



WHITEPAPER

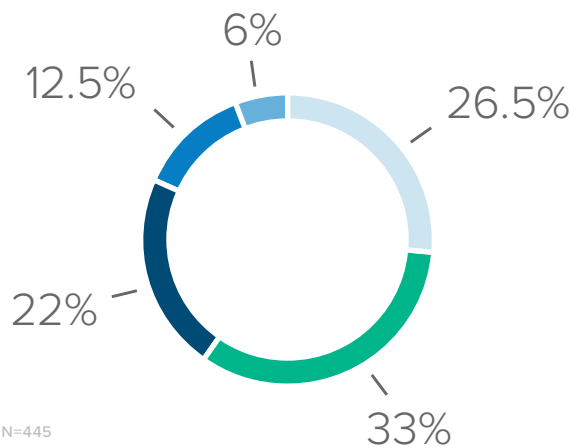
AUTOMATION AND MANUAL TESTING: STRIKING THE RIGHT BALANCE

APPLAUSE^o

60% Of QA Professionals At B2C Companies Are Worried About Their Level Of Code Coverage

In today's fragmented digital landscape, it is increasingly difficult to keep up with the number of devices and platforms coming to market—as well as immense consumer expectations. Engineering teams must work quickly to adapt to the product roadmap, and automation has become the focus of their attention.

ARE YOU WORRIED ABOUT THE PERCENTAGE OF YOUR CODE COVERAGE TODAY?



Sample base: N=445

Why You Need Automated Testing

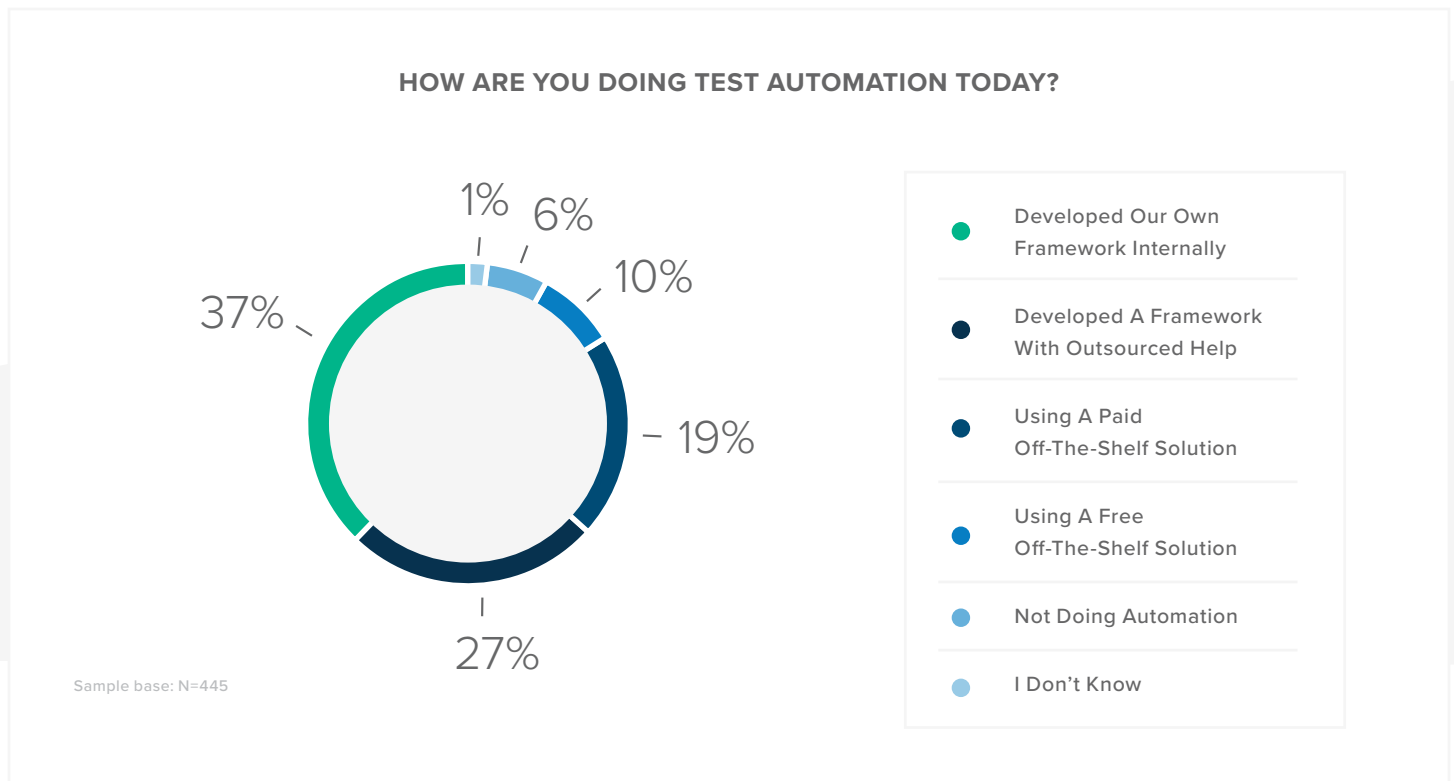
Automation must be a key part of any company's testing strategy as it provides **scalable, reliable, and repeatable results**. More importantly, it allows you to test a broader spectrum of code.

