

Improve Customer Retention with Better UX Testing

 **PARASOFT.**



Table of Contents

Customer Experience Done Right Pays Off	2
Validating the Customer Experience.....	3
Solving the Top UI Testing Challenges.....	3
Smarter Selenium with AI-Powered Parasoft Selenic.....	5
Ensuring Success with a Holistic Testing Strategy.....	6



An impressive back-end architecture means nothing if your application is harder to use than your competitors.

Improve User Experience to Beat the Competition

For organizations to be successful in today's highly competitive Business to Consumer (B2C) and Business to Business (B2B) markets, it's all about the customer experience. There's disruption in almost every market segment, with rapidly-changing competitive landscapes (when was the last time you rode in a taxi?), all while it's easier than ever for your customers to switch to alternative solutions. So, while customers need a reason to stay, they are constantly demanding new capabilities. These demands are driving quality at speed, driving the adoption of Agile and DevOps processes, as companies know that delivering innovation and differentiation to the market first is what enables them to win the battle.

Customer Experience Done Right Pays Off

There's a strong business case for delivering and constantly improving customer experience. Data shows that user interfaces make up **40% of development effort** and 47-66% of a project's code can contain **80% of the unforeseen fixes** after delivery. This is all while a full **70% of projects fail due to lack of user acceptance**. The user interface is where our customers use our products – an impressive back-end architecture means nothing to them if your application is harder to use than your competitors.

So what is the return on investment for improving user experience? There are obvious savings in reduced fixes and lower support costs that come with most quality improvements, but the real payoff is in improved customer retention and acquisition, presumably with market share growth. A customer experience [ROI study](#) by Watermark Consulting showed that user experience (UX) leaders outperform competitors in the stock market, 45 points on the S&P index. Companies who built their brands on user experience are leading the pack, such as Amazon, Google, Uber, Lyft, and AirBnB.

FOCUS ON GETTING THE USER INTERFACE (UI) RIGHT

The User Interface (UI) of software is:

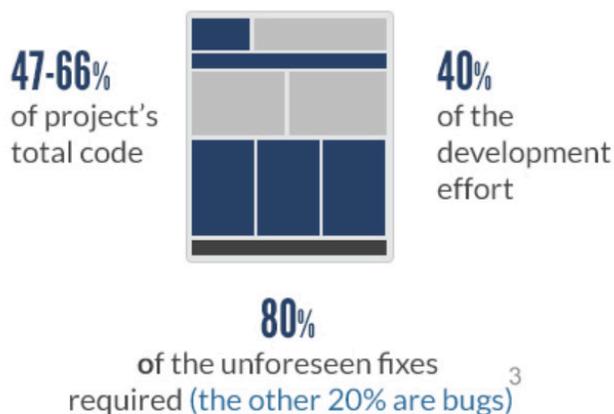


Figure 1:

"Making a Strong Business Case for the ROI of UX" from Experience Dynamics.

See full infographic at: <https://www.experiencedynamics.com/blog/2014/07/making-strong-business-case-roi-ux-infographic>

Validating the Customer Experience

Data also shows that software development organizations are already spending considerable effort UX testing, with some teams spending 80% of their testing effort on the user interface.

Since the UI represents such a significant portion of testing, it's strategic to focus on efficiency gains in the UI testing process. This means automating repetitive UI testing tasks, and preserving precious manual UI testing efforts for your rich, interactive, and exploratory testing activities. But without a reliable, continuous, automate-first approach to quality, you won't be able to keep pace with development and deliver at the speed of Agile.

The data also shows that the majority of UI testing is being automated by organizations around the world with the open-source framework Selenium (see figure 2). Selenium is a mature technology, widely-adopted, facilitates execution on a wide array of technologies (browsers, devices, etc.), and is heavily supported by the open-source community.

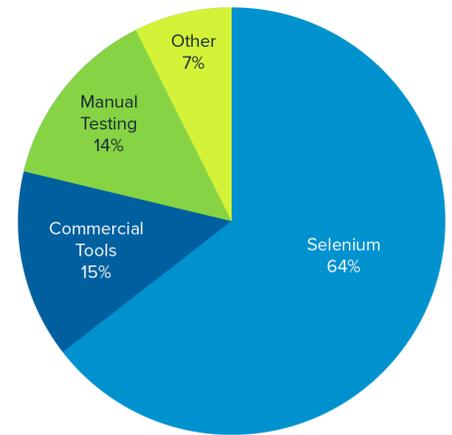


Figure 2: Parasoft Survey of UI testing practices.

Solving the Top UI Testing Challenges

But despite adopting Selenium, or other automated UI testing tools, many software development organizations are struggling to scale their UI test automation, pointing to a number of key challenges, as shown in the results from a recent industry survey in figure 3 below. Clearing these hurdles leads to more efficient UI validation and increased test coverage, which ultimately results in better customer experience. More importantly, more efficient automated testing means precious manual testing time can be dedicated to specific usability testing and improvements.

