In-The-Wild Testing

Ensuring Your Apps Work in the Real World

White Paper

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"Traditional test cycles and traditional outsourcing are simply not sufficient to ensure that you're delivering a quality product adaptable enough to fit all possible customer scenarios."

- Margo Visitacion
Analyst, Forrester

Introduction

Where Users Live, Work and Play

Is your new app designed for testers who constantly update their devices the minute a new platform version is available? Was it designed for developers who spend most of their time in a well-connected office? Probably not. Then why would you rely on a similar environment to test your apps when that's not where your end users actually are?

End users expect applications to work perfectly, instantly. In today's world, companies cannot afford to fix bugs as they appear post-release without risking the loss of users. This mentality puts added stress on in-house QA teams to find more bugs on the same timeline, cover a much wider range of user scenarios and limits the time teams can dedicated to major issues.

The only way to launch apps that consistently work in the hands of users and meet their expectations – apps that are functional, reliable, secure and intuitive from the very first download – is to move a portion of testing *into the wild*. This means professional testers, with real devices, operating under true real-world conditions.

But what exactly is in-the-wild testing, how does it work and why should you use it? We'll cover those topics in this whitepaper, plus include a few examples of companies who have added the in-the-wild approach to their testing arsenal.

Why Test In-The-Wild

The mobile and web matrix has grown to such epic dimensions that it is nearly impossible and extremely cost-prohibitive to cover entirely in-house. There are thousands of device, carrier and platform combinations for mobile alone. Add web browsers, anti-virus software, plug-ins and PC specs into the mix and your testing lab would need to be the size of an aircraft hangar. But somewhere in the world there are potential users for every matrix combination. By moving a portion of your testing into the wild you can identify bugs specific to each combination and prevent show-stopping bugs from reaching your end users. Here's what in-the-wild testing will help you accomplish.

Mirror Real-World Conditions

Suppose your target users are mothers, ages 35-45, living in Latin American. By moving your testing into the wild you can use professional testers that match your exact demographics. This gives you the benefit of traditional software testing while also providing a much clearer picture of how your target users will respond to your application. It also inherently helps with localization, as native testers will be able to catch location or culture specific bugs that may have slipped past non-native developers, translators or testers.

Identify Fringe Use-Cases

Fringe use cases may not be as "fringe" as you'd think. When testing a web application, for instance, it's fairly common to have a QA team verify the app's functionality across all the major browsers. But what about the various third-party applications (i.e. anti-virus, plug-ins, etc.) that mostly exist on the hardware of your users, but not your QA team? Not to mention that many users tend to cling to outdated browser versions that your QA team might think extinct. With in-the-wild testing, you get insight into the unusual, but very real, use cases that can lead to big problems post launch.

> "*You wouldn't believe some of the behaviors we observed on these home machines. When you are testing for performance, it's imperative to know how the software runs outside of the lab environment.*"
>
> \-   Shie Erlich
> Testing Manager, Microsoft

Another incentive to use in-the-wild testing to find fringe use cases is the example of the power user. If you have a popular application (say a hot new game) you will likely encounter some very enthusiastic users. These users may intentionally try to break your application or simply be so involved that they come up with use scenarios that your QA team never dreamed of. Something similar happened to a popular video game during a recent release. Users had the ability to create a custom character earlier in the series, but were unable to port their characters into the newest title. Bugs like this are more likely to be discovered by real-users rather than lab testers who may be unaware of the feature or assume it works as designed.

What to Test In-The-Wild

Remember, users consume applications under various conditions, including:

- Adverse, unpredictable and widely varied environments
- Outdated or unexpected browsers, plug-ins and anti-virus
- An ever-growing list of hardware and devices
- Imperfect connectivity (both wi-fi, cellular and hardline)

To meet these usage needs there are a few things that need to be tested outside a lab.

Connectivity

Testing on different carriers or service providers can be done in a lab, but how does that carrier perform in different locations? Connectivity and coverage can vary within the same city and definitely differs as your users spread across countries and continents. In today's global society you should assume that users will consume your application from locations spread across the world – and you should prepare for this event by targeting a

few key locations and performing in-the-wild testing to check for things like load time, performance and localization if necessary.

