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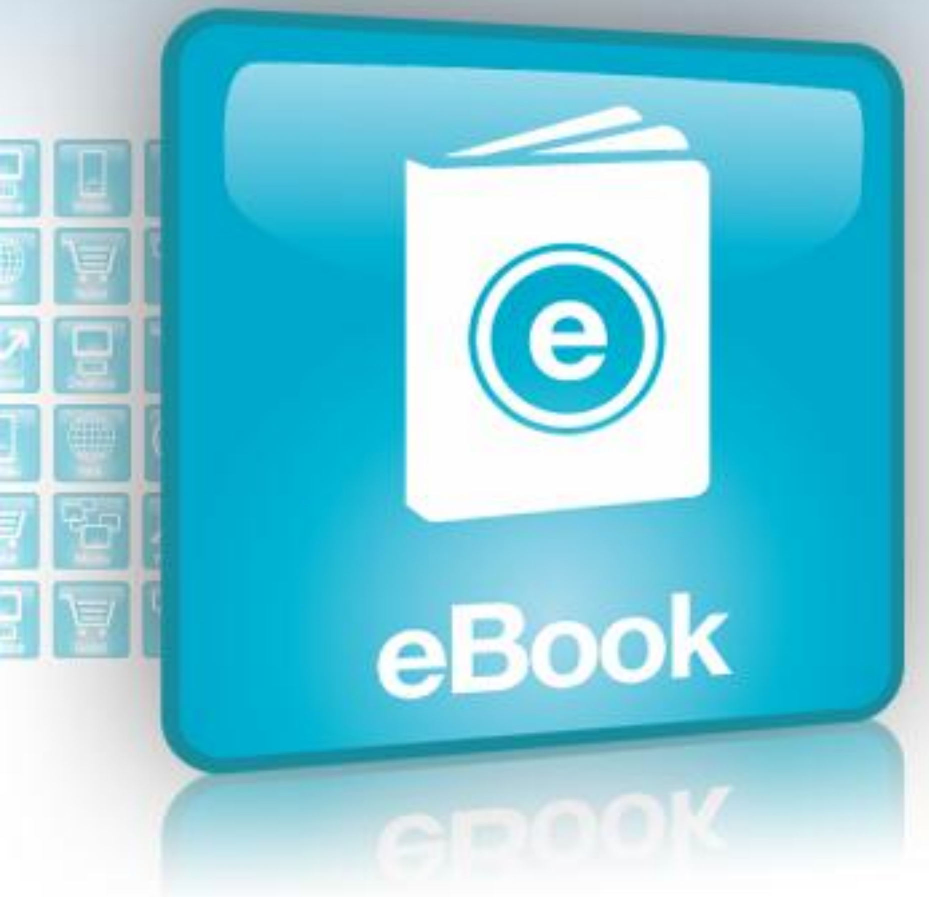

The Keys to Mobile Usability

How to develop, test and launch user-friendly mobile apps & sites

A Free Book from uTest

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“In mobile app markets today, users have an instant, strong, and public vote on the quality of an app through star ratings and comments. Interestingly, they don’t often complain about failed unit tests – what matters is any impact on their experience. Be sure to focus on integration, network fault tolerance, the device, other apps, and most importantly, user perception and expectations.”

- Jason Arbon, Engineering Director, uTest

Introduction: Why is Mobile Different?

The success and popularity of a mobile application (or mobile website) is directly related to its general usability. But instead of focusing on usability throughout the development process, many developers give it proper attention only after a bad App Store review. By then, unfortunately, it's usually too late.

How can this be the case? Well for one, the mobile app ecosystem is vastly more complicated, with an array of different screen sizes, input methods, performance standards and other factors. The mobile space also remains relatively new, which means that guidelines on usability are extremely hard to come by – until now.

With tips and tricks for companies of all sizes, this brief eBook on mobile usability will show you how to:

- **Prioritize**: Where screen size, data speed, input methods and other UX criteria should rank in your mobile test plans
- **Design**: Guidelines and advice for designing on the mobile web, as well as native apps and hybrid apps
- **Evaluate**: How to obtain, analyze and act on real-world feedback from your dedicated focus group

Make no mistake: Your mobile future is directly tied to the overall usability of your mobile app or site. Those who ignore the emerging standards do so at their own peril. Those who continue reading and implement these tips and tricks will gain a permanent edge over the competition.

Let's get started…

Fun Fact: By 2015, International Data Corporation (IDC) predicts that 182.7 billion mobile apps will be downloaded. That's a 1600% increase from the 10.7 billion apps downloaded in 2010. (source)

USABILITY FOR THE MOBILE WEB

Usability Challenges of the Mobile Web

The mobile web provides a very different set of challenges than regular websites, not to mention native apps (more on this shortly). What were once considered best practices for navigating a webpage can be infuriating to a mobile user. Some of the more notable challenges for building mobile web apps include:

- **Small Screens** – Compare that fancy 24" LCD display sitting on your desk with a 4" mobile phone. That's a whole 20" that gets lost, and it radically changes how people interact with a page. Content has to get shorter and to the point. Information counts, verbiage does not.

- **Biological Input Devices (AKA, fingers)** – The rise of the smartphone has also been the rise of finger-driven computing. Gone is the age of styluses, rollerballs, and keyboards. Your users are interacting with your website directly with their fingers. That means that even though your screen size is now smaller, your links, buttons, and other points of interaction need to be bigger so that clumsy fingers can do their work.

- **Limited Bandwidth** - Measuring the size of your website is like figuring out your weight. You might be able to convince yourself that you're not as hefty as you think, but mobile apps are kind of like Speedos. Once you put one on, you realize you're not kidding anyone. Bandwidth can be slow and unreliable for mobile users, even on 3G or LTE networks. Websites with hefty image files, style sheets, JavaScript files, and more will need to go on a diet.

