The Keys to Mobile Usability

How to Develop, Test and Launch User-Friendly Apps

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Keeping Up With Mobile Usability

Since 2007, mobile has been a game changer. In the intervening years, people have increasingly turned to their mobile devices to meet needs traditionally filled by other media – and that trend won't change any time soon.

In this new world, the success and popularity of your mobile application is directly related to its usability. But instead of focusing on usability throughout the development process, many companies only give it proper attention right before launch or after poor reviews.

To complicate matters, mobile hardware and software continues to evolve and improve by leaps and bounds. With the mobile space still constantly changing, guidelines on mobile usability continue to shift. While general standards have emerged for web usability, the mobile ecosystem is vastly more complicated.

But make no mistake: Your future is directly tied to the overall usability of your mobile app. Those who ignore the emerging trends will fall behind. Those who stay on top of current mobile usability standards and continuously test as mobile continues to change will have a permanent edge over the competition.

Luckily, mobile usability best practices are beginning to emerge. A group of fundamental changes have taken hold that can set companies down the path to understanding mobile usability. An understanding of these mobile factors coupled with a range of testing methods will help you ensure your app will be

usable for your entire target audience.

Device Constraints

The single biggest difference for mobile boils down to one thing: form factor. Smartphones and tablets are unlike anything developers have contended with before.

When you're designing for mobile, device constraints and differences need to play a major role early in the process. Consider how the following factors will affect your mobile app's usability.

Variation in Screen Size

When compared to today's full size desktop or laptop displays, some mobile screens are downright miniscule. Mobile screens can range in size from 3.5 inch smartphones to 10.1 inch tablets.

As many companies found out with the introduction of the iPad, creating an app that looks good on a small phone screen will not keep tablet users happy. Wasting space by not filling the screen or requiring users with a smaller device to scroll horizontally to consume your app is not a user-friendly experience. The best way to take full advantage of different screen sizes is to create separate native apps optimized for phones and tablets, or to consider a responsive web experience.

Keeping screen size in mind is particularly important when designing the navigation and content of your mobile app.

Display Resolution

Whether your app is running on a screen that's 240x320 or 2560x1600, your

users expect your mobile app to look great and adapt to whatever device they are using, be it an older model or a new Retina or HD display device.

Users have become accustom to nice, crisp app experiences. If you fail to optimize your app for the devices your users are on, you risk alienating a portion of your install base.

Operating Systems

Beyond screen size and resolution, each operating system has different usability standards and guidelines. It's important to familiarize yourself with the OS and devices you are targeting before you plan your mobile app's design and flow.

For example, iOS 7 introduced updates to the UIKit that allows user interfaces to "come alive." Taking advantage of this OS-specific feature allows developers to create apps that respond to a user's physical actions in a much more intuitive way. As users interact with your app, the user interface can react and move based on how the user is holding and moving the device. The same plan of attack can't be used when developing Android apps, however.

Questions such as to what level an OS allows motion control and what third party browsers users can access need to be answered during the planning phases. If you do not take advantage of usability features users are accustomed to within the OS you can hinder their experience. If you assume an interactive feature will work no matter the OS, you can expect major disappointments (and angry users).

Browser Options

No matter what approach you take to mobile web, you need to test your site

with a range of mobile browsers in mind. Popular mobile browsers include:

- Android
- Safari
- Opera for Android
- Chrome
- Internet Explorer
- Firefox
- Silk (for Kindle Fire)
- UC Browser for Android
- Perfect Web Browser
- And many, many more …

Don't forget to test your mobile site's usability within a particular browser on several different screen sizes.

Mobile Usability Concerns & Best Practices

Physical device and software changes have necessitated a major rethinking when it comes to usability for mobile. Screen changes have resulted in a drastically different input method and major content and navigation changes. In addition, other tried and true web approaches have found themselves on the chopping block.

Expansive web presences are impractical for mobile. Media rich experiences can be found in native apps, but are harder to achieve efficiently via mobile web. Flash, long a darling of the web, has thoroughly lost the mobile war

thanks to Steve Jobs and Apple. While Flash still works on older Android devices and some third-party browsers, it's not supported on the majority of devices and will likely phase out of mobile entirely in the coming years. These factors alone should convince you to optimize for mobile.

Navigation

Touch screens have almost entirely replaced keyboards, styluses and rollerballs on mobile devices. Your users are now interacting with your mobile app directly with their fingers – which are considerably bigger than a cursor.

Though the screen sizes are smaller, your links, buttons and other points of interaction need to be bigger to accommodate this input change. Anything the user will be expected to tap should be at least 44 – 44 pixels in size. Also, put plenty of whitespace between tappable elements to avoid accidental clicking. Though tablets offer larger screens and give you more navigation space, remember that users are still relying on their fingers to interact with your app.

This issue applies to forms as well. It's not as easy to enter information on touchscreen mobile as it is with a keyboard, so keep form fields large enough to interact with and to a minimum. Mobile isn't the time to ask for extra information.

