



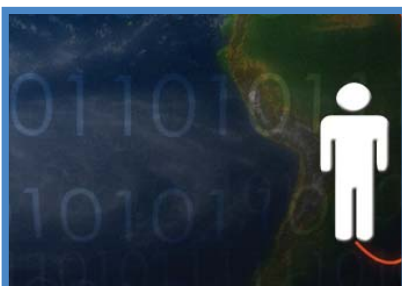
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# Join the crowd: Worldwide testing

by Ewald Roodenrijs and Andréas Prins

The world around us is changing. Borders are fading, more and more companies have a 24/7 economy and the Internet is everywhere. These changes can have an influence on our private lives and on the way we test software! Now we are testing software based on risks, requirements coverage and/or budget. But what happens when we transfer our testing activities to a crowd? This crowd will test it for us and when they accept it, the job is done. Using crowdsourcing for testing is a new phenomenon that will be a substitute for a part of our testing activities. This is called crowdtesting. In this article we will explain what crowdtesting is, what the benefits are, how to manage crowdtesting, what type of currencies are possible and more.





## Crowdtesting

Crowdtesting is derived from crowdsourcing and is: “the use of (un)known people, the crowd, to test software.” In other words, *crowdtesting is the use of a crowd of people and knowledge when testing software applications*. An important difference with traditional testing is the focus of the test. With crowdtesting, this focus is on accepting the software, where traditional testing is focused on confirming fit-for-use.

This crowd consists of people from all over the world with different backgrounds, cultures, knowledge and creativity. There is a potential crowd of billions and they can test for you and your client! Everybody in the world can be part of the crowd, even potential users! This said, the most important part of crowdtesting is the crowd itself and its build-up. The crowd is the success formula of crowdtesting. Thus, who are in the crowd? The crowd consists of all kinds of people that want to test: novices, beginners, experts, (potential) users or people that are just interested.

But how is this different from beta testing? Beta testing is used by some large companies to test their software. These large companies have a great number of followers to use their software. Companies like Microsoft and Google can create software which the public would love to use and thus test! But what about companies who don't have these followers? They can decide to go public with a system for testing, but without the crowd there are only a few people who will want to test, just because they won't know the software exists. Crowdtesting can assist these companies by helping them with a crowd.

Crowdtesting offers the opportunity to use the creativity and diversity of people worldwide when testing software. To create this opportunity, it is good to know what your crowd can and can't do, why they want to test, what their skills are, what their knowledge is, background, etc. This information should be present for your crowd and managed. This can be done in an atlas. This crowd atlas shows the crowd and what its possibilities are.

How can this crowd be built up? This is the most difficult task, because whoever has the best use of the crowd has the best

**“Crowdtesting offers the opportunity to use the creativity and diversity of people worldwide when testing software.”**

possibilities and results. The test crowd can be built up using existing networks, all employees within a company or personnel at customers. This starting point should expand with every use to create a diverse crowd to test the most complex applications.

### Key benefits

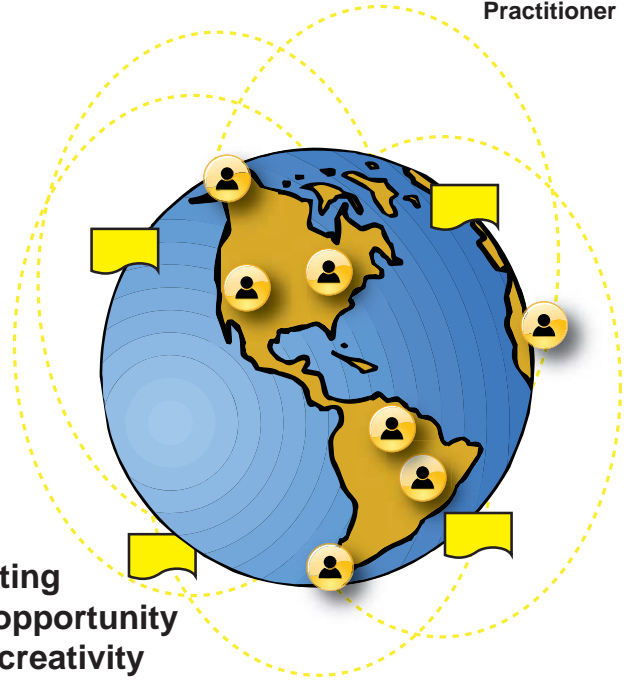
Companies want to reduce costs, or better, upgrade their margins. Crowdtesting acknowledges this. But crowdtesting is more than a cost reduction. It also helps in dealing with the increasingly complex range of platforms and languages, reducing the time-to-market and user support.

