Mobile Applications 2013/2014

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UNIFACE

Advanced Development Technology

Agenda

- Devices
- App Types
- Test/Deploy
- Summary

Devices

- Mobile (Feature) Phones

- Windows version 5/6 devices

- Smart Phones

- Tablets

What is to come

- TV
- Car
- Kitchen appliances
- Bathroom scales

Google buys NEST for $3.2B

App Types

- Web
- Hybrid
- Native

Design

- Decide what the app is for

- Understand the user flow

  - Intuitive navigation

  - Keep user informed

- Screen real-estate

  - Small screens even on big mobile devices

- Orientation

 - Restructure the screen?

Design

- Design for higher resolution screens
  - Simple scalable graphics
  - Scale-down better than scale-up

- Implement gestures
  - Not too many
  - Design for big fingers

- Zoom?
  - Looking through a letterbox

App Types

- **Web**
- Hybrid
- Native

Web for Mobile

"According to Google* 75% of website visitors prefer a mobile-friendly site and, when they have visited a mobile-friendly site, 74% of people say they're more likely to return to that site in future. And 67% of people say when they visit a mobile-friendly site they are more likely to buy a product or service."
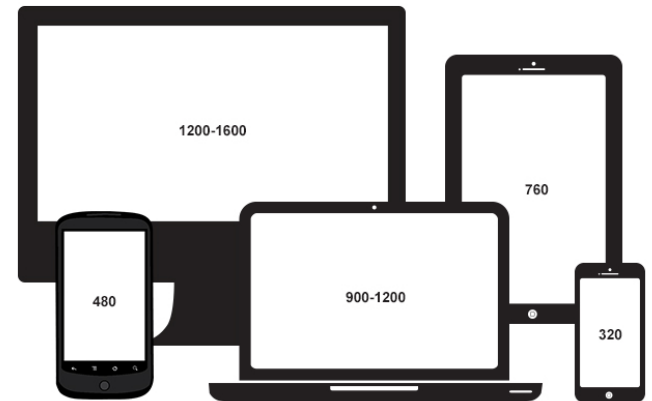
*
All figures provided by Google Mobile Ads Blog, September 2012

Progressive Enhancement

- Content layer = rich HTML mark-up

- Presentation layer = CSS and styling

- Client-side scripting layer = JavaScript behaviours

- Tailored response from server

Adaptive

- ## media queries

```
<link rel="stylesheet" type="text/css"  href="small-device.css"
        media="only screen and (max-device-width: 480px)" />
```

- ## @media rule

```
@media only screen and (max-device-width: 480px){
        div.item {
                        width: 35px;
        }
}
```

- ## Viewport

```
<meta name="viewport" content="width=device-width, user-scalable=no">
```

Responsive

- Fluid Grids
  - Percentages to create a flexible foundation
  - vw and vh
- em and rem
- Flexible Images/Video
- Fluid Typeface and font size

HTML5/CSS 3/JavaScript

- Flexible displays
- Standard technologies
- Responsive
- Rich Interaction
- Animations
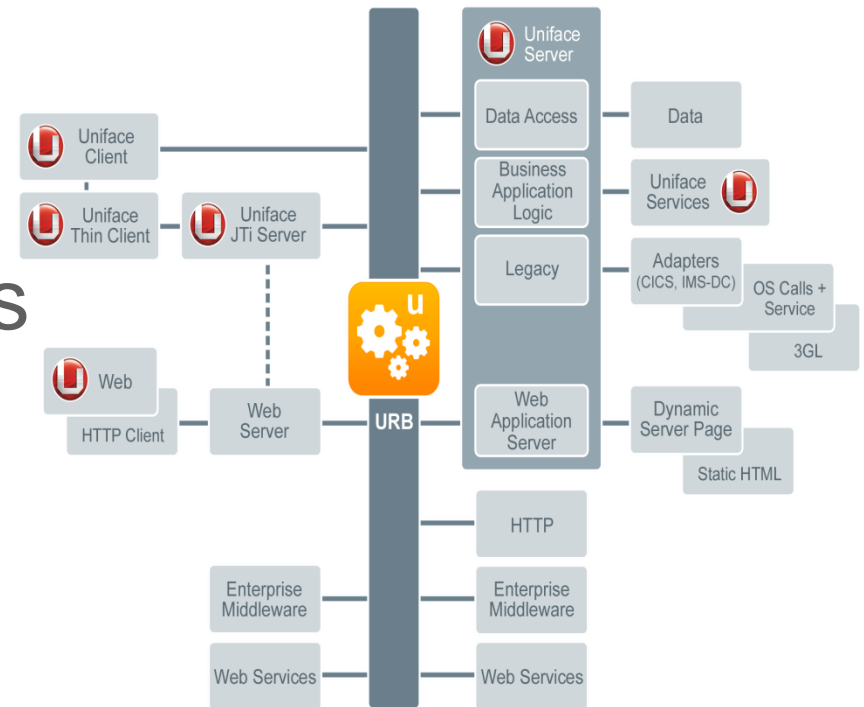- Conditional formatting
- Wide support

