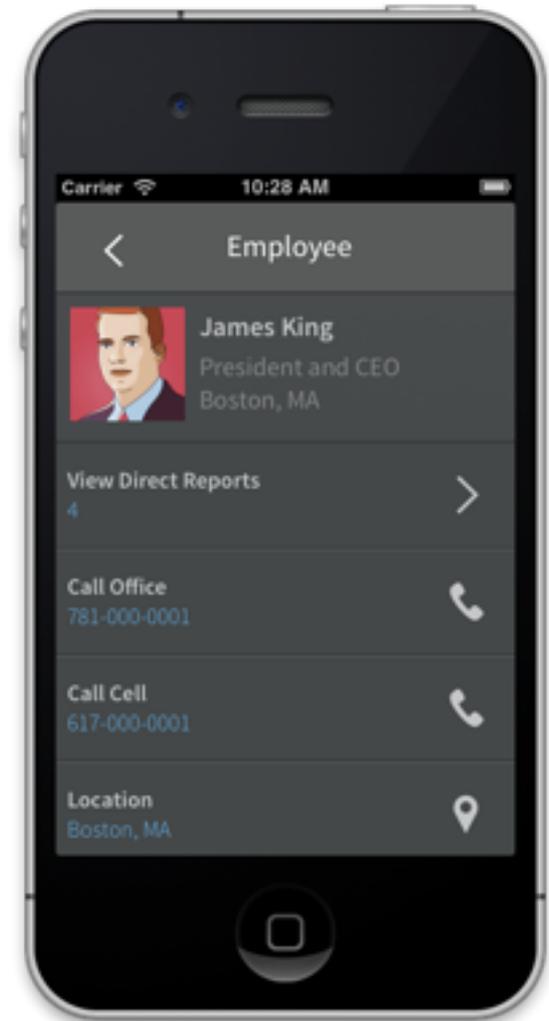


Functionally Mobile

I believe every mobile app should be tested through automation.

Sebastian Tiedtke
@sourishkrout





Paradigm Shift?