A cost reduction is made available through two parts, cost containment and the method of payment. When using a crowd in software testing there is no need for long-term contracts with testers. Testers from a crowd can be added or reduced when needed, thus creating a cost reduction. The payment system with crowdtesting also makes it possible to create cost reduction. A tester in your crowd can be anyone from an expert to a novice, but they get paid according to a model. This model can be pay-per-defect or even non-financial. The use of state-of-the-art software, competition for a higher reputation or knowledge-sharing are all possible reasons for a crowd to work.

The appliances available today are more diverse than ever. People are still working with computers with MS Windows NT as operating system, but also MS Windows 7 or Apple Snow Leopard and every other possible operating system. Also mobile applications are becoming more popular with the mainstream public. This wider range of platforms and languages improves the accessibility of the product. So it is necessary to test across these platforms. In a crowd there are diverse people with even more diverse platforms, languages and mobile options. This way the crowd can test for the inter-operability of the product without the need to buy everything yourself.

The possibility of adding testers from the crowd when needed is a cost reduction, but this also gives an opportunity to speed up the time to market a product. When the time to market needs to be reduced or there is need of a peak of resources, it is possible to add more testers from the crowd to create a shorter test period with the same effort.

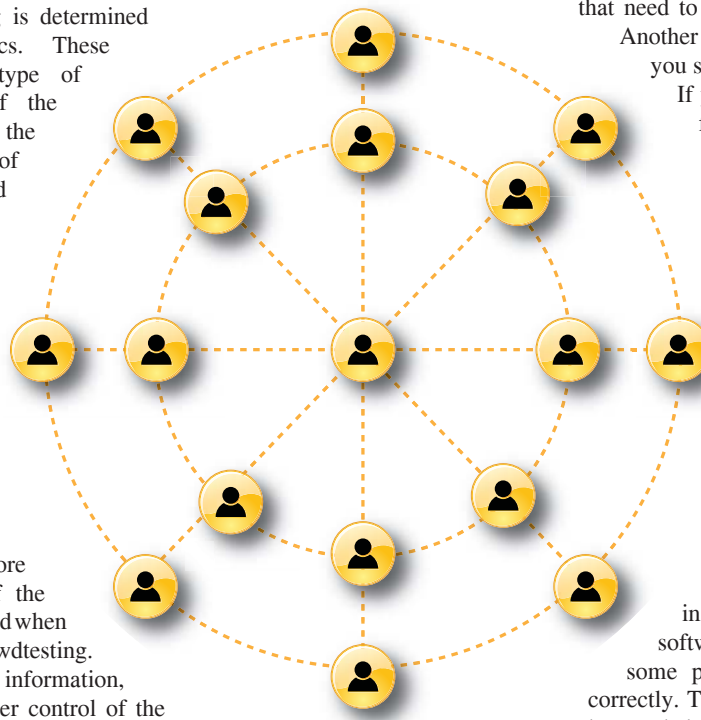
The last benefit is that with crowdtesting you can reach your (potential) users, because the crowd consists of them. These users can be partakers in the software. Therefore they'll become more supportive of the product. This support can be used to spread the word about the software to others, thus creating fans of the product.



## Usage

The usage of crowdtesting is determined by several characteristics. These characteristics are: the type of crowd, the conditions of the testing and the activities the crowd performs. The use of the crowd itself is decided by the customer that owns the work that needs to be tested. Besides this, there are people that join the crowd voluntarily and most of these people will do this in addition to their daily work. This means there needs to be interaction between those two parties.

The type of crowd, and more specifically the control of the crowd, needs to be determined when preparing a project for crowdtesting. If a project has classified information, you can imagine that greater control of the crowd is needed. For example: compare controlling the test of a system for mortgage calculation with a free online game without any prizes to win. You want more control on the mortgage calculation because this contains confidential information in the calculations. Therefore, you cannot use just anybody to join the crowd. With a more classified system you need more control. A smaller group of people can join - in this specific case, only the people from the company itself.



Before you transfer the application to the crowd there are some conditions to fulfil. Think about the system tests that need to be done in an earlier phase.

Another important condition before you start is to define the test goals.

