



Adobe

PhoneGap Accessibility

Michael Jordan | Accessibility Engineer | @majornista



- Adobe has a cross-product accessibility team
- Supports accessibility in
 - Product requirements
 - Product development
 - Standards committees
 - Relationships with assistive technology vendors
 - Information for end users and authors

ADOBE ACCESSIBILITY

What is PhoneGap?

- PhoneGap makes native mobile apps using HTML, CSS and JavaScript
- Supported platforms: iOS, Android, BlackBerry, Windows Phone 8, Windows 8
- New platforms: Tizen, Firefox OS, Ubuntu Mobile
- Build apps locally with your own SDKs, or in the cloud with PhoneGap Build
- Plugins for device native features (alarms, alerts, camera, LEDs, etc.)
- Over 400,000 developers use PhoneGap
- Tens of thousands of PhoneGap apps are in app stores

What is Cordova?

- Adobe bought Nitobi in October 2011
- Announced the open-sourcing of PhoneGap
- Submitted the PhoneGap codebase to the Apache Foundation as “Cordova”
- <http://cordova.apache.org/>
- PhoneGap = Cordova

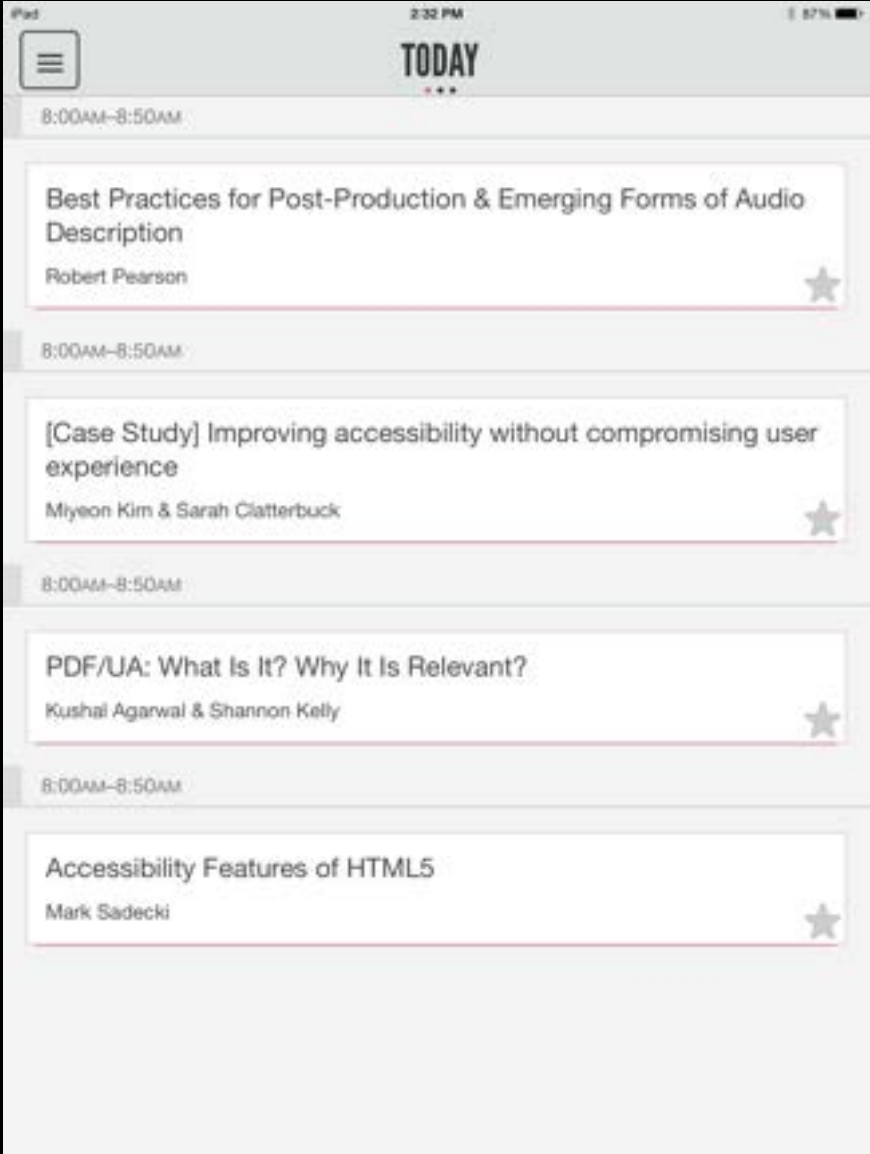
How it works

- Author builds a site with HTML, CSS, JS, images
- Author adds plugins for non-web functionality
 - Calendar, barcodes, battery, Bluetooth, flashlight
 - Plugins can also be written separately
- PhoneGap bundles the site with the operating system's WebView
- PhoneGap sends the app to the compiler for each operating system
- The compiler generates a native executable
 - .ipa for iOS, .apk for Android, etc.
- The author deploys the app through the OS app store or by sideloading