Web

Uniface DSPs

- Server communication

- Data handling

- Partial page
  - Blocking
  - Scope

- JavaScript API
  - Client side interface

Uniface

- Model

- Templates

- Components

- Server platforms

- Databases

Simple integration

Some Text

- Styled using CSS

- URL is not only for a web address

- mailto:{address}

- tel:{number}

- sms:{number}

- geo:{location}

  - Open the map application

HTML5

- Geo Location

- Camera
  - Photo
  - Video
  - CSS Filters

- Sound

- More being added

Requires user authorisation

Apple specific

- Meta tags

  - apple-mobile-web-app-capable
    Removes URL bar and other static elements

  - apple-mobile-web-app-status-bar-style
    Add some style to the status bar

  - apple-mobile-web-app-title
    Allows an alternative (short) title to be added

- Links

  - apple-touch-icon
    Application icons (72x72, 114x114, 144x144)

  - apple-touch-startup-image
    Displayed while the application starts

Network

- JavaScript/css
  - Combine and Minify (including Uniface supplied)

- Images
  - Use high compression images
  - Combine multiple images into single file
    - css to clip the correct image section

- Re-use component instances

- Client-side rather than server call-back

- Compress network data (gzip)

- Cache

Manifests

```
<!DOCTYPE html>
▼<html lang="en" xmlns="http://www.w3.org/1999/xhtml" manifest="/demo/musiccity.appcache" class="dj_webkit dj_contentbox">
  ▶<head>…</head>
  ▼<body class=" tundra">
    ▶<div class="header">…</div>
```

- Pre-load and cache files

  - JavaScript

  - CSS

  - Uniface start page

  - Other files

```
CACHE MANIFEST

# Version 1.25

NETWORK:
*

CACHE:
# Application
# start-up screen
/uniface/musiccity/m_main

# CSS
/demo/css/mobile.css

# App JavaScript
/demo/js/musiccity.js
/demo/js/masonry.pkgd.js

# DSP JavaScript
/demo/dspjs/1/m_a_srch_lst.js
/demo/dspjs/1/m_artist_details.js
/demo/dspjs/1/m_artist_results.js
```

Manifests

- At start-up

  - Checks for modification

  - JavaScript events

```
Application Cache Checking event
Application Cache Downloading event
Application Cache Progress event (0 of 56) http://musiccity.uniface.com/demo/images/topbanner_tile.png
Application Cache Progress event (1 of 56) http://musiccity.uniface.com/demo/images/center_logo.png
Application Cache Progress event (2 of 56) http://musiccity.uniface.com/demo/images/mobile/center_logo.png
Application Cache Progress event (3 of 56) http://musiccity.uniface.com/demo/images/party_footer.png
Application Cache Progress event (4 of 56) http://musiccity.uniface.com/demo/images/mobile/topbanner_tile.png
Application Cache Progress event (5 of 56) http://musiccity.uniface.com/demo/images/empty_album_cover.png
Application Cache Progress event (6 of 56) http://musiccity.uniface.com/demo/images/search_icon.png
Application Cache Progress event (7 of 56) http://musiccity.uniface.com/demo/images/mobile/search_icon.png
Application Cache Progress event (8 of 56) http://musiccity.uniface.com/uniface/common/dojo/nls/dojo-for-uniface_en-us.js
Application Cache Progress event (9 of 56) http://musiccity.uniface.com/uniface/common/dijit/themes/tundra/Tree_rtl.css
Application Cache Progress event (10 of 56) http://musiccity.uniface.com/uniface/common/dijit/themes/tundra/Tree.css
Application Cache Progress event (11 of 56) http://musiccity.uniface.com/uniface/common/dijit/themes/tundra/TitlePane_rtl.css
Application Cache Progress event (12 of 56) http://musiccity.uniface.com/uniface/common/dijit/themes/tundra/TitlePane.css
Application Cache Progress event (13 of 56) http://musiccity.uniface.com/uniface/common/dijit/themes/tundra/TimePicker.css
Application Cache Progress event (14 of 56) http://musiccity.uniface.com/uniface/common/dijit/themes/tundra/form/Slider.css
Application Cache Progress event (15 of 56) http://musiccity.uniface.com/uniface/musiccity/mobile
```

