Usability Testing: Key for developing high quality mobile applications

What is Usability?

Usability specifies the ease, elegance and clarity with which a user can perform a task to achieve a goal. Focusing on usability and user experience is a key element in creating successful high-quality applications. Usability ensures that the user is able to interact with the application properly and a positive user experience makes the use emotionally desirable and pleasing.

What is Usability Testing?

Usability testing is a black-box testing technique. The aim is to observe people using the application to discover errors and areas of improvement. A usability test is a technique to assess the ease of use (or a few other factors) of an application by asking a tester/user to actually use the application and observing user behavior with the application.

Need for Usability Testing?

The mobile application usability testing is more important than computer-based usability testing because there are a lot more constraints on mobile application as compared to computer applications like

- Small screen size
- Type of Input devices available
- Resource constraints like limited memory, storage area and processor speed.
- Diverse usage environment
- Limited user experience
- Physical movement of users

With so much of constraints, there arise more chances of something going working in the usability of the application and hence it needs to be tested more appropriately.

Goals of usability testing

Usability testing generally involves measuring how well test subjects respond in following areas:

- **Performance** – Measure the time and the number of steps required for completion of basic tasks? (For example, load time of application, exiting an application, moving to next screen, etc.)
- **Accuracy** – Is the application giving required results within a defined tolerance level?
- **Memorability** - How much does the user remember afterwards or after periods of non-use?
- **Errors** - How many errors do users make, how severe are these errors, and how easily can they recover from the errors?
- **User satisfaction or Emotional response** - How does the user feel about the tasks completed? Is the user confident, stressed? Would the user recommend this system to other people?

Methods of Usability Testing

- **Paper Prototyping** - This is the easiest way to prototype your mobile application interfaces, because most mobile interfaces are simplistic. Let the testers/users have a look at it and give feedback about the ease of use.
- **Working Prototype** - This can be done by proving a working prototype of the application and receiving feedback from testers/users.

Guidelines for usability tests with mobile applications

- **Which mobile phones are needed to be considered for testing?** Testing with every mobile phone is impossible. You need to narrow down the number of devices you need to test. Your mobile application users may belong to a specific audience - Certain audiences tend to prefer particular types of phones (e.g. phones with big screens that are designed to support online access vs. small-screen models that aren't). So consider only those phones for usability testing in context of the mobile application being developed.
  There are 'phone families' that offer a very similar user experience and will not need to be tested individually.
- **Locations of mobile usability testing sessions :** Mobile phones are used in the real world so usability testing should therefore not only take place in a usability laboratory but also in the 'outside world'. Especially for mobile applications like

maps navigation, digital compass display, etc testing the usability outside labs is more necessary. Any of the following circumstances could influence the user experience and therefore must be consideration while usability testing:

- Lighting
- Background noise
- Distractions
- Concurrent tasks (i.e. The user is doing some other work at the same time)
- Physical movement

- **Test from concept to completion :** Make sure you are conducting usability tests at all stages of development.
- **Variety is the key :** When you're testing the working prototype, make sure you are testing it on multiple platforms.
- **Remember the diverse user inputs available :** Mobile devices differ in screen size and layout, but they also differ in the ways that people input their information, whether it be a QWERTY keyboard, stylus, numeric keypad, or dial-wheel. These should all be taken into consideration while testing.
- **Know in advance which types of mobile units your audience is expected to be using :** It's likely that is won't be an incredibly large list, but you should plan on testing with all of them.
- **Choose the underdog :** Use the "least likely to succeed" model of your mobile devices when testing. This way you can make sure that "if it works on this, it will work on most!"
- **Analyzing the usability testing results :** Just performing the usability testing is not enough. Proper analysis of the test results is necessary. After usability tests have been completed, gather as much information as possible. This will allow you to judge whether the application expectations have been met and to do necessary modification to the application to make it more usable.

References :
http://www.webcredible.co.uk/user-friendly-resources/web-usability/mobile-usability.shtml

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