- **No Flash** - Your splashy menu interface that you spent good money having a web designer build in Flash - now obsolete. Most mobile devices either don't show Flash or show it so poorly that most users disable it. The primary selling point of Flash - that it's installed on 98% of computers on the Internet - is simply no longer true in the mobile world.

DIFFERENT USER PRIORITIES

Mobile users browsing from your homepage are probably looking for very specific information quickly (they are on the go, after all). That means rigorous optimization of your site to ensure that it answers important questions quickly. But don't think you can skimp on the rest of your content!

Ux Usability

Mobile Web: Tips for Success

Despite the many challenges, it is possible to build a usable mobile website if you follow some conventions. For example:

- **Put important info at the top of the page.** The most important and frequently used tools by mobile users should be at the top of your site.
- **Make it easy to find secondary information quickly**. Even if your visitor isn't looking for the most frequently accessed information, they should still be able to find their content quickly. Make it easy to locate content either with a navigable sitemap or a search box.
- **Use a single column layout**. Multiple columns are difficult to navigate on mobile devices.
- **Less navigation is good navigation**. While you may be able to build complicated sitemaps on a regular website, a mobile website needs to make it easy to find the most important information quickly.
- **Make sure your data is short and easy to load**. Larger sites take longer to load over slow networks. Mobile users want answers now, not after 80 JavaScript files from different ad network and affiliates have finally loaded.
- **Design for fingers**. Anything the user will be expected to tap should be at least 30 – 40 pixels in size. Also, put plenty of whitespace between tappable elements to avoid accidental clicking on the wrong thing.

By the Numbers: A year and a half ago, mobile users tended to spend considerably more time — an average of 64 minutes per day — using the Web browser on their phone or tablet. By comparison, they spent only 43 minutes per day in apps. Now mobile users now spend an average of 94 minutes per day using apps, but just 72 minutes browsing the mobile Web. (source)

Ux Usability

Mobile Web: Tips for Success

- **Avoid obsolete web technologies**. This includes those that are only relevant on full-sized screens, such as Flash, Java, pop-ups and frames.

- **Reduce the number of forms you expect users to complete**. Mobile devices aren't as convenient for filling out long and complex forms. Cache form data if you can. If you must have forms, make sure the form field boxes are large, easy to tap, and easy to read.

- **Don't let content overflow within divs**. While iPhones support scrolling with two fingers in overflowed divs, most people don't know this.

- **Scale down**. You don't have to offer all the content and features of your full site on a mobile site. In fact, you should aggressively cut down on the content of your website to only include the minimum features your users expect.

- **Easy navigation**. That said you should make it easy for visitors to find your full site from within your mobile site. Those mobile visitors looking for a feature on your full site will thank you.

- **Smart search**. Be smart about routing visitors to pages from searches. If a mobile user is looking for content that is not available in a mobile experience, then you should route them to the appropriate page on your full site. Nothing is worse than not being able to access a piece of content on a mobile device just because it doesn't have an equivalent mobile webpage. And whatever you do, don't just redirect visitors arriving from Google to an irrelevant mobile homepage and hope they can fend for themselves. They can't.

Pros and Cons: "Apps have the obvious downside of requiring more development resources, especially to be truly optimized for each device. If a company doesn't have enough resources to do this right, it's better to have a nice mobile site than a lame app." – Jakob Nielsen

Mobile Web: Tips for Success

Those are some of the more frequent usability hang-ups on the mobile web. Here are a few tips for some of the less common problems:

- If you have a phone number on your site, make sure it's in a text format rather than an image. Most smartphones will recognize the phone number and make it easy for the user to dial by simply tapping the screen.

- Most mobile browsers will accept hints about page layout on a mobile screen. Use these wherever possible to ease user engagement. For example:

    - It's possible instruct iPhones to not allow page zooming. This makes it easy to display a mobile web page full screen without forcing the user to zoom in and out of portions of a page optimized for a larger desktop display.

    - iPhones also take hints about form input types, and will display the optimal input mechanism when that form is chosen. For example, if a form field only accepts numbers, then the iPhone will only display a number pad. If the field is only for email addresses, the iPhone will display a keyboard optimized for email addresses.

- Use a sophisticated mobile framework to ease your development process. For example, jQuery Mobile has a variety of input widgets and tools to make it simple to put together an attractive, cross-platform mobile webpage.

The Post-App Economy: "The simple fact is that HTML5 and browser-based websites and services make much more sense for many content providers. For instance, look at the HTML5-driven websites for The Financial Times and BostonGlobe.com. These kinds of apps are cheaper and more convenient to develop, deploy and deliver all the essentials of a mobile content app. The same goes for sites and apps aimed at local businesses." (source)

Mobile Web: Tips for Success

One thing to consider is putting your entire mobile web content on a separate sub-domain. Typically these are called "m." domains, because they usually come in the form of m.example.com. The advantage of these domains is that you can automatically route a user to a version of your site with a dedicated mobile experience.

The disadvantage is that if the user was searching for specific content via Google that doesn't exist in the m. site, they may have difficulty navigating to find it in your regular site. If you choose to go this route, consider setting the user's choice about whether or not to use the mobile site in their browser cookie. That way, if they choose to leave the mobile site because they can't find a piece of content, they won't be taken to the mobile site again if they navigate back.

An alternative is to use smart user-agent detection and to send regular or mobile content to the user depending on the kind of device they're using for browsing. The upside of this that there is no need for an m. site – the visitor will be shown only the most relevant layout for their device. The downside is that it's more complicated to implement and maintain. Like before, try to remember their choice about which version of the site they want to see in a cookie.

The bottom line: It's not impossible to launch an intuitive mobile website, but it is extremely easy to launch one that will confuse users. Make sure you take usability testing as serious as you do on the web. Test accordingly.