- Check for network

Summary

Cross
Platform

Platform
Specific

App Types

- Web
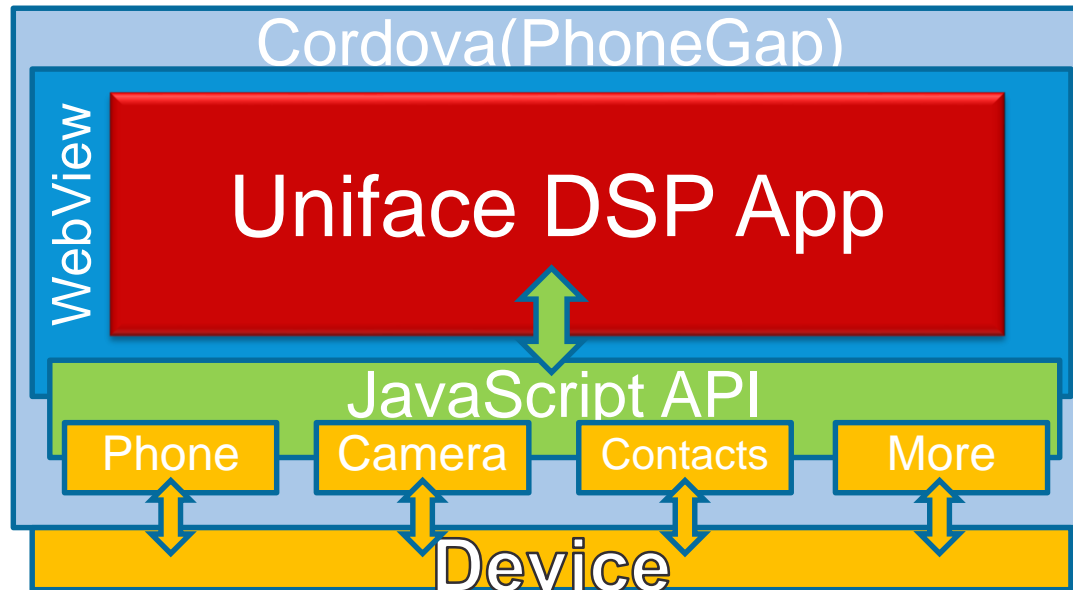- **Hybrid**
- Native

WebView

- Package application

- Remove decoration (URL bar)

- Access to
  - Hardware
  - Widgets
  - other Apps

- Not cross platform

Hybrid

Apache Cordova (PhoneGap)

- WebView
  - JavaScript Access to hardware
  - Common interface
  - Access to system
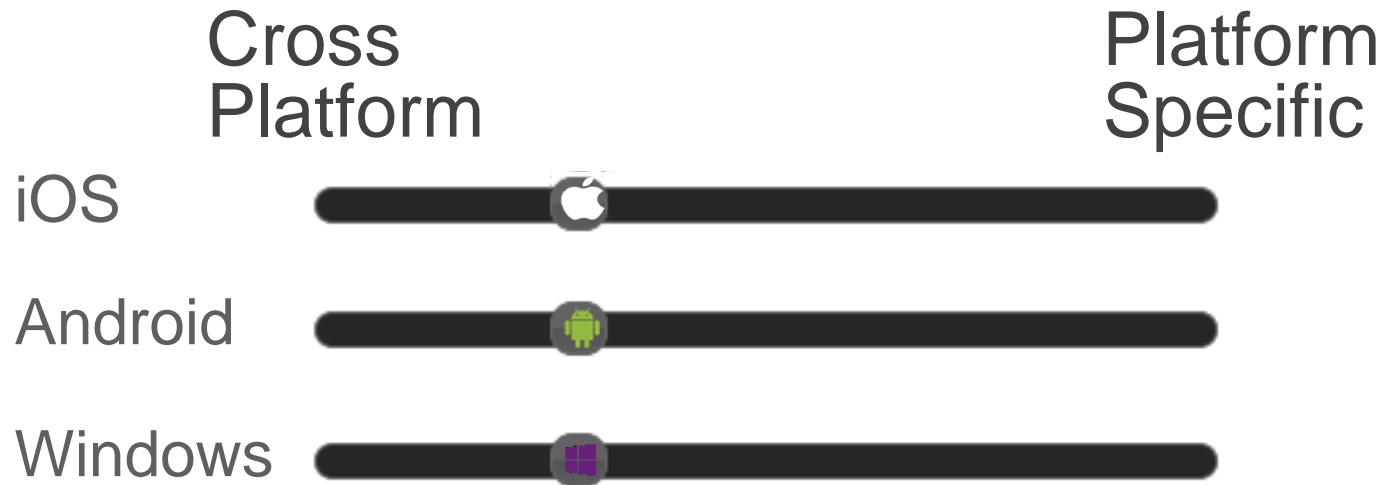   - Cross platform interface

