

# Cross Platform Mobile Web-App Development

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Welcome

# *Why mobile apps?*

Why mobile apps? Why would you need an app?

- Packaged well for sale.

- To take advantage of the capabilities of mobile devices – Geolocation/GPS, Accelerometer, Camera (pix, video, AR), etc.

- Offline content presentation

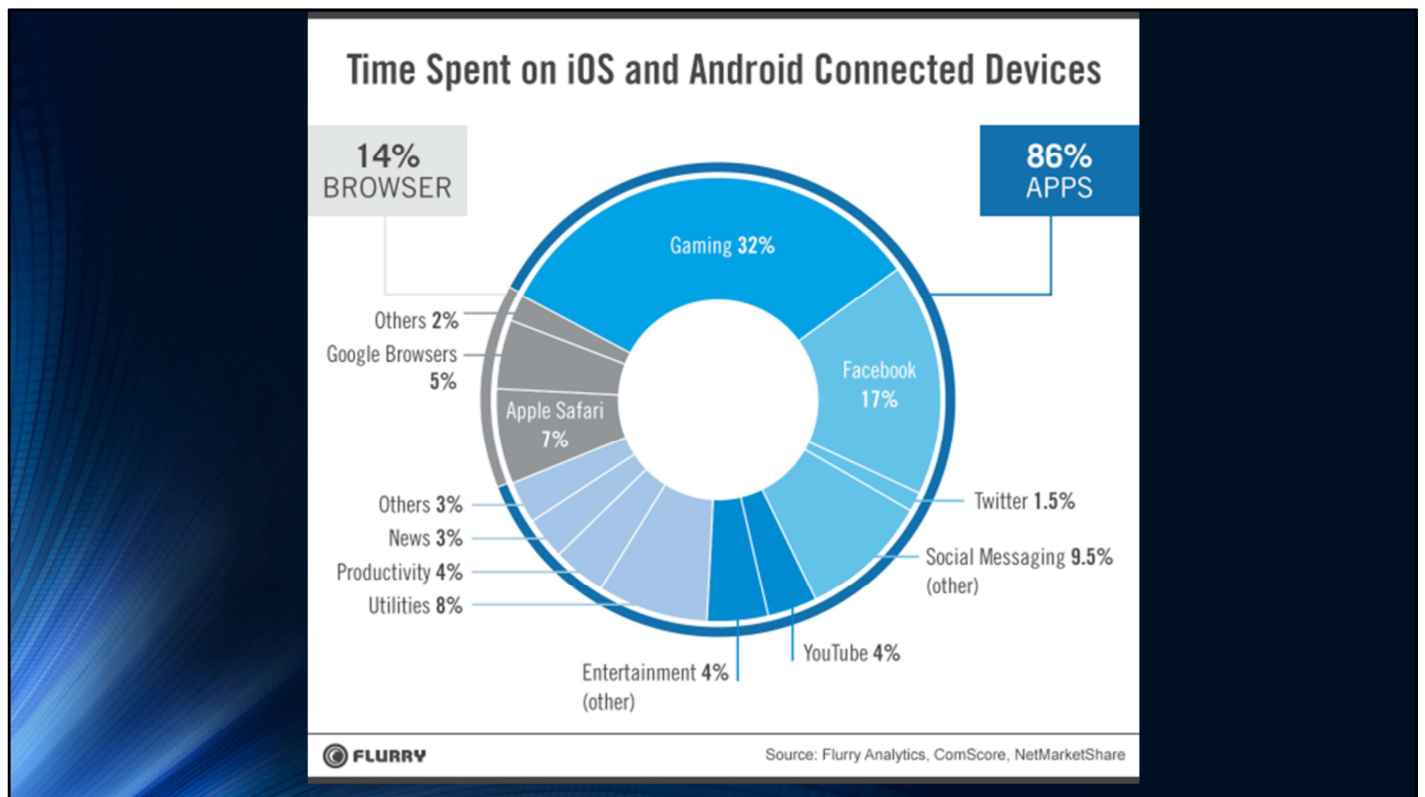
- Mobile devices are at arms length of almost everyone

- Keep users focused on only the material you want them to see



Sir Tim Berners-Lee

Sir Tim Berners-Lee, the real father of the web, warned that such "closed silos of content" risked leaving the web "fragmented".



"As users spend 89% of their mobile time inside apps — and 56% of all traffic is now mobile — creating a mobile app has become a top priority for many businesses. Statistics show that the average American spends more than two hours a day on their mobile device."

