale with its growth.

SOLUTION

The team transitioned to Selenium, combining the advantages of open-source technology with DecisivEdge's custom enhancements. The new approach enabled:

- Reusable components: Common steps - such as logins, navigation and even recover steps (in the event of test cases failing to execute and requiring these fail-safe measures) - could be built once and reused across hundreds of test cases, saving time and reducing errors. In addition, each test case is also composed of sub-processes that could be recycled. Hence, an accumulation of steps and/or individual subtasks could be standardized and reused in the same way as it is done with object-oriented concepts.
- Scalable regression testing: More than 1,200 automated test cases now run every weekend, with plans to expand to nightly runs.
- Higher accuracy and early defect detection: Automated tests catch problems sooner, minimizing production risks and allowing the QA team to focus on fixing bigger workflow issues, and more of them.
- Custom reporting: Automated reports summarize which features passed or failed, so defects are identified quickly and addressed before releases.
- Scalability across clients: Because Selenium is open-source and adaptable, the framework can be applied beyond this client, to other DecisivEdge clients.
- Additional resilience has been added to the framework to facilitate autonomous execution of large test beds. This includes the ability to handle specific execution failures so that the entire test window can continue by skipping only failing test cases. The resilience enhancements were not limited to testcase execution workflow, we also enhanced the ability to deal with test data issues.
- Reduction in training needs: An extra layer of abstraction and tools for test case definition was created to reduce the training needs for test case developers and increase overall productivity.

RESULTS

Besides expanded coverage (regression testing grew from 200 - 300 cases to over 1,200, ensuring broader protection across workflows) the move to Selenium delivered multiple measurable and strategic benefits.

- Time and resource savings: What used to take 3.5 testers working for three weeks (140 hours), now only takes 30 hours to execute the automated test runs.
- Reusable automation: Modular components reduced rework and increased efficiency across test cycles.
- Higher quality and fewer risks: Early detection of defects lowered the chance of issues reaching production, protecting patient-facing workflows.
- Client confidence: With systematic testing and detailed reporting, product owners and clients have more trust in each release.
- Lower costs: By eliminating Tosca's licensing fees and reliance on manual testing, DecisivEdge saved thousands annually while significantly improving output.

In summary, by adopting Selenium, a small QA team achieved more with less. They gained scalability, improved accuracy, and boosted client confidence - all while cutting costs and saving time.

ABOUT DECISIVEDGE

DecisivEdge leads organizations through their transformation journey. We believe that the right mix of people, processes, and technology will drive modernization, business optimization and automation. To learn more, please visit our website at www.decisivedge.com, email us at getresults@decisivedge.com or contact us at 302.299.1570.

* CASE STUDY *