If you open up your application for a test in the crowd, it has to be clear what kind of aspects of the application need to be tested. What is also important is the availability of the testing environment. This is where 'traditional' testing companies can play a role. Think about the capacity and experience they have with organising and creating testing environments.

There are more conditions that need to be covered: for instance, the crowd base - your software must be able to extract some parts of it and still execute correctly. This is because when parts are tested enough by the crowd, they must now focus on other parts. If people have all the functions of an application, they'll probably focus on one particular function. If you switch these off (and later on) they can't test it anymore, they will automatically focus on the other functions.

During crowdtesting many activities can be carried out, like (user) acceptance testing, multi-platform testing, end-to-end testing, game testing and beta testing. Specifically, the multi-platform testing is very suitable for this; the crowd has all the devices that are needed available! In the crowd are all types of users. If they give feedback, they give real user feedback to improve the application. Instead of a small user acceptance test team, you can have an enormous crowd that can test the application you've built.

## Payment

The payment model is different from the one current testing companies have. Not only money but also *reputation* is an accepted currency in the online community. If we make a comparison with a development crowd, we see that working on a Firefox plug-in or software like Open Office is an honour. This can also be applicable for the test crowd. Reputation and honour can be a currency. This already happens at different places around the world. In many countries, 'testing weekends' are starting up. In a testing weekend, people test one or more specific applications and most of the time they do this for free. The social reward, international contacts, a bigger social network or acquiring knowledge are important incentives to join crowdtesting. Working together in a crowd is working outside the boundaries of your company and/or country. This opportunity creates new contacts and lots of other exciting challenges.

Besides the non-financial rewards there can be also some financial rewards. The traditional payment models for testing are not always applicable, but a payment model like pay-per-defect

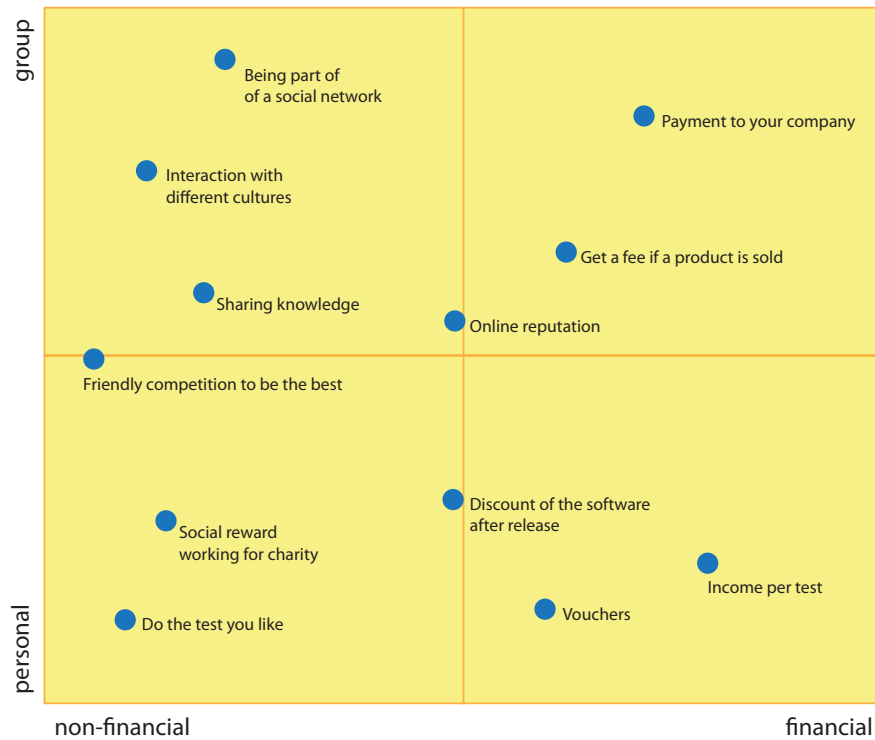
“...you cannot use everybody to join the crowd. With a more classified system you need more control.”



works very effectively. In this case the defect must be unique and must be true. Vouchers are other options for payment. If you join a crowd during a beta test, the reward can be a reduction on the price of the product if you want to buy it or a voucher to get one product for free.

### Conclusion

Crowdtesting already exists with some particular facets, but these things are rather small and not available to all companies. Crowdtesting will change in the future as we are working more and more together. This change adds another view to testing and creates a new feature in which we are more and more connected to each other.



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## Join the crowd: Worldwide testing About the authors



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