Support Matrix

The following shows the set of development tools and device APIs available for each mobile platform. The device APIs listed here are provided by the core plugins, additional APIs are available via third-party plugins*. Column headers display the CLI's shorthand names.

	amazon-fireos	android	blackberry10	Firefox OS	ios	Ubuntu	wp8 (Windows Phone 8)	windows (8.0, 8.1, Phone 8.1)	tizen
cordova CLI	✓ Mac, Windows, Linux	✓ Mac, Windows, Linux	✓ Mac, Windows	✓ Mac, Windows, Linux	✓ Mac	✓ Ubuntu	✓ Windows	✓	✗
Embedded WebView	✓ (see details)	✓ (see details)	✗	✗	✓ (see details)	✓	✗	✗	✗
Plug-in Interface	✓ (see details)	✓ (see details)	✓ (see details)	✗	✓ (see details)	✓	✓ (see details)	✓	✗
Platform APIs									
Accelerometer*	✓	✓	✓	✓	✓	✓	✓	✓	✓
Battery Status*	✓	✓	✓	✓	✓	✗	✓	✗	✓
Camera*	✓	✓	✓	✓	✓	✓	✓	✓	✓
Capture*	✓	✓	✓	✗	✓	✓	✓	✓	✗
Compass*	✓	✓	✓	✗	✓ (3GS+)	✓	✓	✓	✓
Connection*	✓	✓	✓	✗	✓	✓	✓	✓	✓
Contacts*	✓	✓	✓	✓	✓	✓	✓	partially	✗
Device*	✓	✓	✓	✓	✓	✓	✓	✓	✓
Events*	✓	✓	✓	✗	✓	✓	✓	✓	✓
File*	✓	✓	✓	✗	✓	✓	✓	✓	✗
File Transfer*	✓	✓	✓ * Do not support onprogress nor abort	✗	✓	✗	✓ * Do not support onprogress nor abort	✓ * Do not support onprogress nor abort	✗
Geolocation*	✓	✓	✓	✓	✓	✓	✓	✓	✓
Globalization*	✓	✓	✓	✗	✓	✓	✓	✗	✗
InAppBrowser*	✓	✓	✓	✗	✓	✓	✓	uses iframe	✗
Media*	✓	✓	✓	✗	✓	✓	✓	✓	✓
Notification*	✓	✓	✓	✗	✓	✓	✓	✓	✓
Splashscreen*	✓	✓	✓	✗	✓	✓	✓	✓	✗
Storage	✓	✓	✓	✗	✓	✓	✓ localStorage & indexedDB	✓ localStorage & indexedDB	✓
Vibration*	✓	✓	✓	✓	✓	✗	✓	✗	✗

Summary

Cross
Platform

Platform
Specific

iOS

Android

Windows

App Types

- Web
- Hybrid
- **Native**

Native

- Low level coding
  - Intensive graphics
  - Optimal performance

- Single file install / App stores

- Can use Uniface servers

Native knowledge

Operating system	Language	Development platform
iOS (Apple)	Objective C/SWIFT	Mac
Android (Google)	Java	Win/Mac/Linux
Windows Phone	.NET Mobile	Windows
Blackberry	Java	Win/Mac/Linux

Summary

Cross
Platform

Platform
Specific

iOS

Android

Windows

Native app?