Mobile on the Menu: "Restaurants just love to put Flash intros with auto-playing music and animations on their front pages. If you are trying to look at one of these sites on your mobile browser without Flash, chances are there is no way to bypass the animation and get to the information you want because the complete site was designed in Flash." (source)

USABILITY FOR NATIVE MOBILE APPS

Usability Challenges of Native Apps

While there's much promise for the mobile web, the fact is that today it's all about native mobile apps – but why? What is it about native apps that give them the edge in the mobile world?

For one, they're more flexible. Apps can provide functionality even if the user is away from a mobile network, and they can be customized for the actual device's screen and hardware. With these advantages, plus direct access to the underlying hardware, they can provide a richer user experience with more media and interactivity than what the mobile web presently offers.

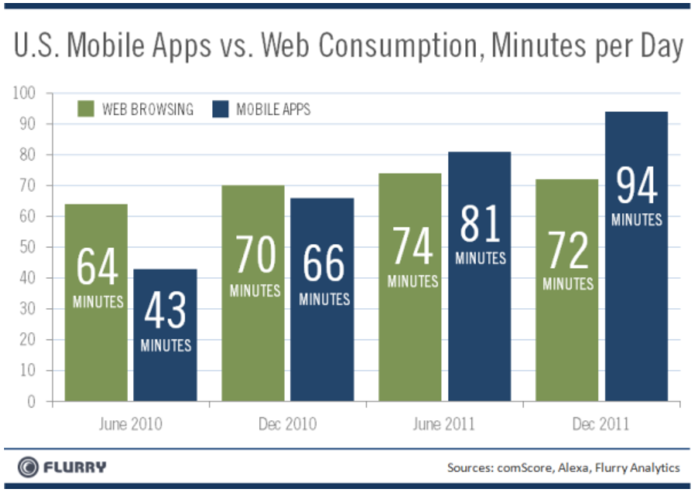
In some cases, a mobile app is the *only* way to solve a particular design problem, such as with video games. The mobile web is not yet sophisticated enough to build rich video game or interactive applications.

On the other hand, mobile apps have to be developed, often times in addition to a mobile website. That means more cost, maintenance, and time. For many companies and developers, it's not an "either / or" choice. It's "both."

Here's where things get complicated from a usability perspective: Native apps require a user to find, install and launch these apps (all common usability issues).

Apple has an advantage with a unified app store, while Android users may have to look in many different app stores to find your app. Either way, you have to find a way to promote your app in addition to a mobile web experience.

This is barely scratching the surface of usability problems associated with native apps. Let's take a closer look….



Web Neglect: "While there's always a danger, I think most companies realize that they cannot ignore their main website just because they get a mobile site or app. I usually emphasize that the usability guidelines for mobile are very different than the desktop guidelines, using this as an argument to design a separate mobile UI." - Jakob Nielsen

Ux Usability

Usability Challenges of Native Apps

Getting usability right in a mobile application offers many of the same challenges as a mobile web site. On the other hand, you are not constrained by many of the challenges of mobile web usability – namely that there is no assumption about the platform (mobile apps) having a long history of working with a keyboard and mouse (like the web). That said, there are a substantial number of new challenges inherent to mobile apps.

Here's one way to think of it: We're back to the late 90s in terms of standards, including:

- Lack of accepted usability guidelines
- Lack of screen resolution standards
- Lack of tools and dev kits

Basically, there are fewer tail lights to follow. The mobile revolution is happening now and despite the fact that mobile apps have been around for the past few years, the field lacks the same maturity as web usability. Other problems include:

- Development can be expensive and time consuming. Companies have to make a commitment to mobile development, including continuously innovating and improving the user experience.

- App store ratings can make or break the success of your app. If your app isn't usable, then you may be down-rated into oblivion. And if a user doesn't get their dissatisfaction across in their app store rating, they'll be more than happy to broadcast the message for all to hear with social media.

- Testing can be difficult, especially with tight restrictions on sharing outside of app stores.

- Mobile web pages tend to rely on a fairly predictable set of user inputs, all mediated by the browser. On the other hand, mobile apps must be aware of the whole range of input mechanisms, like pinch, rotate, tap, and others.

Native Apps Winning: "In March (2012), the web browser accounted for just 18.5 percent of time spent online among US smart-phone users. Mobile apps accounted for the rest. Now we know why Safari for iOS capabilities advance so sparingly: Apple sees it as irrelevant. Stated differently: Safari is to mobile what Internet Explorer 6 was to the desktop 10 years ago. Apps matter more to both developers." (source)

Mobile Apps: Tips for Success

Despite the lack of a roadmap, there are some proven tips on developing a more user-friendly native app. Primarily:

- Don't fire and forget. Launching your app is just the beginning, and you should expect to receive user input and feedback just like you would for any other application. Be prepared to iterate and improve. Many companies under-invest in their mobile apps and fail to keep up with user expectations.
- Include data instrumentation and analytics in your app as much as possible. You cannot make good decisions about how your app is being used if you do not have data. A number of third party analytics tools are available to help you gain insights into how people are using your app, including:
  - Flurry (http://www.flurry.com/)
  - Localytics (http://www.localytics.com/)
  - Mixpanel (http://www.mixpanel.com)

Just because you're building an application for a new platform does not mean you should ignore the standard user research and product management tools of the past. In fact, they're even more important as you build your mobile app on a new and unknown platform. Remember, develop your user stories and focus on the most important stories first.

WHO ARE YOUR USERS?

"When it comes to designing a solid product user experience however, 'everybody' is not a good target user. It is not feasible to design a product so that it is user-friendly, appealing, and easy to use for *everyone*. The result of such effort may very be a product that doesn't appeal to anybody in particular; and this in turn may make the product unsuccessful."

– Inge De Bleecker

Ux Usability

Mobile Apps: Tips for Success

Keep in mind that the users may not know what they need or what their app can do. For example, a user may not realize that their mobile device can report their location to the app, or they may not think of using their camera for anything other than taking snapshots. As a mobile developer, it's up to you to realize that a mobile device may be able to solve a complicated problem in a new and exciting way.