What works already

- PhoneGap supports (most of) what mobile browsers already do
 - basic HTML accessibility
 - some ARIA support
 - touch navigation
 - screen reader/magnifier support
- General web accessibility rules still apply

Demo 1: Conference app



Challenges we face with mobile web accessibility

- Screen readers on touch devices intercept gestures
- Subscribing to the OS-level text size preferences is different on every platform
- Sometimes WAI-ARIA isn't enough
 - Some design patterns, like Sliders, don't work
 - Live regions have limitations
 - You can't stop them once they've started
 - Sometimes they don't start

Mobile app accessibility vs. web accessibility

- On the web, screen reader sniffing telegraphs disability status
- Some sites have used Assistive Technology data to move users to a “text only” site
- Web sites *do not* get this information
- On mobile, your own device is (mostly) your private agent
 - You can set default font sizes, screen reader & captioning settings, etc.
- All native mobile apps have access to this data
- Mobile apps can adapt more easily to Assistive Technology status
- With PhoneGap, we’re building a mobile app from web technology
 - So...

...we made phonegap-mobile-accessibility

- Gives a developer access to the OS APIs mobile apps have, but the web doesn't
 - Assistive technology status
 - Accessibility event models
 - Access to text-to-speech engines
 - Generic and OS-specific functions

Developers need to

- Provide a logical reading order
- Manage application view states
- Add alt text where it belongs
- Using good semantic HTML
 - Including WAI-ARIA, where it's needed
- Manage focus
- Design with appropriate text contrast
- Use `phonegap-mobile-accessibility` to check device's state

New Mobile Accessibility APIs

- `isScreenReaderRunning()`
- `speak()/stop()`
- `postNotification(string, callback)`
- `isClosedCaptioningEnabled()`
- `getTextZoom()`
- `setTextZoom(int textZoom)`
- `updateTextZoom()`
- `usePreferredTextZoom(boolean enabled)` (iOS 7+, Android, Windows 8.1, Windows Phone 8.1)
- `add/removeEventListener()` for status changes
- `isGuidedAccessEnabled()` (iOS)
- `isMonoAudioEnabled()` (iOS)
- `isInvertColorsEnabled()` (iOS)
- `isHighContrastEnabled()/getHighContrastScheme()` (Windows 8.1, Windows Phone 8.1)

MobileAccessibilityNotifications

- SCREEN_READER_STATUS_CHANGED
- CLOSED_CAPTIONING_STATUS_CHANGED
- GUIDED_ACCESS_STATUS_CHANGED (iOS)
- INVERT_COLORS_STATUS_CHANGED (iOS)
- MONO_AUDIO_STATUS_CHANGED (iOS)
- TOUCH_EXPLORATION_STATUS_CHANGED (Android)
- HIGH_CONTRAST_CHANGED (Windows 8.1, Windows Phone 8.1)

Benefits of using web technology to make mobile apps

- One codebase can reach all platforms at once
- Apps are easier to develop and modify than native
- More developers know web technology than any native platform
- ...and all the accessibility rules still apply
- The OS-native WebView usually already has accessibility support

Thanks!

- <http://adobe.com/accessibility>
- <http://blogs.adobe.com/accessibility>

- <http://cordova.apache.org>
- <http://phonegap.com>

- <https://github.com/phonegap/phonegap-mobile-accessibility>
- <https://github.com/majornista/phonegap-mobile-accessibility-test>

- mattmay@adobe.com
- mijordan@adobe.com

- <http://twitter.com/adobeaccess>
- <http://twitter.com/majornista>
- <http://twitter.com/mattmay>

Demo 2: Test app




Demo 2: Test app

Bd Apps Plugins Docs Blog FAQ Support

iOS 64-bit Support Now Available for PhoneGap 3.5.0+. Read all about it on our [blog!](#)



Your apps + new app




Feedback



PhoneGap Mobile Accessi...

A sample application that responds to the deviceready event and notifies user of the status of system accessibility features.

iOS  


 Update code  Rebuild all  Debug


App ID	Version	PhoneGap
840180	0.0.2	3.6.3


Owned by
mijordan@adobe.com

Source
<https://github.com/majornista/phonegap-mobile-accessi...>

Tag / Branch	Commit	Last built (62)
master	3f00468	1 minute








 public page



CSUN 2014

A demonstration of PhoneGap Mobile Accessibility using the AnyConference demo app and session data from CSUN 2014.

iOS  


 Update code  Rebuild all  Debug


App ID	Version	PhoneGap
840160	1.0	3.6.3

Owned by
mijordan@adobe.com

Source
<https://github.com/majornista/phonegap-app-anyconfer...>

Tag / Branch	Commit	Last built (42)
master	7a44cae	3 days



 private



Adobe