

CROWDTESTING: AN OVERVIEW

Crowdsourcing in IT

Crowdtesting (crowdsourced testing) has its roots in the Open Source movement, Mozilla being the most famous organization building on crowdsourced testing and development. As organizations started to explore the potential of vast online communities contributing to various projects it was a logical step for the IT industry to also begin to draw on this new form of human resource pool. In the last decade crowdtesting also became part of the set of tools that companies use to develop commercial software, as it offers previously unattainable scalability and brings the unpredictability of a real environment into the QA process.

Applying crowdsourcing can make the testing process more flexible, always in accordance with the demands of the actual project. It is in no way a challenger of inhouse QA experts, but rather a tool in the hands of IT managers to allocate their resources in a way that provides the highest quality with the lowest possible investment. In this whitepaper we will provide a brief overview of the use cases, processes, merits and challenges of crowdtesting to provide you a better understanding of this new branch of software quality assurance and its possible place in your own QA workflow.

The Definition of Crowdtesting

Crowdtesting means utilizing individual contributors from outside the company in the testing processes, generally through a specialized crowdtesting provider. In the case of traditional outsourcing the testers are employees of the supplier, while crowdtesters are individual contributors from a large online community, usually doing work in their spare time. An adequately large and diverse crowd provides IT managers with an almost infinite pool of testers with different skills to draw on for any kind of testing project.

Best Suited for Consumer Software Testing

Theoretically, crowdtesting can be used to test any kind of software, but it shows its real strength when utilized for testing user-centric products aimed at a large user base. Therefore it is generally considered in case of online and mobile applications, websites and consumer software. Today's consumer applications have to work flawlessly in various environments on a dizzying number of devices, operating systems, browsers etc. Crowdtesting is capable of mirroring this diversity during the testing process to help QA cope with the continuously evolving consumer technology. While consumer software is suited best for crowdtesting, it can also be utilized for enterprise applications. This "Bring-Your-Own-Crowd™" approach, however, requires a different setup and management than crowdtesting for consumer applications.

Internal Testing and Crowdtesting are Not Alternatives, They Complement Each Other

Outsourced testing is often viewed as an alternative for in-house testing teams. On the other hand, crowdtesting is a solution for QA managers to optimize the distribution of resources for every project, outsourcing the tasks more suitable for the crowd and focusing the efforts of the in-house testing experts on the areas requiring very strong domain knowledge. Testing's need for human resources is often very volatile: it peaks before a release and can become almost non-existent after. As crowdtesting is almost always provided on an on-demand basis, it is a cost-effective way to help in peak periods. Given that a crowd is large enough, crowdtesting is almost infinitely scalable: it can provide very large numbers of testers if needed, and can be totally suspended without high transition costs.

Long gone are the days when software quality assurance had to rely only on a single method: today, exceptional quality can be achieved cost-effectively by combining various methods.

The Four Core Advantages of Crowdtesting

Testing on Real Devices

The members of the crowd use their own devices to test software: there is no emulation, no virtualization. The devices are not sterile lab equipment - they are in everyday use, with their owners' favorite applications installed on them. Testing on emulated devices is a good first step to find the most obvious compatibility issues, but to provide exceptional software quality and find all interferences with other commonly installed applications, real devices are necessary. A large crowd provides cost-effective access to almost any real device with perceptible market presence - and every device comes with a readily available tester.

No Labs: Real Environment

Crowdtesting takes place in a real environment. The testers work from their homes, on the go, or anywhere they have time for it. This quality of crowdtesting is increasingly useful in the era of mobility and online services: various connection speeds and types can be tested anywhere around the globe without any kind of simulation.

Infinite Scalability

It is hard to scale QA processes cost-effectively. An in-house testing team is almost non-scalable. An outsourced testing provider employs a particular number of testers and aspires to utilize every one of them at all times. Crowdtesting providers however don't have such constraints when undertaking projects: all of their testers are freelancers readily available for work. If the crowdtesting provider has access to a large enough pool of testers, almost any target group and amount of testers/devices can be accessible within days. A typical crowdtest comprises anything between 10 and 100 testers. This previously unimaginable flexibility can demolish constraints hindering quality assurance processes by removing the bottleneck of scalability.

User Perceived Quality

The issues discovered by testers from outside the company won't all be functional problems: testers first encountering the software often categorize serious usability and design problems as bugs. Instead of dismissing these feedbacks as "noise", using them can help dramatically improve the value provided by the software for its end-users. Anyone deeply involved in the project - like the developers and the in-house testing team - will be blind to these issues so the insights of fresh pairs of eyes are invaluable.