More mobile devices
More consumers
More apps



Mobile creates

New Opportunities



Opportunities come with

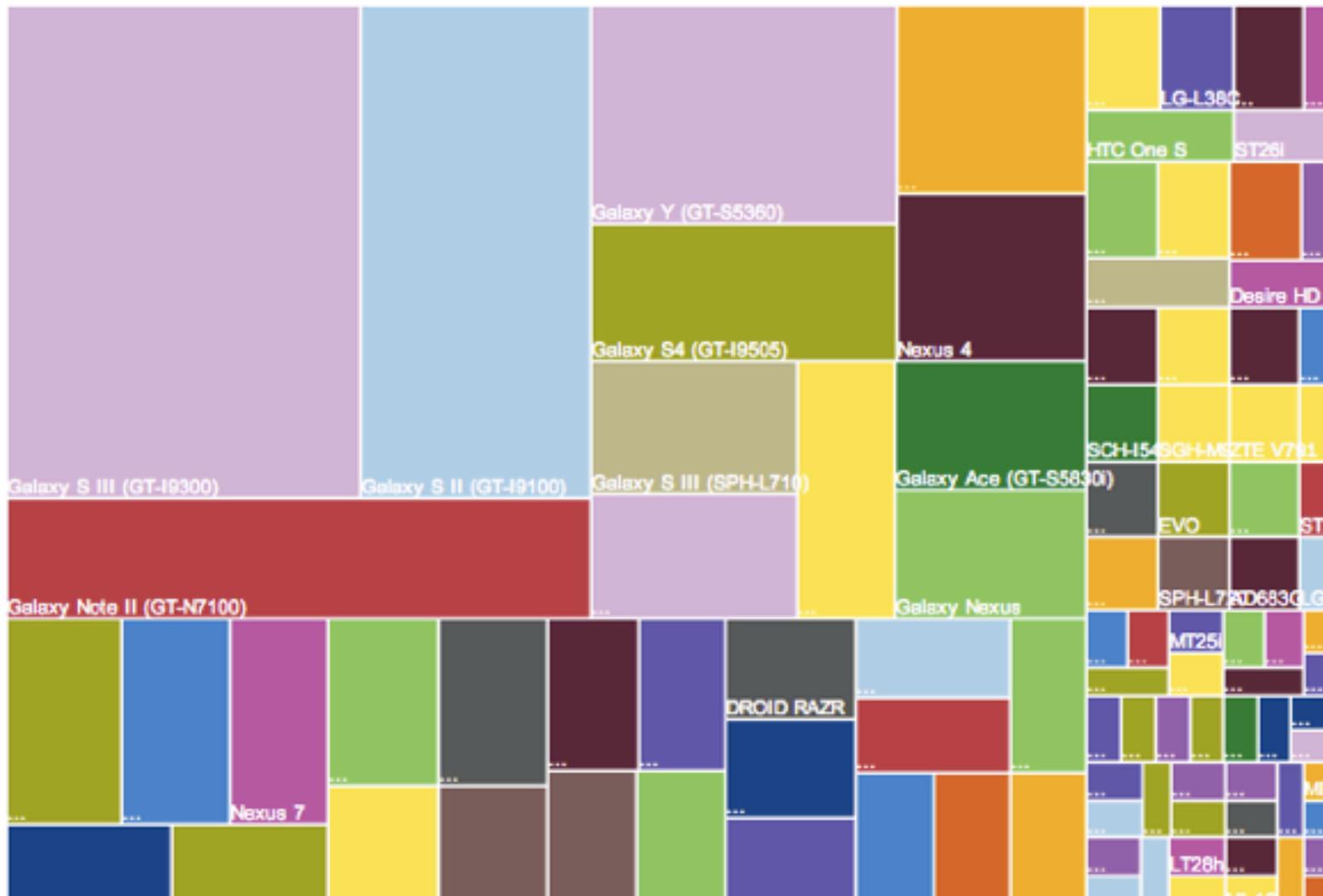
Challenges



Multitude of Platforms



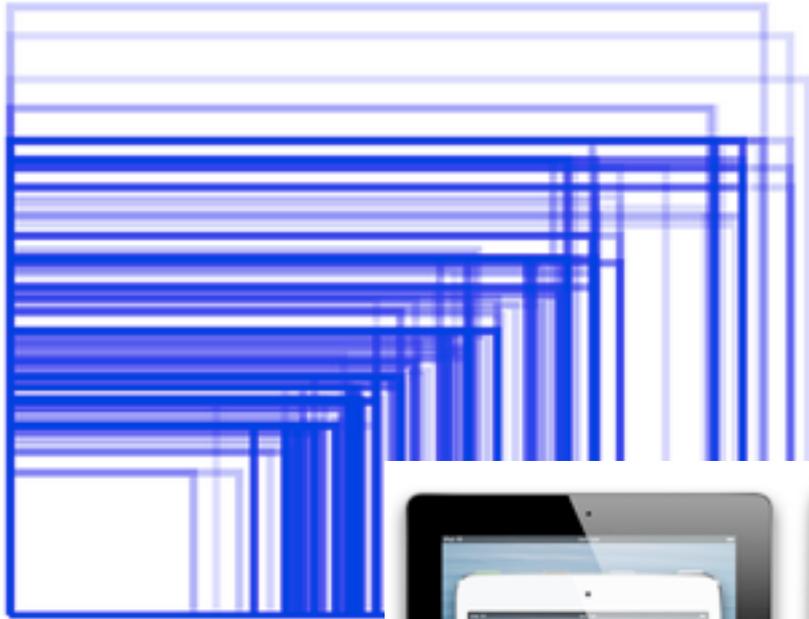
Device Fragmentation



* Rectangle area represents number of device units sold as of July 2012



Different Screen Sizes



AppStore Approval



Quality Assurance

is a key factor to success

- Find bugs before app users do
- Execute tests quickly and repetitively
- Systematically and automated