A good approach to navigation and app interaction is to rely on gestures when possible. Rather than text links or buttons, enable gesture-activated actions such as a tap-and-hold or a swipe. Another emerging usability feature is the hidden or slide out menu. This frees up screen space for feature-focused content while still making it easy for your users to access the navigation menu at any time and from anywhere in the app.

Navigation on mobile devices isn't the easiest, so keep you app on the simpler side and don't make your users go digging for information. Keeping navigation minimal and easy to use will result in the best mobile experience for your users.

Content

Because of the smaller display space and navigation difficulties, optimizing for mobile usability involves rethinking your content. The key to successful mobile content is picking the most important features and focusing on making those easy to find and interact with. Don't simply replicate and shrink your existing website.

When dealing with mobile, a good rule of thumb is to identify what information your users will most likely want to access while using a mobile device. Keep in mind that the information they'll need and the features they find most important might be different than your traditional web presence. Mobile users are often on-the-go so their priorities will be different. For instance, contact information might be more important to a mobile user than other features.

Mobile devices are also increasingly used for browsing. These users aren't necessarily on the move or looking for anything specific, but it still needs to be easy for them to find interesting information. A great mobile app strikes a balance between people looking to kill time and users actively seeking information they can act on right away. Tilt too far in either direction and you'll send some users away frustrated and with a poor opinion of your app.

Protip:
If you link your mobile app to your full website – common in cases of Terms of Service and Privacy Policy situations – make sure that page is also usable in a mobile format.

The most important and frequently used content for mobile users should be at the top of your app – don't make users scroll or click deep to find something vital. That doesn't mean you can't include information that is slightly less important. Instead, consider your navigation and make it easy to find secondary information quickly without hindering the major features.

If you want a media rich mobile experience, consider investing in native apps. This approach gives you greater control over the content, free reign over your navigation approach and allows you to optimize for specific operating systems and devices, making for an overall better user experience.

Responsive Design

When companies started figuring out that they couldn't just shrink their existing website for mobile, they began adopting m. sites – stripped down mobile versions of websites that often linked to content on the full site. That trend is steadily being replaced by the rise of HTML5 and responsive design – and for good reason.

Responsive design allows you to develop once and have the website intuitively adjust to whatever screen size the viewer is using. While you still need to test across a range of devices, screen sizes and resolutions, this solution is particularly well suited to the growing mobile matrix and all the different devices it encompasses.

OS & App Store Usability Guidelines

Many operating systems and app stores have usability guidelines and standards for those developing and testing a native app. Following these guidelines is more than helpful – it is imperative to having a successful app. In many cases, if you do not follow these standards, your app will not be allowed

in the respective app store.

If you plan to make your app available on multiple platforms, pay attention to each set of guides – do not simply assume that what works for one will be accepted by the others.

Here are some usability guides for the most popular operating systems:

- *iOS Developer User Experience Library*
- *Android Developer Design Library*
- *UX Specifications of Amazon Devices*
- *Windows Phone Design Library*

Other Factors

Although it's an independent testing type, localization testing should also be factored into your app's usability. Translations, contextual factors (like formatting and symbols) and other cultural factors can all quickly render your app unusable if they are not properly addressed.

Another factor that ultimately plays into usability is load time. When dealing with mobile web, 74% of users expect sites to load within 5 seconds (source). Users expect native apps to launch even quicker – 51% expect apps to launch within 2 seconds (source).

When dealing with mobile, avoid hefty image files, complicated style sheets, JavaScript files and other load intensive items. Optimize the loading, caching and displaying of data as much as possible. If your app uses an API, be especially thoughtful about making sure content is sent and received as quickly as possible. If it doesn't load in time to keep your users' attention, no UI in the world can save your app.

The ultimate key to successful mobile usability is constant vigilance. Remember, mobile is growing and evolving and users' expectations of mobile usability will change along with it. You can't rely on the flow of a 2-year-old app to still be relevant and pleasing. Pay attention to usability trends, stay on top of new capabilities, monitor user sentiment and change your app accordingly. Making this a constant practice means you can institute little changes along the way rather than undertaking major redesigns.

Testing Solutions

It's never too early to evaluate the usability of your mobile app. Even with simple sketches or wireframes, you can begin studying how users will engage with and use your application.

Involving a Usability Expert during the early stages of the application lifecycle can help you spot problem areas before development begins, heading off problems before you spend time and resources. An expert can also recommend general best practices to help you meet current user expectations.

Usability Testing Methods

There are several usability testing methods, all with their own sets of pros and cons in terms of data and results.

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 controlled and the user's actions are typically recorded from

many different angles. The advantage of this approach is that you can get very in-depth analysis of the usability of your application and can ask users questions during the test. The disadvantage is that it can be expensive and time consuming, does not mimic real-world conditions and typically provides a smaller user sample.

