**Understanding Mobile Accessibility**

(Device Support v/s Code Requirements)

### **Introduction – Why do we need Mobile Accessibility?**

"Mobile accessibility" refers to making websites and applications more accessible to people with disabilities when they are using mobile phones and other devices. Development in this area addresses accessibility issues of people using a broad range of devices to interact with the web: phones, tablets, TVs, and more.

*A July 2013 survey (PDF) of adults with disabilities done by the Wireless Rehabilitation Engineering Research Center found that 91% of people with disabilities use a “wireless device such as a cell phone or tablet.” Among these users, screen reader usage is common, even on mobile devices.*

*A study of 1782 screen reader users done by Web Accessibility in Mind (WebAIM) in 2012 showed that 71.8% used screen readers on their mobile devices.*

### **Accessibility services for Mobile websites and Native apps**

Mobile Strategy - integrate requirements for mobile accessibility into your style guide and development requirements

Accessibility Audits - lists best practices and outlines specific areas that are not in compliance with mobile accessibility guidelines

Mobile Accessibility Roadmap - prioritizes the areas needing correction and charts a course to compliance

Accessibility Certification - Summarizes the level of compliance with Section 508 and WCAG 2.0 for your mobile websites and native mobile apps

**ACCESSIBILITY SUPPORT**

## Operating Systems

* iOS 3+
* Android 4.0.X + or IceCream Sandwich or 4.1.2 / 4.2 Jelly Bean
* Windows OS (*partial on 7 and extended on windows 8*)

## Input Devices

* *Bluetooth Keyboard*: Supported with iPhone and iPad
* *Eyes Free Keyboard*: Supported with Android

### **Inbuilt Accessibility Features provided by Devices and OS**

## Key Accessibility Features available in Android

* Talk Back (Screen Reader)
* Captions
* Magnification Gestures
* Braille Back Support
* Touch and Hold Delay
* Mono Audio
* Explore by Touch
* Change Font Size

## Accessibility Features on Windows Phone

* Change the text size
* Options to use high-contrast theme
* Narration
* Screen Magnification
* Customize Browser Captions (including video)

## iOS Accessibility Features

|  |  |  |
| --- | --- | --- |
| ***Vision***   * Voice Over or Screen Reader * Siri * Speak Selection * Dictation * Zoom * Font Adjustment * Invert Colors * Braille Display Support * Wireless Bluetooth Keyboard Support | ***Deaf or hard of hearing***   * Facetime * Closed Captions * Mono Audio * Visible and Vibrating Alerts * Support for IPhone Hearing Aids | ***Physical or Motor Challenges***   * Assistive Touch * Siri * Switch Control |

*\*\* Websites (including applications) can more efficiently meet both goals when designers and developers understand the significant overlap between making a website accessible for a mobile device and for people with disabilities.*

### **Steps of Achieving Mobile Accessibility**

## Interaction Design Process

* Inclusive Design from the start
* Wireframe should communicate accessibility requirements to designers and development team
  + Roles of elements (eg: buttons, links, checkbox)
  + States (eg: selected/ active/ hover / visited)
  + Labels (off screen text)
* Assess wireframe for accessibility.
* Document off screen text

## Labels and Controls

* Standard OS Controls: Use standard controls as custom controls are less accessible.
* Labels Inputs and Instructions:
  + set input types (eg: phone, date, number)
  + indicate expected or default value
  + required or optional
  + labels close to control (this is critical for low vision users)

## Focus and Context

* Focus or context should not automatically change when a field is focused or an input.
* Focus Visible when expected.
* Warn users when linking / launching an external application or link.

## Zoom, Resize and Scroll

* Do not disable pinch and zoom
* Do not block scrolling
* Use relative sizing for containers

## Feedback

* Notify screen reader users if the layout of a screen changes
* Feedback must be provided for user action
* Provide time-out warnings or alternatives to timeout
* Audio alerts need visual alternative (and/or haptic)

## Navigation

* Back buttons must correctly move the users back one step
* Use consistent and recognizable navigation across related screens and between desktop, web and mobile.
* Give screens a unique title
* For mobile web, give users options to switch between full/mobile versions

## Alerts & pop-ups

* Use standard OS alerts where available
* Non system pop-ups should completely fit on the screen, take focus properly, identify themselves to screen readers.

## Visual Design

* Color contrast ratio – 7:1 recommended
* Target size – min 9.6mm
* Indicate swipe areas – Visual and audible clues so content is discoverable
* Tap symmetry
* Don’t use images of text – Unless logos or other WCAG exceptions

## Content & Language

* Consistent language across brand
* Language on app consistent with website – Labelling, navigation, buttons
* Content team can own off-screen text
* Consistent and concise off-screen text
* Tooltips should not repeat link text or other alternatives

## Interactive Experience

* App development process
* Provide clear requirements for build and testing
* Provision tools (e.g. Bluetooth keyboard), licenses
* Allow time for learning requirements, AT and tools
* Explain how and when to unit test for accessibility
* When in doubt code to spec not to fix AT quirks
* Connect developers with accessibility testers
* Determine an exception process

### **Conclusion**

Mobile is customized for your lifestyle, habits, preferences, needs, and physical or cognitive abilities. Designing apps that can seamlessly adapt to each person’s abilities will make interactions and decisions easier and more intuitive. Also, text-to-speech, voice recognition or GPS-based technologies designed to help people with disabilities or the elderly will also benefit all mobile users when dealing with environmental or situational limitations. Accessibility isn’t a niche technology; it’s designed to help everyone

**References**:

* Key Reference to Mobile Accessibility by W3C

<http://www.w3.org/WAI/mobile/experiences-table.html>

* Mobile Specific Code Requirements and Samples

<https://www.smashingmagazine.com/2014/05/mobile-accessibility-why-care-what-can-you-do/>

* Trends in mobile device use by people with disabilities

<http://www.accessiq.org/news/features/2014/03/trends-in-mobile-device-use-by-people-with-disabilities>

* Mobile Accessibility – Best Practices

<https://mobiforge.com/design-development/why-mobile-web-accessibility-matters-best-practices-make-your-mobile-site-accessi>