Comprehensive App Development Approach using

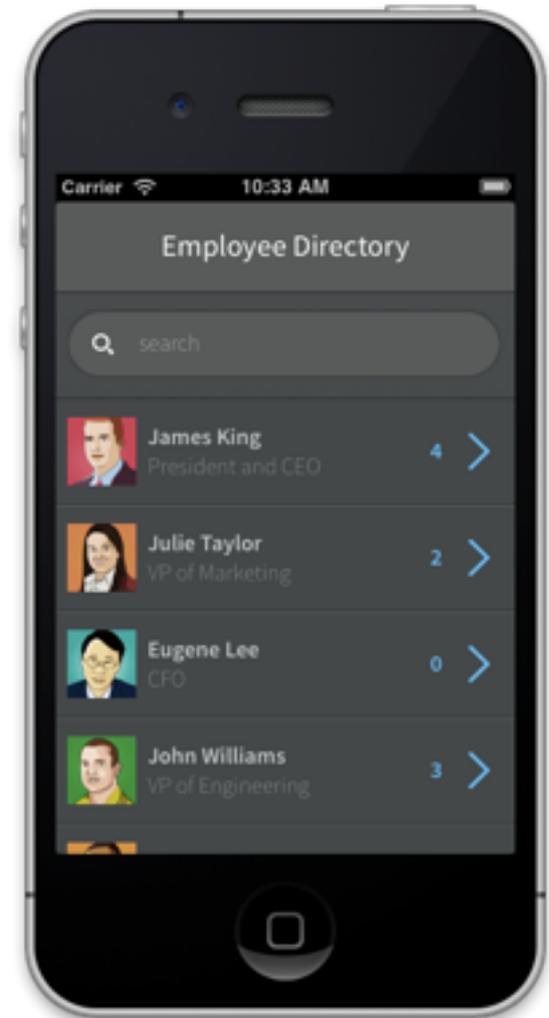
Web Technologies



Test App - Quick Demo

Courtesy of Christophe Coenraets
from Adobe

<https://github.com/ccoenraets/directory-backbone-topcoat>



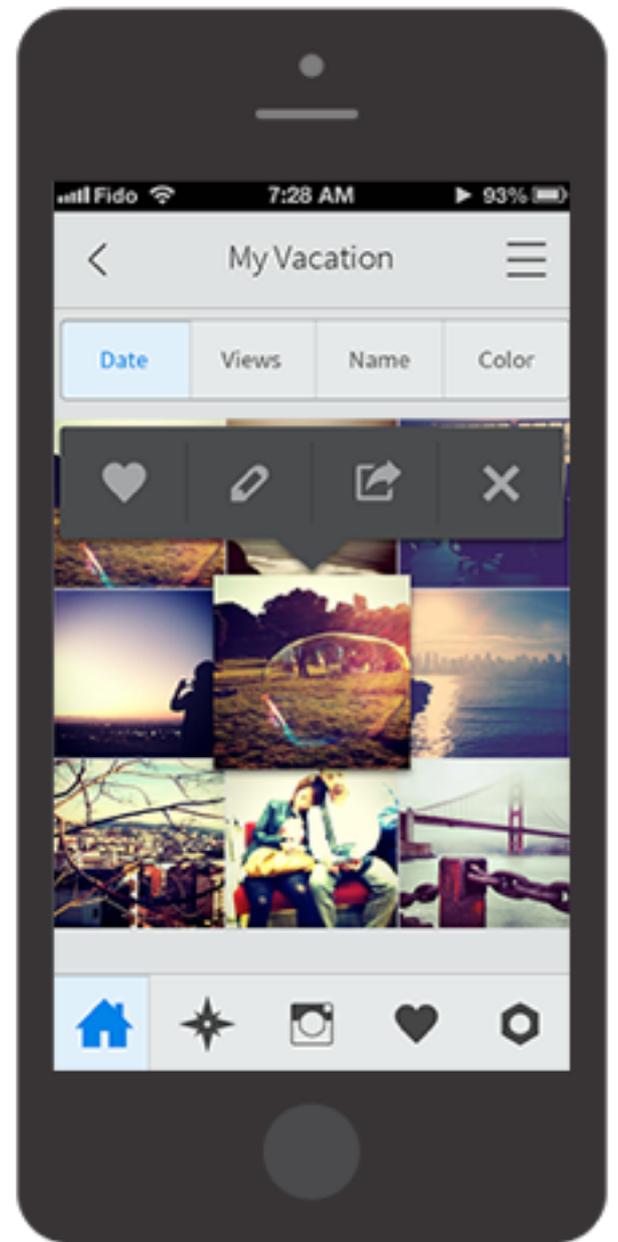
Apache Cordova / PhoneGap

Apache Cordova is a platform
for building native mobile
applications using HTML, CSS
and JavaScript.



Topcoat

CSS for clean and fast web apps.
Benchmarked for performance.
Think twitter bootstrap for apps.





Appium

Appium is an open source test automation framework for use with native and hybrid mobile apps. It drives iOS and Android apps using the WebDriver JSON wire protocol.





Why Appium?

- R1. Test the same app you submit to the market place**
- R2. Write your tests in any language, using any framework**
- R3. Use a standard automation specification and API**
- R4. Build a large and thriving open-source community effort**

Test execution on emulators and real devices.





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What's a Hybrid App?

Apache Cordova runs a web app hosted within a native app (iOS, Android, etc) and make its UI accessible through a "fullscreen" WebView

Cordova exposes native platform APIs to the web app using a unified Javascript API





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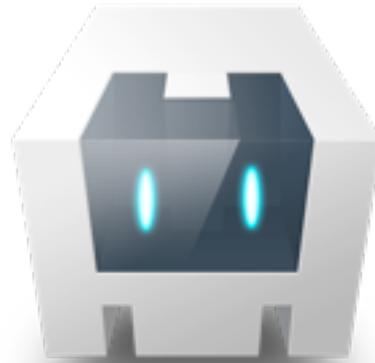


Native vs Webview Context

Same protocol to talk to native as well as webview parts of mobile apps

API calls available to switch contexts





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Native vs Webview Context

```
it('should confirm table cell element is visible', function(done) {  
  h.driver.elementsByTagName('tableCell', function(err, els) {  