When properly implemented, automated functional tests allow you to rapidly validate a digital property's level of quality anytime there is a code change, infrastructure change, or integration change with minimal manual intervention. Automated functional tests can also verify production integrity and provide the right value without breaking the bank—when used properly.

Automation helps your testing team keep up with the agile development cadence that is necessary for quick responses to unexpected adjustments and feedback. It's also a big step in moving towards Continuous Deployment.

Automation Is Not A Silver Bullet Solution

You may think your website or app is straightforward and that automation can solve all your testing needs, but consumers use software in unexpected ways. Authentic human ingenuity, creativity, and expectations enable the discovery of surface-level and in-depth bugs that you wouldn't think of when writing automated testing scenarios.

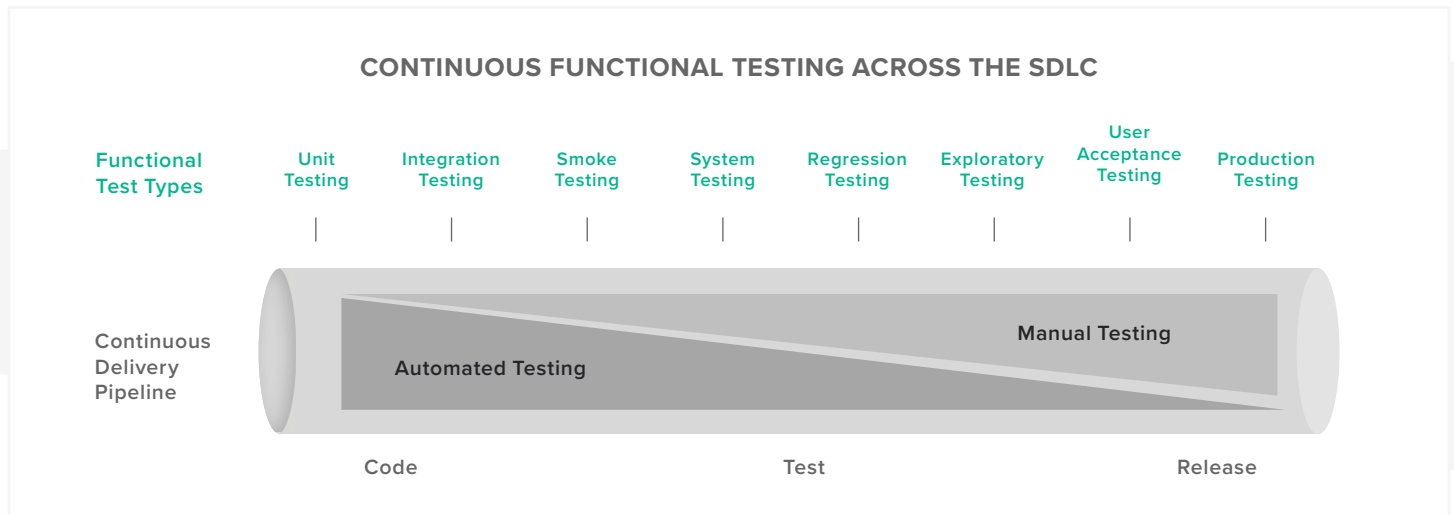


Automated testing covers the use cases as they were designed within your test team's framework. This means that if you rely solely on automated testing for QA, testers that write the automated testing scripts must have the foresight to anticipate any and all use cases that could potentially come into play after release. Not only is this level of insight nearly impossible to achieve, but the ROI diminishes with this level of effort.

Striking A Balance

A structured functional test should be executed for each build in preparation for a release to production. In Continuous Delivery specifically, each committed change can (and should) represent a release candidate if it passes testing.