Examples:

- Using the device location to tell the user about interesting people or experiences they can find in their immediate area
- Using the camera to take photos of bar codes of goods on store shelves to make price comparison easy
- Using the built-in movement detection logic to make the app change its behavior depending on how the device is held or used. A device can be triggered to exchange data with another device by bumping it.
- Bluetooth can share data with other external devices in new and exciting ways. A mobile device could communicate with a camera or printer in a seamless and easy fashion.

APP STORE RANKINGS MATTER

"App store ratings are extremely important to us. You can launch a beautifully designed native application, but if it crashes, then it will receive a poor rating and users will go elsewhere. Our goal is to launch nothing short of a 4.5 star app every time - no exceptions. Anyone can read your app store rating. ***There's no way to hide poor quality in the world of mobile****."*

-Michael Croghan,
Mobile Solutions Architect, USA TODAY

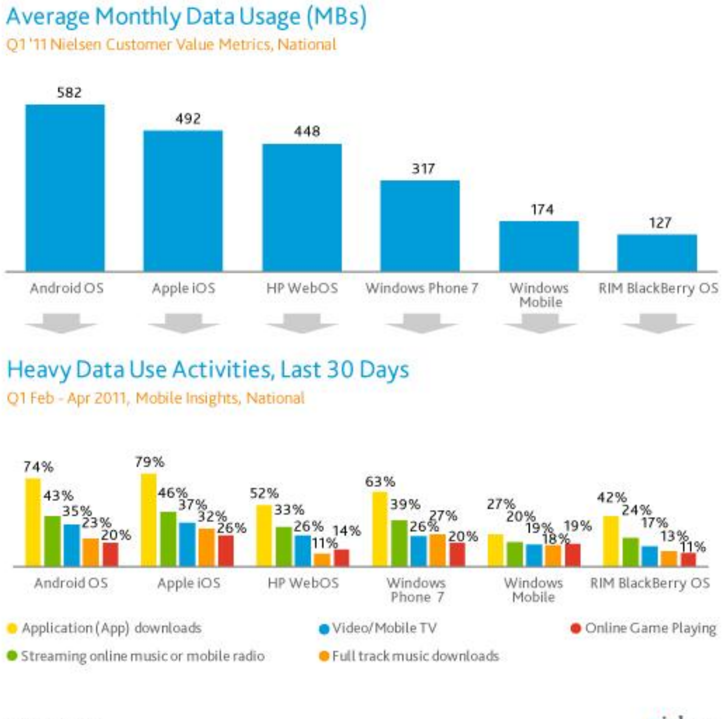
Performance Matters

Whereas users might be willing to forgive a slow mobile web experience, they'll have no tolerance for a slow app experience. Optimize the loading, caching, and displaying of data as much as possible. If your app uses a web API, be especially thoughtful about making sure content is sent and received as quickly as possible.

For example, Instagram sends a photo to the server the moment it's taken. While the user is writing a description and choosing sharing settings, the app is silently uploading the photo in the background. By the time the user hits upload, the photo is already uploaded. Check out this brief tutorial from CultOfMac.com.

Also, don't ignore accessibility. Where possible, use frameworks and libraries to make your app accessible to disabled users. More info on this can be found on the Apple Developer Library.

Slow performance is the number one reason why users abandon a mobile application. Until recently however, the costs of testing mobile load capabilities have far outweighed the benefits - leaving developers guessing in terms of support for concurrent users, end user timing, download speeds and other performance criteria. Now, these and other issues can be uncovered during real-world usability tests.



Source: Nielsen

> "The top reason we should care about diversity in our testing teams is because the demographic of a computer user is more diverse than ever before."
>
> – Lanette Creamer, Owner, Spark Quality

USABILITY FOR
HYBRID MOBILE APPS

Hybrid Applications

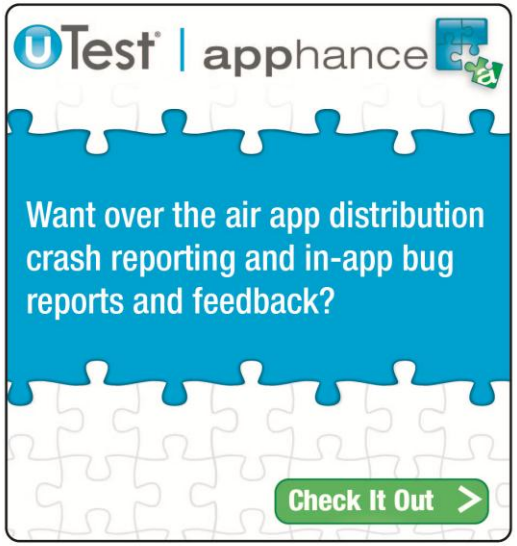
A number of applications and frameworks have appeared in the recent couple of years that are designed to make it easy to build a mobile application *and* a mobile website together. Developers typically write their application using special purpose HTML5, Javascript, and CSS. Then their code is "compiled" into a native mobile application for one or more mobile platform. In addition, the developer could also compile their special purpose HTML into a more standard form to be used as a mobile website.

What are the advantages of this approach?

- A mobile developer can build an app across devices using a single development platform.
- HTML5 is well understood by web developers, which is a far larger group than developers for iOS or Android.
- It's possible to build a robust application very quickly with a lot less overhead.