Location

Location comes into play for more than just connectivity. If your application is intended to be used globally, or simply in an area that differs culturally from your own, localization testing is vital. L10n testing is more than just translation, it should test for formatting, characters, clarity, cultural fit and a range of other factors that will make or break a localized app.

Devices and Platforms

There are 250 officially recognized Android handsets, eight web-enabled iOS devices and a slew of other devices from Windows, Blackberry and low-end phone manufacturers that will be in the hands of your users. Not to mention the plethora PC options on the market with different specs and a variety of browser options.

Each operating system and browser has several versions currently running. Even officially abandoned versions that are no longer being updated can be found on devices in-the-wild. The truth is, many everyday users are not concerned with updating their systems when new versions are released. If your lab only has the most recent (or even the two most recent) versions, you could miss bugs that will effect a large number of users. Consequently, if you ignore testing on a brand new release, current users who do update their devices could be left in a disappointing lurch when your application no longer functions correctly.

Ultimately, whether you are creating a mobile app, a website or other software, your product will be used by a wide range of people with different hardware and software setups – and you need to be prepared for as many as possible. At the very least, identify the most common combinations and target those.

Benefits of Testing In-The-Wild

We've already discussed how in-the-wild testing can help identify fringe use cases, test within your target market and help you cover the testing matrix. But in-the-wild testing also benefits internal QA departments, keeping the bottom-line in check and freeing-up vital in-house staff to focus on particularly difficult bugs. It also helps keep testers fresh and on-point – which means fewer bugs will slip through the cracks.

Tester Diversity

Testing in-the-wild gives you the opportunity to off-set the group-think that often plagues many internal QA teams. This is particularly helpful in terms of usability testing, where you can involve testers from who are unfamiliar with your app for a fresh pair of eyes and a "new user" perspective. When internal teams become overly familiar with an application it becomes easy to overlook confusing elements or misinterpret ease-of-use.

If you already know how it is supposed to work, it is difficult to objectively assess the application.

Flexibility

Unlike most QA projects, in-the-wild testing is designed to be utilized where and when you need it most. This benefits companies whose QA requirements change frequently (usually those adhering to an agile framework). By nature, testing in-the-wild allows companies to use as many testers as needed – a large group to test usability from an end-user's perspective or just a handful to test on a hardware/software combination not available in house. The in-the-wild tester goes on their merry way once the test is done – making this method extremely cost effective and easily scalable.

Employing several in-the-wild teams allows QA managers to run multiple tests at once – quickening the time to release without burning out internal testers. Pairing flexible outside help with in-house QA teams allows the internal team members to focus on mission-critical or difficult aspects of an application while mundane testing – like basic functional tests and regression testing – can be pushed into-the-wild.

Increase App Quality

In-the-wild testing is similar to running a beta test in that your potential end users are testing the product, but the in-the-wild method focuses that group of potential users to include only professional testers. This will help ensure you receive pertinent, focused and actionable feedback without having to wade through nonsensical or vague "bug reports."

> "**My mother knows when something doesn't work, but her most technical description will be, 'The thingy on the screen doesn't work when I press one of those buttons on the keyboard thing.**"
>
> - Matt Johnston
> Chief Marketing Officer, uTest

By testing in-the-wild, a development team can receive a list of undiscovered bugs 3-4 weeks before they would normally be reported (usually by customers). This lead time gives teams the chance to launch higher quality applications and diminishes the chances of real end-users (or paying customers) encountering frustrating bugs.

Using a new set of eyes also ensures that testers don't become comfortable with often repeated, routine tests. If a tester has performed a regression test every step of the way, it becomes easy to assume everything is fine and inadvertently pay less attention to later test cycles. Comfort and familiarity can lead to missed defects and lower app quality.

How to Test In-The-Wild

In-the-wild testing is best used as a compliment to lab-based testing. Sending a completely untested app to outside testers can be a waste of time and money. Begin by

performing basic tests in-lab, then add in-the-wild testing to cover more specific test cases, such as device, platform and location compatibility.

Though the term "wild" may conjure up images of users around the world running amuck with your new, unreleased app, in actuality, testing in-the-wild can be an extremely controlled situation. Crowdsourcing, also known as expert sourcing, gives internal QA teams access to testers who are also potential real end users. Choosing the right crowdsourcing company is extremely important to ensuring you use professional, trusted, responsible testers. Remember, successful in-the-wild testing focuses on professional testers rather than an open community (like beta testing) and a responsible crowdsourcing company will have practices in place to ensure the confidentiality of your application and the work of their testers.