<https://www.smashingmagazine.com/2017/12/next-level-mobile-app-development/>

<https://www.smartinsights.com/mobile-marketing/mobile-marketing-analytics/mobile-marketing-statistics/>

<https://www.geekwire.com/2014/flurry-report-mobile-phones-162-minutes/>



Mobile websites – Responsive Design  
Native Mobile app – xcode for iOS  
Hybrid Mobile Apps  
Progressive Web Apps

# *Hybrid Web Apps*



We define hybrid as a web app, primarily built using HTML5 and JavaScript, that is then wrapped inside a thin native container that provides access to native platform features.

# *Hybrid Web Apps*



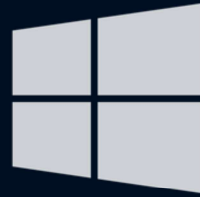
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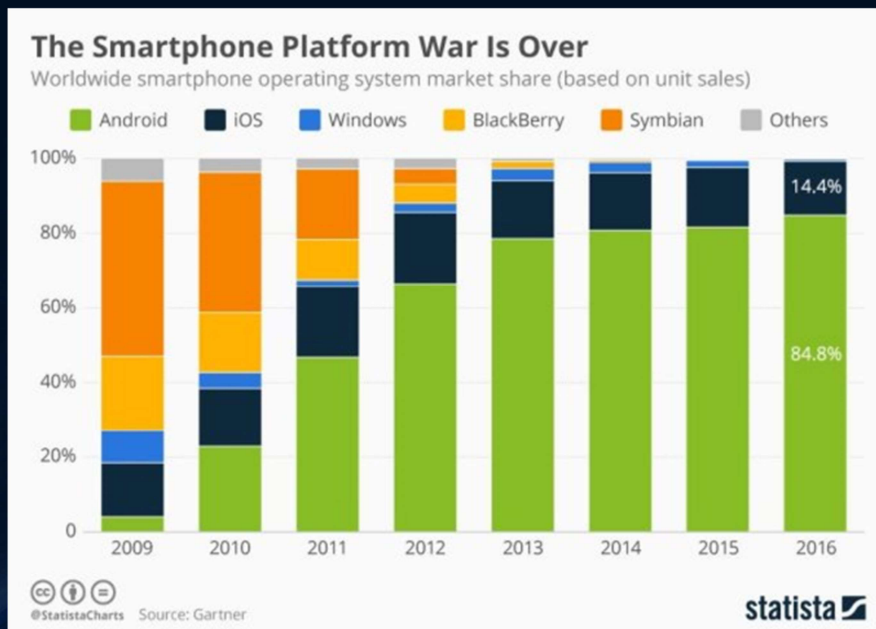
APACHE  
CORDOVA™



Adobe  
PhoneGap







Auburn is very iOS centric, possibly because of Tim Cook being an Auburn alum.

Globally, Android controls nearly 85% of the market

<https://www.statista.com/chart/4112/smartphone-platform-market-share/>





➤ Ionic is a mobile app development *framework*

Framework is a combination of technologies and software



- Ionic is a mobile app development *framework*
- A complete open-source SDK for *hybrid mobile app development*.

Ionic Framework is an open source SDK that enables developers to build high-quality mobile apps using familiar web technologies (HTML, CSS, and JavaScript).  
*hybrid mobile app development*



- Ionic is a mobile app development *framework*
- A complete open-source SDK for *hybrid mobile app development*.
- Think of Ionic as the front-end UI framework that handles all of the look and feel and UI interactions your app needs

Think of Ionic as the front-end UI framework that handles all of the look and feel and UI interactions your app needs in order to be compelling. Kind of like “Bootstrap for Native,” but with support for a broad range of common native mobile components, slick animations, and beautiful design.



Ionic also uses AngularJS for a lot of the core functionality of the framework.



Additionally there are other components used such as Git for versioning, Node.js's NPM, Sass is a CSS preprocessor, etc.

Now switching to Jake Thomas at  
Auburn University in Auburn Alabama.



Hand off to Jake in Auburn, AL..



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# Hybrid Apps

- What are they?
- Why are they important?
- What can they do for me and my organization?
- What in the world is an "Ionic"?