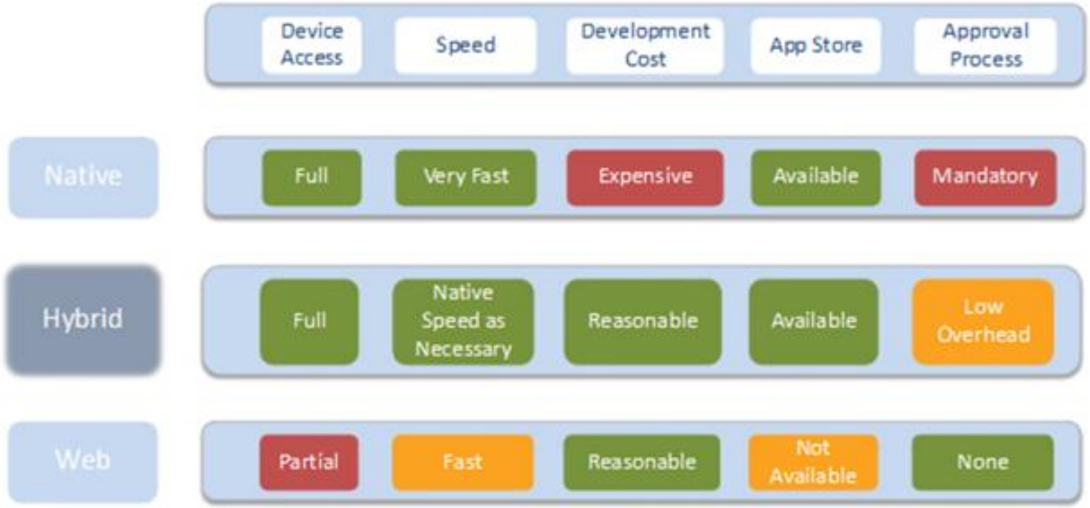
What are the disadvantages of this approach?

- Most of these frameworks expose underlying hardware and libraries for the device through API calls. If an API call does not exist to access some underlying technology, then a developer is out of luck and will have to go back to writing a native application.
- If the developer tries to deviate outside of the standard approach for using these hybrid tools, they may encounter a great deal of frustration.
- These hybrid tools are less mature than the tools for building full native applications.
- Performance may be less than ideal.


uTest | apphance
Want over the air app distribution crash reporting and in-app bug reports and feedback?
Check It Out

Reminder: With hybrid apps, the developer gives up direct access to the underlying device. Building certain kinds of applications, like games or media intensive apps, may be impossible in these frameworks.

A Side-by-Side Comparison: Native Apps vs. Mobile Web vs. Hybrid Apps



	Device Access	Speed	Development Cost	App Store	Approval Process
Native	Full	Very Fast	Expensive	Available	Mandatory
Hybrid	Full	Native Speed as Necessary	Reasonable	Available	Low Overhead
Web	Partial	Fast	Reasonable	Not Available	None

Source: Worklight

"A second downside of apps is that users have to install them. Our testing shows poor findability and usability in Apple's Application Store, and many users won't even bother downloading something at all for intermittent use. So ask yourself whether you're really offering something within the hardcore mobile center of need: time-sensitive and/or location dependent, and whether your offer is truly compelling in this crowded space. Most companies are never going to make it big in mobile. In some cases all they need is to make their main website somewhat mobile-friendly. Many others should deliver a dedicated mobile site but not bother with apps."

- Jakob Nielsen

Hybrid App Development Methods

Appcelerator

A full fledged platform for building mobile applications in HTML5. Appcelerator requires the developer to adopt certain styles and conventions specific to their API, which increases the learning curve for a web developer making a transition to using the tool. On the other hand, their API tends to be very robust and provide a great deal of services, widgets, and power. Appcelerator apps are compiled into native mobile applciations. Appcelerator apps, due to their very tight connection with the underlying device, can give the app developer more tools to develop a unique and powerful user experience.

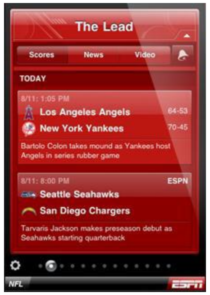
Phonegap

Phonegap also lets you build an application using HTML5, but the application is not compiled. Instead, it's embedded inside a native application shell. Phonegap is easier for web developers to adopt since it does not require them to learn as much special HTML syntax. It also supports a very large number of possible devices. On the other hand, it can be slower and less robust than Appcelerator. Because Phonegap is simpler to use, developers can build apps very cost effectively and potentially iterate more on a lower budget. A company on a tight budget can get a lot of bang for their buck using Phonegap, leaving budget available for improving usability in more releases.

See a comprehensive comparison of these options here.

Examples of Hybrid Apps:

- **ESPN ScoreCenter**
  - A native app with updated scores within the app
  - Directs users to a mobile website for further articles
- **Lotte**
  - 100 pages written in HTML and used across platforms
  - A smaller number of custom developed native pages
- **Bank of America**
  - A native app icon pushes users directly to the bank's mobile site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New York Yankees 70-45
Bartolo Colon takes mound as Yankees host Angels in series rubber game
8/11: 8:00 PM ESPN
Seattle Seahawks
San Diego Chargers
Tarvaris Jackson makes preseason debut as Seahawks starting quarterback

The Future: Mobile Web *Plus* Native Apps

As we covered, native apps still have a higher user rate and remain the only option if your app needs to access specific APIs (such as the camera or address book). Native apps also offer a highly controllable custom experience because they are developed specifically for a designated operating system – so you can control exactly how it looks on each device. Not to mention the built-in exposure of being included in an app market.

For these reasons, native apps are not going away any time soon. But mobile web does reduce app maintenance and allows for more content. As a result, mobile web is emerging not necessarily as competition to the native app, but as a potential ally. Companies are now beginning to embrace either both types of apps or hybrid apps which combine elements of the two into a single app.

NATIVE APP OR MOBILE WEB?

- “44 percent of respondents only offer a native application, as compared to 22 percent that offer a Web application, or 35 percent that offer both.
- When we asked them about future plans, the percentage of those offering a Web app or both remained the same, while many of those with native app alone said their app strategy choice remains to be seen and may change over time.”

– Lie Luo
Global Intelligence Alliance

Pandora’s CTO Tom Conrad on hybrid HTML5-native apps:

“It’s the best way to get the best of both worlds with the technology that’s available right now. That gives you integration with the OS and really, really high performance and really fluid user experiences. But integrated with some HTML5 content, whose strong suit is uniform platform dynamics, and rapid turns on user interface development.”