There are best practices around when to run both automation and manual testing. **As you can see in the diagram below, automation is often used more heavily toward the beginning of the SDLC, while manual testing is more prominent toward the end.** It's important to find the ideal balance for your functional maturity and release cadence, because what works for others won't always work for you.



Evaluating Your Functional Maturity

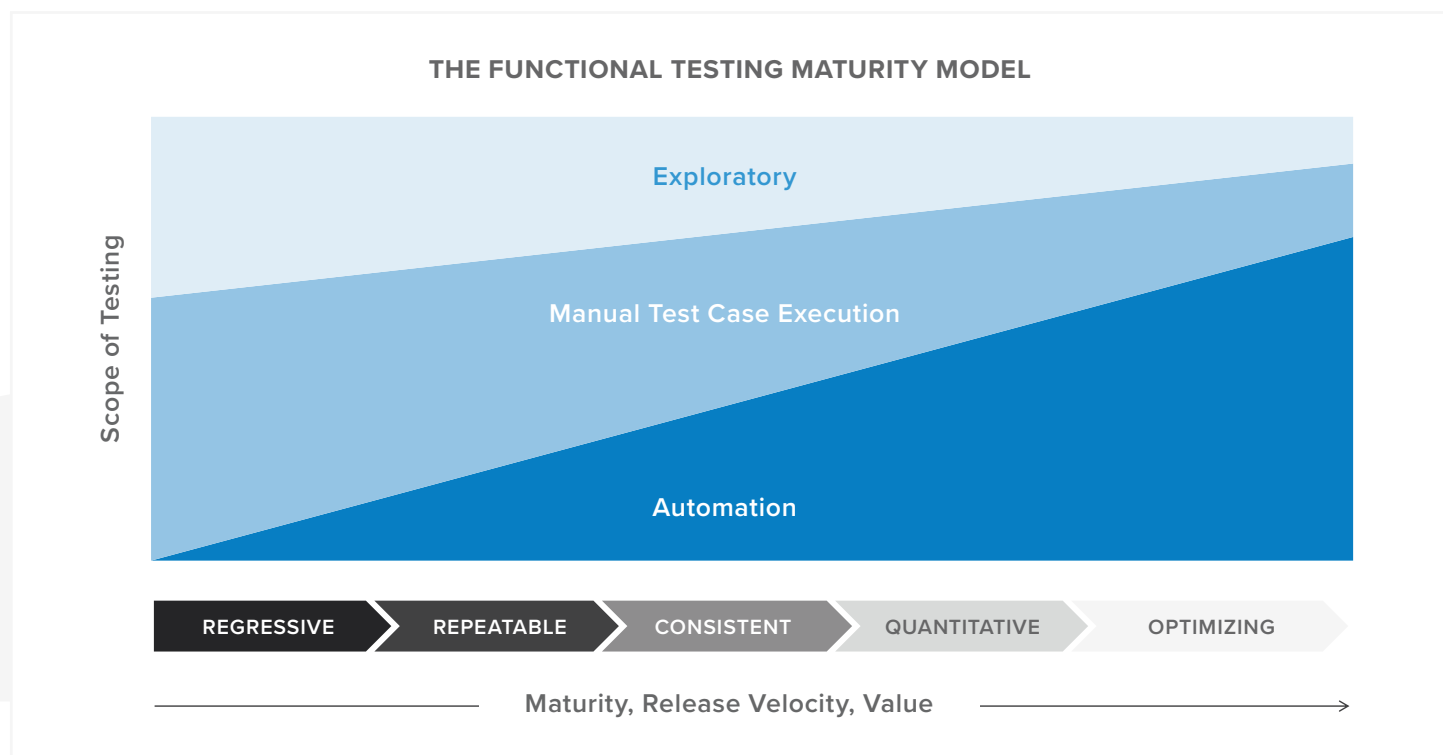
Before you dive too far down the rabbit hole of implementing automation into your delivery pipeline, it's important to understand where you stand as a team so you know where you need to go. Once you feel comfortable with the scope and repeatability of your manual testing, you can begin to introduce automation into your delivery pipeline.

It is critical that you establish a repeatable manual documented process prior to implementing any automation practices. Without a stable and repeatable environment, automation will only amplify your current issues.

To start, focus on your exploratory testing and manual test case execution, then begin to look towards automation for those repeatable test cases. As you mature, the percentage of automated testing will continue to grow, but manual testing will remain an equally important piece of your overall strategy and continue to identify critical bugs.

Where To Introduce Automated Testing

Areas of the application that are more mature or change less frequently are the best candidates for implementing automated testing. Your maturity will help you deduce which tests should be automated versus manual and find issues faster. The right planning will ensure proper coverage and minimal risk.



