Mobile App Testing: This Isn’t Your Desktop

Are your web testers doubling as mobile testers?
Mobility Testing Challenges and Risks

Introduction

According to the World Economic Forum, a lack of digital focus is the reason over half of the Fortune 500 companies have disappeared in the last 20 years. However, entering into the digital space with a mobile application for your company is more difficult than you might think - as many find out after releasing applications to poor reviews. The ecosystem is fragmented with device manufacturers, device sizes, operating system versions, and mobile network operators that control what OS versions get released on specific phones. This complexity combined with application storefronts that have public forums for end-users to comment on the applications quality or lack thereof, can damage your brand and reputation.

If you have never contemplated whether mobile applications might require a specialized team of testers, please consider the following:

• We are living in a Mobile first world, where many people do all their computer tasks on a phone besides just staying in touch with their personal community: work, shopping, banking, healthcare, entertainment—to name just a few—and no industry is untouched from its impact.

• Not many years ago people were amazed and excited to reach the web on their phones; today they quickly move away from sites that provide a less than stellar experience—and many also decide they do not want to do business in any form with a company that can’t get this right.

• On the other hand, firms that have developed a reputation for a high-quality digital experience such as Zillow, Starbucks, Amazon and firms from the entertainment and hospitality industries have benefited from continued growth.

Why Mobile Testing is Different from Web Testing

• When creating or updating a website, testers are dealing with a specific and standard set of non-functional issues to consider, e.g. pixel density, screen size, user experience, speed, browsers, etc. In the mobility world, testers need to consider all those things for many different devices, and even knowing which devices to focus on can be a challenge.

• As a mobile user, I expect to have the same experience on my smartphone, tablet, or computer, as an example. The application needs to look right, be highly responsive, and work correctly with no broken links.

• As a user, I want to interact with the device using voice, touch or motion, making testing a real challenge. And I need to know that my data is secure, especially if I am making purchases. Mobile testers also need to consider network carrier differences such as 3G, 4G, and now 5G.
Challenges in Multi-Device Testing

With so many device manufacturers and almost no standard interface approach for Android operating system implementation or the frequency of new releases and new devices, it is not practical for companies to purchase every new mobile device that comes on the market—or even the most popular ones.

Cloud services to “rent” real devices are available but the costs are generally prohibitive for occasional use to manually test a few mobile apps, so most companies use a combination of less-expensive emulators and desk-drawer or staff-owned devices. But emulators frequently do not have the same result as real devices and desk-drawer, or staff-owned devices many times do not cover enough of the current device market share. Even when used together, they represent a high risk of publishing a mobile application that does not meet public expectations.

Meeting the expectations of today’s consumers and business users demands the use of real devices for testing to protect against variations in operating systems and manufacturers. Those real devices must cover a significant portion of the device market share to ensure feature continuity and performance for the majority of people who access the application.

Most of the companies that are using real devices are adopting manual testing, and this limits their ability to quickly deploy new features and functionality or to have great code coverage — not to mention the added risk of human error.

Likewise, most companies find it impractical to form a dedicated team of mobility testers. Development priorities vary in focus and timing and it would be rare for a business to have a steady stream of mobile development in a testing phase. Many others also find it overwhelming to build out the tools, and processes needed, along with the difficulty of managing the utilization peaks and valleys of those dedicated testing resources.

Great Performance and User Experience are Must

Our “hustle bustle” world leaves us with little patience for slow-loading pages, links that don’t work, and applications that crash. Even if we are eager to get to a particular business, the importance of that brand drops fast after attempt #2. When we walk away from the app, we almost always also walk away from the brand.

Taking a cue from web testing, mobile testing tends to be feature focused, localized, using simulated conditions, and often ad-hoc in its approach. It may seem nearly impossible to provide the end-to-end testing approach with geographic considerations and real device-side impact that is needed to ensure a positive experience.

Understanding the mobile app behavior and eliminating errors by drilling down to the individual lines of code, optimizing app performance, and staying ahead of outages are challenges to overcome. Understanding how users are interacting with your app, and figuring out how backend services are impacting app performance are also key.

Additionally, many companies rely on customer feedback and manual analysis of data from a variety of sources, which they use to attempt as a quick reaction to issues. What is needed is
a combination of crash detection tools, real time alerts, and synthetic transactions in support of predictive analytics to enable businesses to prevent a bad user experience instead of reacting to one—and this, too, may be cost prohibitive for the majority of firms.

**Conclusion**

It is not helpful to identify risks to reputation, public trust, user experience, and brand perception if the cost of mitigation is not sustainable, so what is the answer?

It seems likely that a new day is looming, where development teams will have an opportunity to share not only devices, but tools, resources, and experience. The future will surely bring increased use of automation in mobility testing also, and this will enable more frequent software releases with fewer human errors. Studies have shown that quality mobile applications promote growth and build reputations for companies in the following ways:

- End users use positive reviews 84% of the time to choose their apps
- Positively reviewed apps make on average 5 times more revenue
- Quality apps drive a 15% increase in customer loyalty
- Excellent enterprise apps improve employee productivity by 10%
- Quality apps enable employees to focus on the roadmap instead of issue resolution

We can also expect to see lower costs for effective mobile application testing and ongoing improvements in application quality for those firms that adopt automated mobility testing by dedicated mobility testing teams. Until then, companies will continue to risk their brands reputation, and possibly their business, on rudimentary and ineffective approaches to ensuring a positive user experience with their mobile applications.

**Ciber’s Unique Approach**

Ciber has implemented mobility testing services across a broad vertical market and brings a unique approach to mobility testing which includes:

- Innovative testing tools, frameworks, and proven processes:
  - Conditional Test Model (CTM) accelerates test case and test data generation
  - Ciber Optimal Pathing (COP) optimizes test cases by writing fewer tests that provide broader coverage
  - ICE methodology to ensure complete requirements
- Testing and monitoring only on real devices that represent current end-user market share
- Plug N Play Library – An automation frameworks library with reusable testing artifacts such as templates and checklists following industry best practices
- Quality engineers who are dedicated to the practice of testing all things mobile

Ciber offers a packaged mobility test automation service with all the above features and capabilities that simplify the mobility testing challenges for our clients.
About the Author

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