Two Approaches: Structured or Explorative Crowdtesting

When utilizing crowdtesting for functional software testing, generally two strongly different approaches can be taken: structured testing with strict test case management or explorative testing.

Explorative Testing

Explorative crowdtesting can be useful in various stages of software development and is usually applied in conjunction with in-house testing. The approach's main drawback is that it requires very little preparation on the QA's side: there is no need for writing test cases or careful test documentation. Testers execute realistic use cases (on their own or by following a high-level script) thus uncovering bugs and issues that would cause the most problems during real life usage. Explorative testing is a great way to test mobile apps' device compatibility and to regularly sanity test extensive online systems, where wall-to-wall structured testing would be too expensive to conduct on a regular basis. Explorative testing lacks the strict thoroughness of structured testing, but in exchange provides flexibility while being cost-effective. In many

cases a structured testing would be an overkill, as large numbers of testers working with explorative method can uncover enough bugs to keep the developers busy for weeks. As the testers execute real life use cases, it is also ensured that the issues mostly bothering the end users will surface.

Structured Testing

Structured crowdtesting can be used to test a software's functionality wall-to-wall. Depending on the depth of domain knowledge required for the project, testers with specific skillsets can be selected to execute the prepared test cases and document the outcomes. Crowdsourcing works especially well in the case of structured testing, as test cases can easily be grouped into test suites, which can be assigned to the selected testers. Test cases also provide an excellent basis to track the testers' progress during the project. Structured crowdtesting demands substantial preparation: test cases must be very clear and specific, as testers outside of the company generally require more explanation. In certain cases it is also necessary to create supporting documents to explain specific functions of the software or the testing environment. To create a testplan that is mutually exclusive and collectively exhausting – meaning there are no gaps and no overlaps between test cases – takes time and expertise, therefore it is often outsourced to the crowdtesting provider. The required preparations make structured crowdtesting less flexible than explorative crowdtesting, but if a test is repeated multiple times, preparations can be decreased or even omitted entirely. Subsequently, structured crowdtesting is an excellent tool for regression testing and can be successfully applied in agile software development to test the regular releases along the same test cases.

Summary: a new tool for software QA to cope with the challenges of a changed IT industry

Crowdtesting is not the solution to every problem of software QA, but it offers great help to cope with the rapid evolution of consumer technology, the extreme device diversity, and the ever-accelerating software development processes. When used to include IT experts and professional testers from the online community, it provides a large readily available workforce to solve scalability problems. As every member of the crowd owns various devices that they can utilize for testing, crowdtesting provides a huge pool of available test devices. Last but not least, crowdtesting helps to include end-users in the testing process, thus bringing the developers much nearer to the final consumers of their creations. In a new era of IT driven by consumers it is imperative for every company to bridge the gap between users and creators.

Testbirds is a crowdtesting service provider headquartered in Munich, with offices in the UK, the Netherlands and Hungary. The company specializes in the testing of mobile apps, websites and other software for the entire device landscape (mobile, desktop, smart TV, wearables etc.) on all major operating systems. Testbirds uses crowdsourcing to gather the feedback of a multitude of external experts as well as focus groups from different backgrounds bringing a diversity of IT knowledge, personal interests and life experience to find bugs and usability issues.

By using the concept of crowdtesting Testbirds can supply a large pool of testers with a myriad of different combinations of devices and operating systems on a short term basis. The crowd finds bugs and offers valuable advice, tips and suggestions for the improvement of the usability of your software. This is why Testbirds provides efficient, comprehensive, flexible and high-quality crowd testing.

Target Group Relevance

Testbirds has over 60 demographic criteria based on extensive tester profiles to ensure that the crowd of testers represents your typical end user.

Device Diversity

Testbirds' crowd consists of thousands of different devices, operating systems and browser types. Testers test on their own devices in real-life conditions to ensure the consistency of your application across all platforms.

International Crowd

Testbirds has access to more than 65.000 testers internationally. No matter where your target group lives or in what language your software needs to be tested we have testers for you all around the globe.

Unbiased Testers

The diversity of Testbirds' crowd gives you an external perspective unbound by organizational blindness.

Ad Hoc Availability

Is your development team swamped with other priorities? Our testers and project managers work around-the-clock to make time-consuming testing a breeze.

Interested in crowdtesting?

Contact us for a free consultation: info@testbirds.com