Remote testing is done on the user's own terms – when and where they are most comfortable using their own devices. This option is particularly useful for mobile because mobile apps are often meant to be used on the go. Testing outside a lab environment gives you the added benefit of testing under real life conditions such as poor connectivity and while users are in motion.

The results of remote testing are often more reliable because they negate the Hawthorne effect, where users change their behavior because they know they are being studied (source). They do, however, rely on the user to report their opinions without giving you the chance to prompt for further insights.

Moderated vs. Unmoderated

During moderated testing, users are watched while they engage with your app. They are typically given 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.

In unmoderated testing, 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 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 at their own pace and under less pressure as they're not tethered to a time slot with a moderator. Also, because this approach does not have the overhead of moderating all the test subjects, it can reach a much larger number of users and draw a larger pool of data.

Survey vs. Recorded

Survey-based usability testing gathers user input via a carefully constructed questionnaire. The user is given specific tasks to accomplish within the app, and is then asked to describe how they completed those tasks. Usability surveys can reliably assess an application's usability if experts carefully construct the survey. In these situations, it's generally helpful to have the expert analyze the raw data for trends.

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, voice recordings of the user while testing the app or recording the movement of the user's eyes. However, this is typically more difficult when testing mobile applications because of less developed tools.

In-The-Wild Testing

The techniques described above are well established but don't always fit the needs of mobile. The challenge of mobile devices being smaller and on-the-go makes some of these methods more difficult. The nature of mobile also means that in-lab testing alone is no longer enough.

While on-site testing is good for early stage usability evaluation, testing in a sterile lab environment far removed from where users work, live and play will

not give you enough insight into the app's ultimate usability. Navigation may be easy while sitting still, but will the app be as easy to use in time constraint situations or when the user is being jostled around on a bus?

Hundreds of top companies – from global enterprises to early startups – have moved a portion of their mobile app testing out of the lab and into the wild, similar to remote testing. This enables applications to be tested on a range of real hardware, with real software, using imperfect connectivity by a range of users. In short, under real-world conditions. It also gives you access to a larger pool of testers, resulting in a more comprehensive source of data.

Traditional usability testing practices haven't gone away, but recognize that those approaches will never again be sufficient on their own. To succeed in a mobile world, 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 and use cases.

Applause Analytics, a mobile app analytics tool, gives you the ability to continue monitoring user sentiment about your app's usability as it reaches a wider audience in the app stores. Applause Analytics crawls app ratings and reviews in the Apple App Store, Google Play and Windows Phone Store and consolidates the raw data into easy-to-consume metrics. Through the data you can see what users are saying about your app's usability, pinpoint fan favorite features and UX weak points and take a deeper dive into reviews specifically mentioning usability key words. Applause Analytics essentially gives you the ability to extend your in-the-wild usability testing indefinitely.

Testing Group

No matter which usability testing approach you choose, selecting the right group of test users is crucial. Using people in their 50s to test a mobile app

designed for millennials will not give you accurate or helpful feedback. If your app is location-dependent or geo-aware, you need to test with participants on the ground in that location (a lab, even one located in your target area, won't work in these situations). When choosing your test group, consider factors like:

- Demography: Age, gender, education, employment, industry, hobbies
- Geography: City, country, region, language, culture
- Technology: OS, device, browser, carrier, platform version

Usability Survey Tips

A usability expert, especially one who specializes in mobile, can craft the most effective usability survey. If you do not have access to an expert, here are some key factors to keep in mind when developing an effective UX task plan:

- Guide without influencing: Help your focus group understand what you're looking for, but be careful not to influence their actions or opinions.
- Make all questions required: There's a reason you asked the question, so make sure you get an answer to every one.
- Encourage sharing: Sometimes, the best feedback will be verbal. Other times, written. Encourage sharing and feedback

> "When it comes to designing a solid product user experience, 'everybody' is not a good target user."
>
> -Inge De Bleecker
>
> Usability Expert

in any form.

- Get their information for follow-up: Make sure you can contact participants after the test in case you have follow-up questions or comments.
- Keep it short: Tests should be under 30 minutes if possible. Any longer and you could wear a tester's patience; any shorter and you risk missing important areas.

Accessibility Testing

Beyond basic usability testing, accessibility testing is absolutely vital to mobile apps. Your app needs to work for all people, however they interact with their devices.

Once again, when developing for a specific operating system or browser, check the requirements and standards. Apple includes assistive features – including VoiceOver - in all their mobile devices and apps are expected to work with these features. The Android Developer site includes a section on creating accessible apps, including API help and a developer checklist.

Usability experts can help you make sure your application is accessible and crowdsourced testing can give you access to professional testers who are acquainted with how these features should work.

Conclusion

While the fluid nature of mobile makes usability standards harder to master, UX plays a major role in the success of your mobile app. Testing from start to finish – from planning through post-launch user feedback – is important if you want to accomplish the key features of mobile usability and give your users an app that they love.

About Applause

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