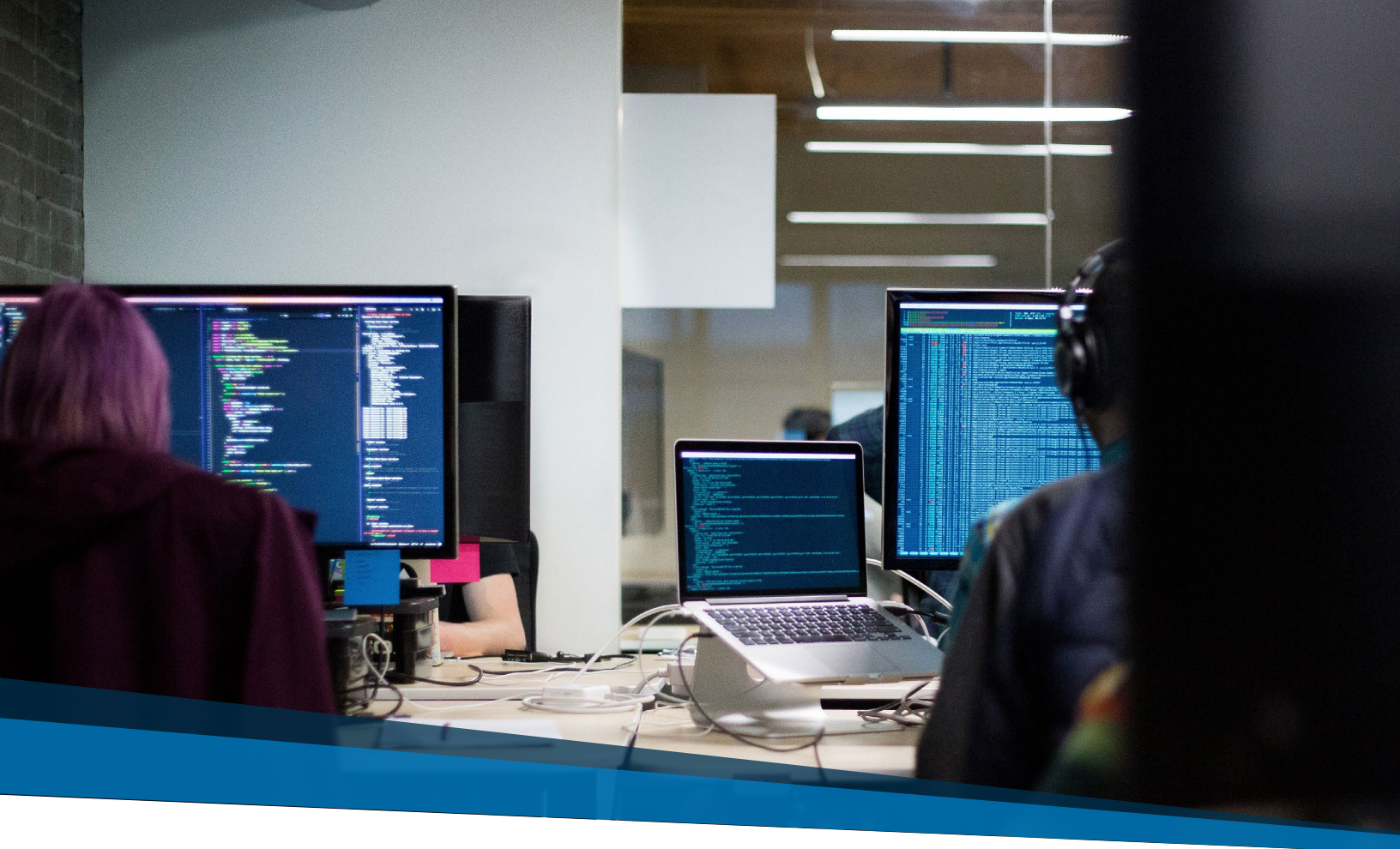
As you mature your testing strategy, the rate at which you are able to verify changes within your application will increase in velocity, allowing you to validate the application for faster release and potentially decrease your time to market. This isn't just true with automation, but with manual testing as well. By automating the right things, you'll also be able to focus exploratory and manual test case execution efforts on the most critical or complex parts of your code.

When To Focus On Manual Testing

As mentioned earlier, consumers use software in ways that were never thought of during your development and testing processes. Think of scenarios like transitioning from Wi-Fi to cellular data or using location-based services on a moving train. There are countless real-world scenarios like these that are not replicable with automation or in a lab, and can only be identified through manual testing.