## Ionic....aka where the magic happens

- Ionic is an HTML5 mobile app development framework using Angular JS targeted at building hybrid mobile apps
- Hybrid apps are essentially small websites running in a browser shell in an app that have access to the native platform layer.
- Think of Ionic as the front-end UI framework that handles all of the look and feel and UI interactions your app needs in order to be compelling. Kind of like "Bootstrap for Native," but with support for a broad range of common native mobile components, slick animations, and beautiful design. (magic...ooohh)

## Ionic....aka where the magic happens

- Since Ionic is an HTML5 framework, it needs a native wrapper like Cordova or PhoneGap in order to run as a native app. We strongly recommend using Cordova proper for your apps, and the Ionic tools will use Cordova underneath.
- Those familiar with web development will find the structure of an Ionic app straightforward. At its core, it's just a web page running in an native app shell! That means we can use any kind of HTML, CSS, and Javascript we want. The only difference is, instead of creating a website that others will link to, we are building a self-contained application experience.

## Ionic....aka where the magic happens

- The bulk of an Ionic app will be written in HTML, Javascript, and CSS. Honestly, you can make your experience with Ionic as simple or complicated as you like. There isn't a need to dig into the programming with custom Cordova plugins, but is necessary for some of the higher "phone" functions.
- Well that was all official sounding, but what is a "Cordova"?

## Cordova...fancy wrapper

- Cordova wraps your HTML/JavaScript app into a native container which can access the device functions of several platforms. These functions are exposed via a unified JavaScript API, allowing you to easily write one set of code to target nearly every phone or tablet on the market today and publish to their app stores.
- Allows device access like camera, 3D touch, Calendar, etc.
- Code for "Write your HTML 5 code and let us do the heavy lifting for you".

## Easy way or the hard way? ....pay or free

- Free....with a catch
- Framework, with all built in functions, native plugins are all free
- Can be a development nightmare
  - Mac is required for iOS development
  - Plugins are constantly updating
  - Framework updates
  - Xcode updates
- Any one of those can cost you a day in chasing bugs and related issues

## Easy way or the hard way?....pay or free

- Offered a few integrated software packages at the beginning
  - Separate app that could "emulate" an actual device. Could preview your app on an actual device circumventing side loading and any app store involvement...wasn't great, but it mostly worked.
  - Cloud integration, basic metrics, push notifications.
  - Was originally offered as a free compliment to the framework.
- Ionic has evolved MUCH more over the last few years.



## Easy way or the hard way?....pay or free

- PRO!! (not free, not surprising)
- Creator
- View
- Deploy
- Package
- Monitor

## Easy way or the hard way?....pay or free

- Creator
- Rapid app prototyping
- Creator is a simple drag-&-drop tool for going from idea to App Store, with just the drag of a mouse.
- Visually build high-fidelity apps in minutes. Drag and drop core Ionic UI components, add themes, animations, design files, and even custom code to create real, interactive Ionic mobile apps.
- Compare to using Adobe XD or other wireframes

## Easy way or the hard way?....pay or free

- View
- Remote sharing & testing
- Use the IonicView app for live app testing and to get your app in the hands of clients, testers, or collaborators as quickly as you make changes.
- Circumvent any app stores for internal and external testing
  - Does not require a specific email (apple ID)
- In app feedback
- Mimics native app behavior

## Easy way or the hard way? ....pay or free

- Deploy
- Realtime app updates
- Keep users on the latest version, with updates that works seamlessly in the background.
- Push live app updates directly to users and testers in realtime. No approvals, no delays.
  - Deploy allows you to send live app updates and code changes directly to users and testers, without going through the App Stores. Changes to JavaScript, HTML, and CSS files are included in the service, and fully compliant with Apple and Android requirements.

## Easy way or the hard way?....pay or free

- Package
- Continuous native builds
- Create native apps binaries in the cloud with Ionic Package to get from code to app store with no platform dependencies or complicated build steps.
  - Cloud based so no need for specific development machines
  - No update issues
  - No configuration issues
  - No package/compilation issues

## Easy way or the hard way?....pay or free

- Monitor
- Pinpoint the exact location of errors and exceptions.
- Track runtime errors in your Ionic apps with full web layer visibility and JavaScript stack traces. No setup. It will Just Work.
- Know exactly where to push fixes by identifying offending code in your app's original TypeScript.

## Easy way or the hard way?....pay or free

- This suite is amazing! Take my money!
- Starter – Technically free....with serious limitations
- Developer - \$29 Month (solo license)
- Team - \$49 Month (per team member)
- Enterprise - They don't want to scare you off with the price....
- <https://ionicframework.com/pro/pricing>

## Easy way or the hard way?....pay or free

- Separate fees for apple licensing
  - Individual license (public facing)
  - Enterprise (private store)
- Easy=cost
  - Cloud based building almost worth the whole cost
- Hard=free
  - As long as you stay on top of updates it's not as bad as I make it out to be



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