METHODS FOR MOBILE USABILITY TESTING

Mobile Usability Testing Methods

So now that we've covered the various mobile mediums, the challenges they present and some useful solutions to each approach, let's now dive into some best practices for evaluating all of that raw user data.

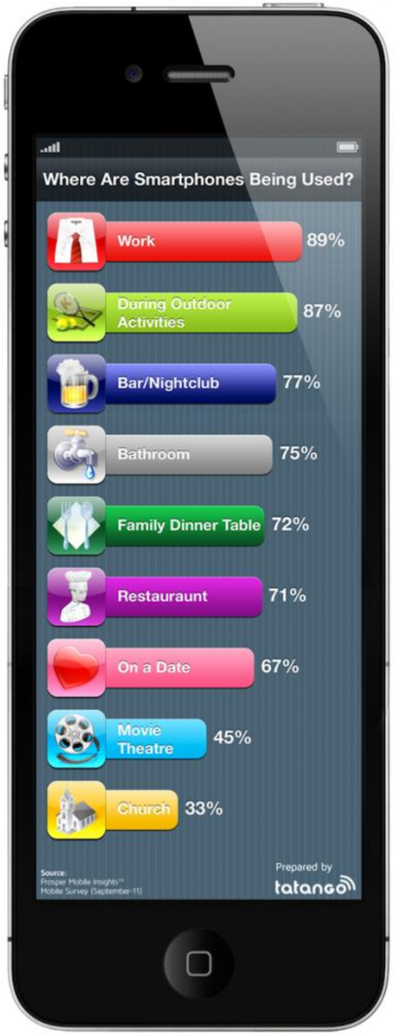
Essentially, it's never too early to evaluate the usability for your mobile app or website. Even with simple sketches or wireframes, you can begin studying how users will engage with and use your application. How you perform your usability testing depends on your needs and testing requirements.

How to Test Your App

There are many ways to usability test your application, but they all fall into certain broad categories. None of these are mutually exclusive, and in fact they're all valuable depending on the particular usability data you are trying to gather.

On-Site vs. Remote

On-site testing takes place in your lab or testing facility. You invite users into your lab, provide them with the app and observe how they use it. The testing environment is usually controlled, and the user's actions are typically recorded from many different angles. The advantage of this is that you can get very in-depth analysis of the usability of an application. Most on-site testing can be combined with rigorous controls, recording technology, and other bells and whistles. The disadvantage is that it can be very expensive and time consuming. You'll test fewer people with this approach. Your data will be deep (you'll wring out every piece of information you can from the test subjects) but narrow (you won't have as many test subjects).



Testing Methods

Remote testing is done on the user's own terms, usually in their own home or workplace. They perform the testing when and where they are most comfortable. This option is growing in popularity for mobile because mobile apps are often meant to be used on the go. That means it's important to test users while they are out and about using the application. In addition, it's usually cheaper. The results are often times more reliable by avoiding the Hawthorne effect (where users change their behaviors because they know they are being studied. (source)

Moderated vs. Unmoderated

Moderated testing is where you watch the user while they're engaging with your app. You might give them a series of tasks to complete, and then ask questions as they're trying to complete those tasks. If the user has trouble, you can begin diagnosing the usability concern with them right away. This is also very appropriate for testing less developed UIs – wireframes and mockups for example. You can provide the user with different versions of your UI on paper and ask them how they would interact with the application.

Unmoderated testing is the opposite of moderated. The user engages with the app without a moderator present. At the end of the testing, the user is expected to answer questions about their usability experiences using the application. While unmoderated testing may sound less ideal than moderated, it has the advantage of allowing the user to work with a mobile application on the go. The user can then provide their feedback at a later time. Also because it does not have the overhead of moderating all the test subjects, it can reach a much larger number of users and get a larger pool of data.

EXPLICIT VS. IMPLICIT

Explicit testing is usability testing you actively perform on your application.

Implicit testing is testing you do by evaluating data generated by passive approaches. Instrumentation and analytics fit this approach. This is how most usability testing is performed and does not require a separate test phase.

Less is More: "Apps I have used for a long time are gradually getting buggier and bulkier, as one feature after another are added by the developers. The extra features don't usually make the app better at performing the primary function, instead they add new capability just in case the user might find it beneficial."

– James Kendrick

Ux Usability

Testing Methods

Survey vs. Recorded

Survey based usability testing gathers user input via a carefully constructed survey at the beginning and end of the testing process. The user is given specific tasks to accomplish within the app, and then they're asked to describe how they completed those tasks. Usability surveys can reliably assess an application's usability if experts carefully construct the survey and the usability test subjects are reliable.

Recorded usability testing takes a recording of the user's actions while they're using the app. A recording could be made of many different things, including recordings of the user's face, screen recordings of the app, and voice recordings of the user's speech while testing the app. A new trend is to also record the movement of the user's eyes, tracking where on the screen they're looking to find particular controls in order to complete a particular task.

These techniques are well established in on-site usability tests for the web, but they're practically non-existent with mobile. The challenges of the device being small and on-the-go make recorded usability testing difficult. The immaturity of the platform (combined with the difficulty in submitting to certain app stores) has also made it difficult to include recording functionality within apps themselves.

These are not either/or, and many times you will be able to do both.

Not Optimized: A recent survey by SD Times found that "only 50% of small and medium sized businesses check the appearance or functionality of their website for smartphone users. Of those that have, 43% admit their sites have a reduced appearance and reduced functionality. Further, 57% of these businesses have not optimized their websites for mobile use and have no plans to do so.

HOW TO EXECUTE YOUR USABILITY TESTS

Conquering the Mobile Testing Matrix

By now, it should be obvious that traditional testing methods are no longer sufficient on their own to combat the unique challenges presented by mobile app usability. So what's a tech leader to do? Construct an elaborate QA lab and conduct all usability testing in-house with a revolving door of focus group participants?