Leave those less repeatable scenarios to your manual testers. If you try too hard to cover these test cases with automation, you not only waste valuable time, but you put yourself in a position to drastically amplify any issues that pop up along the way.

Ultimately, automated tests should serve as an opportunity for your manual testers to refocus on high-value exploratory efforts like new features and user experience. Since customer experience is often a top priority, this is your opportunity to explore beyond functionality and dive into the design and user flow.



How Crowdtesting Can Augment Your Strategy

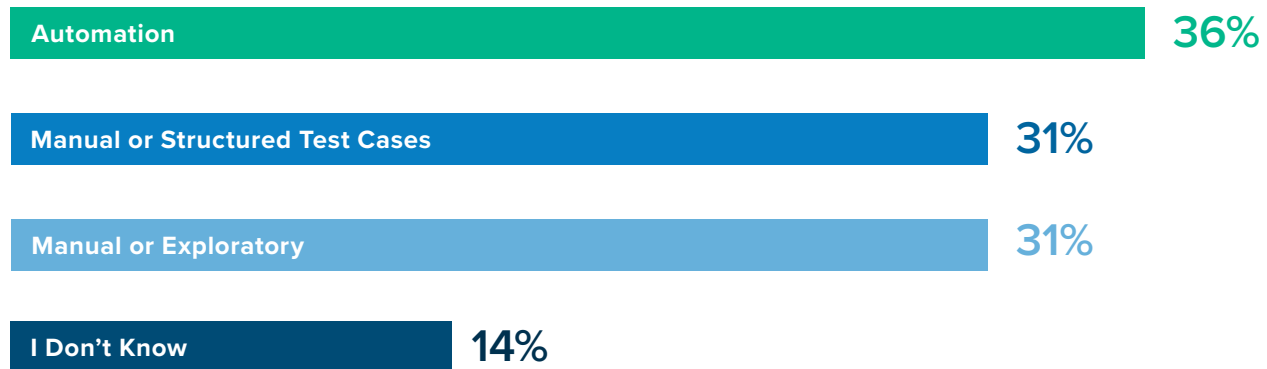
An elastic, on-demand crowd is the perfect tool to implement continuous exploratory testing into your deployment pipeline. This lets your internal manual testers, with deep domain expertise on the product, focus on more complex tasks like test case architecture, coverage, risk analysis, customer experience, and other manual non-functional testing. You can do all of this without slowing yourself down in the process.

In addition, it's the only solution capable of portraying how real customers will use your app in the real world. So not only are you covering a broader spectrum of code, but you are streamlining the customer experience as well.

When you implement the right testing strategy, your team and company stand to reap many benefits.

RECOMMENDED AREAS TO START AUTOMATING INITIALLY:

1. Unit And Integration Tests
2. APIs/Web Services
3. UI Smoke Tests
4. Full UI Regression Tests

WHAT PERCENTAGE OF FUNCTIONAL TESTING IS FOCUSED ON THE FOLLOWING TYPES OF FUNCTIONAL TESTING?

Sample base: N=445

Benefits Of Finding The Right Balance

HIGHER QUALITY TEST EXECUTION

Allowing humans and machines to focus on their core competencies will drive OpEx efficiencies and optimize your entire QA operation. In addition, one automated test can run on numerous configurations of browsers and devices, quickly maximizing your coverage and reducing your risk.

FASTER TIME TO MARKET

When implemented correctly, automated testing increases your release velocity, effectively bringing new features and app updates to market at a pace your consumers can appreciate.

IMPROVED EMPLOYEE SATISFACTION AND RETENTION

By removing tedious work from the day-to-day responsibilities of your testers, you enable them to focus on more strategic testing and broader company/customer needs.

INCREASED CUSTOMER LOYALTY

Effectively applying automated and manual testing across the SDLC results in improved product stability. This results in a deeper level of consumer trust and ultimately a higher level of app usage.

ABOUT APPLAUSE

Applause is the worldwide leader in crowd-sourced digital quality testing. Software is at the heart of how all brands engage users, and digital experiences must work flawlessly everywhere. With 300,000+ testers available on-demand around the globe, Applause provides brands with a full suite of testing and feedback capabilities. This approach drastically improves testing coverage, eliminates the limitations of offshoring and traditional QA labs, and speeds time-to-market for websites, mobile apps, IoT, and in-store experiences.

Thousands of leading companies — including Ford, Fox, Google, and Dow Jones — rely on Applause as a best practice to deliver high-quality digital experiences that customers love.

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