Also remember that moving your testing to an outsourced or off-shore company is not in-the-wild testing. With outsourcing you encounter many of the same obstacles as in-house testing – testing is done in a well-connected building, likely misses matrix combinations, ignores your target demographic, etc.

In-The-Wild Advocates

Because of its scalable nature and real-world results, in-the-wild testing is used by businesses ranging from start-ups to Fortune 100 companies across a range of industries. Here are a few success stories from businesses that have discovered in-the-wild testing with uTest.

USAToday

USAToday prides itself on its far-reaching mobile presence and strives to create apps that achieve nothing less than a 4.5-star rating. But covering so many different devices, platforms and locations, usually on an extremely tight schedule, is a lot to handle in-house. *USAToday*'s internal QA team didn't want to feel like they were losing control of their apps to outside testers or miss out on top mobile-testing talent – which led them to crowdsourced in-the-wild testing.

"We needed a QA and testing solution that could be part of our in-house team," said Tim Carlson, Director of Mobile Product Development and Operations at *USAToday*. "We have such a close knit team and we wanted to keep that culture, so traditional outsourcing was not even an option. Of course, we also needed mobile experts who could hit the ground running. Mobile is a fast-growing space, but there are surprisingly few people who specialize in the testing side of the equation."

Read more in the *USAToday* case study.

Tongal

Tongal is a creative content startup that was relying on one in-house software developer to create, update, maintain and trouble-shoot the company's customer-facing platform.

As Tongal started attracting big-name clients, it became apparent that they needed a hand when it came to testing and QA. But with a limited budget, they didn't have the means to build out an internal team. Crowdsourcing proved to be a cost-effective and valuable resource.

"We had always developed our platform from a functional perspective," said Rob Salvatore, co-founder of Tongal. "We rarely thought about our design in terms of how a hacker might look at it. Once you start thinking like that, it introduces a whole other dynamic. Thankfully we found uTest to help us with security testing."

Read more about Tongal's in-the-wild testing experience.

Microsoft Security Essentials
Microsoft is always experimenting with new testing methods in a quest to find a practice that will keep up with its high quality demands and fast release pace. Realizing it needed more real-world QA, the company turned to out-of-the-lab testing practices for its Security Essentials release. Microsoft quickly found that testing *can* be done in-the-wild, but it takes just the right approach to maintain a high level of quality assurance.

"We wanted to test across every possible angle, which is impossible if you're relying solely on your in-house team. We needed exposure in areas like South America and China," said Shie Erlich, Microsoft Testing Manager. "Beta's are not as effective as other methods of testing. An issue must affect a large amount of users in order for it to be discovered and reported by a beta community. The uTest community, on the other hand, was able to review the software from a tester's point-of-view, and that made all the difference in the world."

Read more about Microsoft Security Essentials' testing.

Conclusion

Software testing is ever-evolving. New methods come into style and old, outdated ones fade away. While many arguments in the testing world center around "this" versus "that" – manual vs. automated, in-house vs. outsourced, guided vs. exploratory, emulators vs. remote access – in-the-wild testing positions itself as an add on, an extra advantage, a complement to many of these either/or arguments.

Technology is spreading like wildfire and it won't stop any time soon. But more technology out in the field means more situations to prepare for (does your app work in Kenya?) and more versions to keep up with – new, old, older and oldest. User expectations are increasing and demand is becoming almost impossible to meet in-house, and outsourcing isn't cutting it any more. Companies will need to start adopting a multi-prong approach if they want to stay ahead of the competition – and may of the world's most successful companies already realize that in-the-wild testing is the best way to achieve the desired results.

About uTest

uTest provides in-the-wild testing services that span the entire software development lifecycle – including functional, security, load, localization and usability testing. The company's community of 60,000+ professional testers from 190 countries put web, mobile and desktop applications through their paces by testing on real devices under real-world conditions.

Thousands of companies -- from startups to industry-leading brands – rely on uTest as a critical component of their testing processes for fast, reliable, and cost-effective testing results.

More info is available at **www.utest.com** or **blog.utest.com,** or you can watch a brief online demo at **www.utest.com/demo**.

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