    // do something with native table cell (iOS) elements  
  });  
});
```

```
it('should confirm spans are visible', function(done) {  
  h.driver.elementsByTagName('span', function(err, els) {  
    // do something with span elements (DOM)  
  });  
});
```



HomeView

- ✓ should display as initial view (567ms)
- ✓ should allow to search for employees (1631ms)
- ✓ should find five employees for the letter j (1627ms)
- ✓ should scroll down list of employees (2399ms)

EmployeeView

- ✓ should select James King and check his direct reports (4773ms)
- ✓ should open location map and dismiss modal dialog (6944ms)

6 passing (1 minutes)

Test All The Things!

Execute the exact same test suite on iOS and Android

Demo + Code





Test Implementation

Based on node.js 0.11's generators (ES6 Harmony)

- Mocha
- WD.js through viewd.js (generator based)
- monocle.js



```
yield("should open location map and dismiss modal dialog", function*() {
  var options = yield h.driver.elementsByCssSelector('.actions a');
  options.length.should.equal(6);

  yield options[3].click();

  yield nativeSeq(h, function*() {
    yield dismiss(h.driver);
  });
});
```



Harmony? Generators?

Based on Jonathan Lipps' work:

<https://npmjs.org/package/monocle-js>

<https://npmjs.org/package/yiewd>





What's next?

Continuous Integration with Jenkins, Travis, Strider, etc
Appium Functional Testing at Scale using Sauce Labs
(free for Open Source projects)

Smoke tests are a good starting point
Perfect to back up your Javascript unit tests



Please Help Us!

-  Appium: <http://appium.io/>
-  Gappium: <https://github.com/appium/io.appium.gappium.sampleapp>
-  Apache Cordova: <http://cordova.apache.org/>
-  Topcoat: <http://topcoat.io/>
-  @sourishkrout