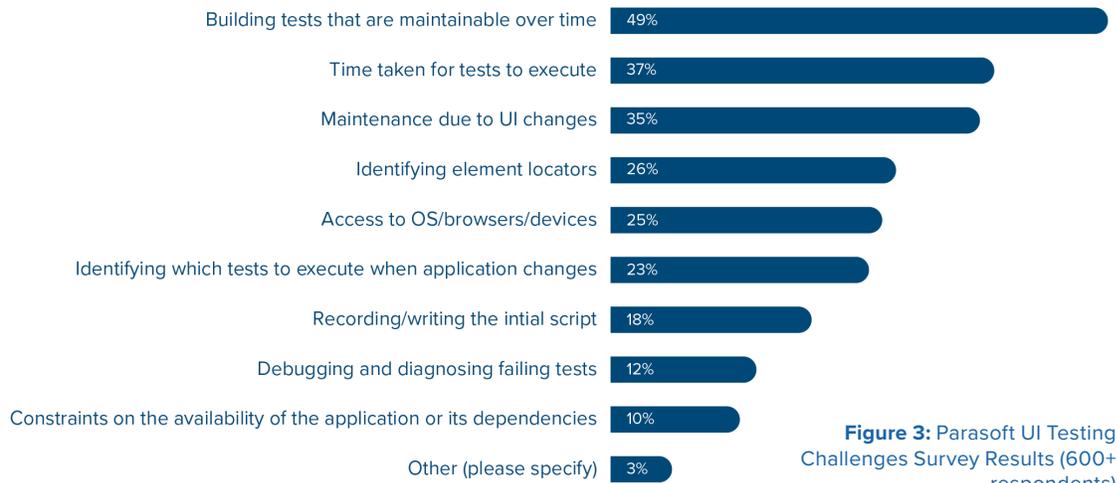


Figure 3: Parasoft UI Testing Challenges Survey Results (600+ respondents)



These challenges impact the business in a major way. Organizations that are resolving these challenges are leading the pack, building successful brands by delivering superior user experiences.

If left unresolved, these UI test automation challenges result in:

Challenge 1

Defects leaking into production due to poor test coverage:

It can be difficult to get the team started with Selenium because it requires technical coding skills, and insufficient automation expertise on the team slows down adoption and usage. With this delay, in the initial stages of Selenium adoption you won't be able to create enough test automation to cover your critical UIs, leading to defects leaking into production.

Challenge 2

Delayed releases due to minor UI changes:

Minor changes to your application's UI can have a major impact on the testing process. The team needs to validate that changes in the application are not compromising the quality of key use-cases, but as the impact of the change is not fully known, they often rely on regression testing to "flush" out any unexpected behavior. The problem is that it is difficult to differentiate between a real regression or simply a test that needs to be updated due to the change. And even when it is identified that the test needs updating, it is often difficult to know what change is needed. This all results in wasted time updating the test automation before you can even begin to certify the application.

Challenge 3

Inconsistent/non-actionable test results:

The team often spends an inordinate amount of time diagnosing automation failures stemming from inconsistent behavior in different environments. You often hear the phrase, "It works in the test environment!" This can happen because of volatile or "flakey" tests that are "good enough" to pass in predictable environments, but are not using the best design patterns to create the valuable, robust tests that you need.

Challenge 4

Delayed view of quality impacting go/no-go decisions:

In UI testing, you can have thousands, if not tens of thousands, of automated test scripts executing continuously, but not all of these tests are relevant to recent code changes. As a result, the team has to unnecessarily wait until the entire regression test suite has finished executing, many of which are irrelevant to what they need to validate for the user experience. This problem creates large gaps in time between when a defect is introduced, discovered, and resolved, leading to delays in the release approval process.

Organizations that conquer these UI testing challenges are driving innovation and success by rapidly delivering superior user experiences to market.

Smarter Selenium with AI-Powered Parasoft Selenic

To solve these challenges without having to abandon the Selenium framework, teams can add [Parasoft Selenic](#) to their UI test automation toolkit.

Leveraging AI, Parasoft Selenic works with a user's existing Selenium tests, to enhance the Selenium framework. Parasoft Selenic self-heals Selenium tests at runtime, and provides testers with automatic recommendations to fix their UI tests that have broken as a result of application UI changes. These enhanced maintenance features help teams reliably move forward to deliver releases on time.

Organizations using Parasoft Selenic report demonstrable ROI in the key areas of challenge that are preventing organizations from benefiting from the promises of Agile/DevOps.