For years, as new testing challenges have emerged, new schools and approaches were debated. Choices and alternatives included:

- Manual testing vs. automated tools
- In-house teams vs. outsourced partners
- Guided testing vs. exploratory testing
- Emulators vs. remote access

In each instance, these innovations took place inside the confines of the QA lab, either behind the company firewall or in a QA lab halfway around the world. Starting to see the problem?

Historically, when companies wanted to improve their testing, they did so within this somewhat sterile environment – far removed from where their users work, live and play. The evolution of mobile eliminates that option as an effective solution on its own. If testing for modern applications is conducted exclusively within a central location, how can one be sure that it will make sense in the hands of actual users?

One solution: Hundreds of top companies – from global enterprises to early startups – have moved a portion of their mobile app testing outside the lab and into the wild. This enables applications to be tested by professional testers, on real hardware, with real software, using imperfect connectivity. In short, *under real-world conditions*. That's not to suggest that other methods are insufficient. Let's take a closer look….

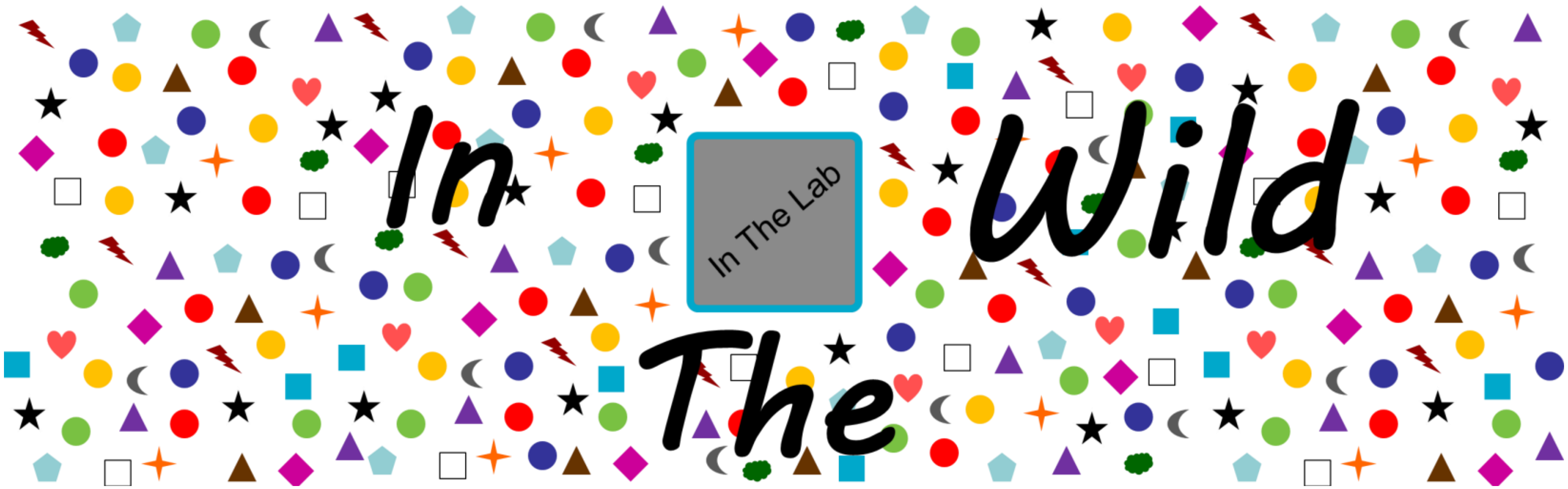
Test Sourcing Options: Lab + Wild

In-The-Lab Testing

- **In-House:**
  - **Pros:** In-house usability testing makes it easier to control conditions, as well as the process
  - **Cons:** Capacity constraints; testing may not match user demographics; maintaining adequate collection of mobile devices is prohibitively expensive
- **Outsourced Testing**
  - **Pros:** Professional testers; access to range of devices
  - **Cons:** Hidden costs; not easily scalable; challenges in communication and time zone; still lab-based testing

In-The-Wild Testing

- **Beta Testing**
  - **Pros:** No direct costs; lives outside the test lab environment; range of mobile devices, carriers, OS, locations
  - **Cons:** Users are not professional testers; provide subjective feedback that is not diagnostic, which raises the cost for the company; also puts unfinished product in front of customers
- **Crowdsourced Testing**
  - **Pros:** Lives outside the test lab across real devices, carriers, OS and locations; professional testers who mirror end users; access to range of mobile devices & connections
  - **Cons:** There is a direct cost; requires careful partner vetting; requires communication efforts between testers & developers



From Surviving to Thriving: Your UX Strategy Moving Forward

Now that we've covered the testing challenges (and solutions) associated with mobile apps, you may feel as though your current testing strategy is hopelessly flawed. It isn't.

To achieve success in the mobile world, you'll still need to:

- Keep testing in the lab
- Keep hiring and training
- Keep automating
- Keep innovating

But recognize that this approach will never again be sufficient on its on. For reasons already discussed, you'll need to move a portion of your mobile usability testing efforts out of the lab and into the wild to mirror your user base:

- Technologically: OS, browser, device, carrier
- Geographically: Continent, country, city, language
- Demographically: Age, gender, education, employment, industry

The one critical consideration with mobile: You need to think of your RESPONDENTS and whether or not they match your end-user base. This includes demographically, geographically, technologically – you may have an Android app, but does it look and feel the same, let alone function the same, on an iPad vs. Galaxy Tab vs. Xoom. And if your app is location-dependent or geo-aware, you need to test in real-world environments, as opposed to inside the lab or anywhere else irrelevant. All of this is pointing to an increasing need to test “In-The-Wild” – with real devices in real world conditions – complementing the testing that happens inside your lab, under sterile conditions.