- By self-healing Selenium tests in the CI/CD pipeline, teams are able to spend less time chasing unstable tests when the application changes, and more time uncovering new, real issues that impact usability and user experience. Parasoft Selenic users report a 50% reduction of build failures when activating self-healing during test execution. When testers are using Selenic's AI-powered recommendations to fix broken tests, teams benefit from reducing test maintenance time from hours to minutes, or roughly 80% less time maintaining tests.
- When the development team delivers new features and functionality that everyone is eager to deliver to market, Parasoft Selenic enables the test team with Test Impact Analysis, a modern technology that automatically shows testers which tests need to be run to validate the new changes, and which tests haven't been impacted by the new code. The team gets 70% quicker feedback from the CI/CD pipeline, and is able to release those new features more quickly to their customers.
- When it comes time to get over the learning curve associated with creating new Selenium tests, Parasoft Selenic's plugin for Chrome provides smart test creation of Selenium tests using the Page Object Model, an industry standard that ensures maintainable tests are created every time. Using Parasoft Selenic's smart recorder gives users a 30% jumpstart on test creation.



Ensuring Success with a Holistic Testing Strategy

A strategic testing practice allows you to focus on the scenarios that are critical to validate the customer experience. It is important that you do both manual and automated testing of the UI, where the purpose of automated testing is to expose regressions in existing functionality, while manual testing is used to focus on the usability of new capabilities -- but this is only a part of the holistic testing strategy.

The ideal way to establish an effective Continuous Quality strategy is to allocate your resources in such a way that critical portions of the application are tested as early as possible, spending the most time and effort on building quality into the application with deep code analysis, unit testing, and API testing. Parasoft's complete suite of quality tools can help you make this a reality:

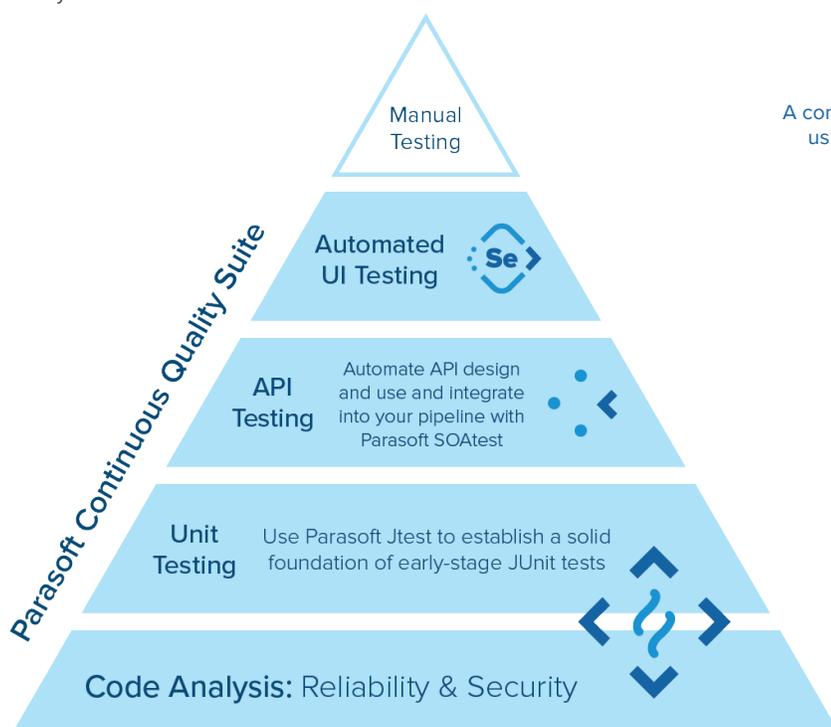


Figure 4:
A complete test strategy
using Parasoft tooling

Parasoft has been leading the software testing industry with innovations that enable the Global 2000 to accelerate software delivery without sacrificing quality or security. From deep code analysis and unit testing, to API and UI testing to shift-left performance testing, and service virtualization, Parasoft is the only vendor able to give teams everything they need to make Continuous Quality a reality and deliver on the promise of Agile and DevOps.

Learn more at
www.parasoft.com

ABOUT PARASOFT

From development to QA, Parasoft's technologies reduce the time, effort, and cost of delivering secure, reliable, and compliant software, by integrating static and runtime analysis; unit, functional, and API testing; and service virtualization.

Powerful reporting and analytics help users quickly pinpoint areas of risky code and understand how new code changes affect their software quality, and groundbreaking technologies that add artificial intelligence and machine learning to software testing make it easier for organizations to adopt and scale an efficient software testing practice across development and testing teams.

US Sales:
+1-888-305-0041

EMEA Sales:
+31-70-3922000

APAC Sales:
+65-6338-3628



Copyright 2019. All rights reserved. Parasoft and all Parasoft products and services listed within are trademarks or registered trademarks of Parasoft Corporation. All other products, services, and companies are trademarks, registered trademarks, or servicemarks of their respective holders in the US and/or other countries.