Ux Usability

Remote Unmoderated Testing

Having reviewed the basic concepts of in-the-wild testing, it should be clear that one testing approach is ideally suited to this method: Remote Unmoderated testing. With this usability process, app developers get the obvious benefits of:

- **Exact demographics**: Easily target focus group users by age, gender, language, location, software, device and other criteria

- **More natural setting**: Users who interact with your app on their own device are likely to give you better feedback

- **Fast turnaround**: Since users will not need to travel to a specific location, it's easier to conduct a speedy usability trial

- **Reduced costs**: Since it's an on-demand solution, in-the-wild testing is much more scalable than traditional usability processes

There are some drawbacks. For one, you'll miss out on first-person observations, as well as the lack of opportunity to ask follow-up questions in person. Despite these issues, remote unmoderated testing in-the-wild remains your best bet to collect large samples of user data.

HOW DOES IT WORK?

Here are the basic steps to conducting remote unmoderated testing in-the-wild:

1. **Determine tool/solution that fits**: Find a vendor or tool that meets your UX requirements
2. **Recruit participants**: Based on key demographics like age, gender, profession, etc
3. **Write task plan**: List out the tasks that each user should complete (see the next page for details)
4. **Run pilot**: Go through the usability testing process with a member of your staff
5. **Run test**: Conduct the full-scale test with selected focus group members
6. **Analyze results**: Collect user feedback and data; look for repeating patterns and trends
7. **Write report**: Compile results into an actionable report, with key areas to address

6 Tips for Writing a UX Task Plan

Of course, if your task plan is flawed, then the rest of your usability test will also suffer. So what are some ways to ensure that you're asking the right questions and getting the right answers? Here are a few tips:

1. **You only get one shot**: Stated differently, you only get one chance to make a first impression, which is the critical impression when it comes to usability.
2. **Guide without influencing**: Help your focus group understand what you're looking for, but don't try to influence their actions or opinions.
3. **Make all questions required**: There's a reason you asked the question, so make sure that you get the answers you're looking for.
4. **Encourage sharing**: Sometimes, the best feedback will be verbal. Other times, written. Encourage sharing and feedback in any form.
5. **Get their information for follow-up**: Make sure you get their contact information in case you have follow-up questions or comments
6. **Keep it short**: Under 30 minutes if possible/ Any longer and you could wear on their patience; any shorter and you risk leaving out important areas

"In mobile app markets today, users have an instant, strong, and public vote on the quality of an app through star ratings and comments. Interestingly, they don't often complain about failed unit tests – what matters is any impact on their experience. Be sure to focus on integration, network fault tolerance, the device, other apps, and most importantly, user perception and expectations."

- Jason Arbon, Engineering Director, uTest

Know Thy Users: "It's always fun and engaging to do user research for a completely new product. Startups often have novel product ideas, yet knowledge about the end user is often based entirely on assumptions. The goal of user research is to identify any and all target users groups and learn about their behaviors and expectations so that the product functionality and design will be appealing to those users."

- Inge De Bleecker

AND IN
CONCLUSION

Conclusion

Those companies who neglect testing in their mobile application development lifecycle, do so *at their own peril*. There was a time when the testing matrix was indeed too complex, too burdensome to be completed using standard means. But thanks to the rapid evolution of in-the-wild testing, all that has now changed.

Those companies that are leveraging *in-the-wild* testing - particularly in the mobile apps and mobile web space - are gaining a competitive advantage with each new release.

As the mobile market continues to grow sharply, those brands that make real-world testing coverage a priority will enjoy ROI in terms of increased market share, profitability and above all, user loyalty. Those who neglect testing will struggle to keep up in a world filled with app stores, social media and increased user expectations. Simple as that.

Either way, there's no turning back when it comes to mobile apps, and that means the testing for mobile must rapidly evolve to keep up.

For more on how in-the-wild testing can complement your mobile app testing efforts, and help you launch apps that work in the hands of end users, chat with one of our testing coaches by clicking here or by calling 800.445.3914.

Ux Usability

Additional Resources

Want to learn more? Here are a few valuable links to get you started:

- Apple iOS Design Guidelines
  - http://developer.apple.com/library/ios/#DOCUMENTATION/UserExperience/Conceptual/MobileHIG/Introduction/Introduction.html
- Android Design Guidelines
  - http://developer.android.com/design/index.html
- Tips on designing website for mobiles and tablets
  - http://allaboutdigitalmarketing.wordpress.com/2012/05/20/tips-on-designing-website-for-mobiles-and-tablets/
- Mobile Web Resources
  - http://www.mobileawesomeness.com/mobile-web-resources/
- Global Authoring Practices for the Mobile Web
  - http://passani.it/gap/
- Designing for the Mobile Web
  - http://www.sitepoint.com/designing-for-mobile-web/
- Jakob Nielsen on Mobile App Usability
  - http://www.mobileapptesting.com/jakob-nielsen-on-mobile-app-usability/2011/04/
- Seven Guidelines For Designing High-Performance Mobile User Experiences
  - http://uxdesign.smashingmagazine.com/2011/07/18/seven-guidelines-for-designing-high-performance-mobile-user-experiences/

About uTest

uTest provides real-world testing services for web, desktop and mobile applications. By leveraging a community of 80,000+ professional testers from 190 countries, uTest helps companies test their products under real-world conditions. Thousands of companies – from startups to global enterprises such as Google, Microsoft, HBO, Amazon and USA Today – turn to uTest to complement their in-the-lab testing, and to help them launch better apps. uTest's services span the entire software development lifecycle, including functional, usability, security, localization and load testing.

The company is headquartered near Boston, with offices in Silicon Valley, London and Israel. uTest has raised more than $37MM in funding and consistently generates triple-digit annual revenue growth. The company won the American Business Association's "Most Innovative Company of 2011" award, and was named a "Best Place to Work" by the Boston Business Journal two years in a row.

More info is available at www.utest.com or blog.utest.com. For more info on mobile app testing, visit www.mobileapptesting.com

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