Agenda
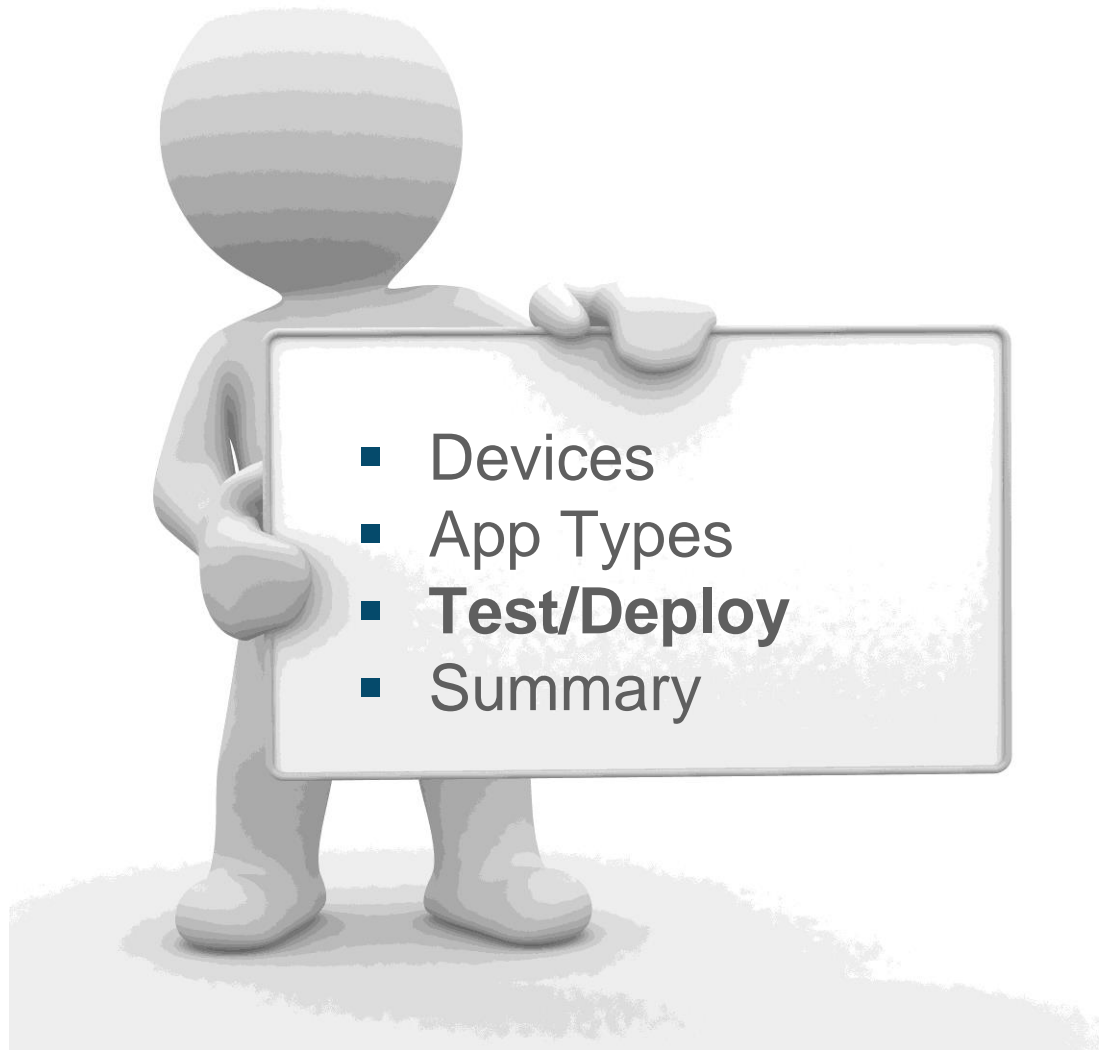
- Devices
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- **Test/Deploy**
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Testing/Debugging

- Vendor and 3rd party emulators
  - Good first step
  - Almost native feel – but not quite

- Device
  - Executed on a native device
  - Debug/Examine on desktop

HTML/JavaScript

- Viewable in browser

- Save to Desktop

- Always up to date

Hybrid/Native

- Natively Compile/Sign

- Deployed using vendor tools

- Publish in App-Stores

Agenda

- Devices
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- **Summary**

Summary

- Web/hybrid
  - Flexible
  - Cross platform
  - Generic skills
- Native
  - Specific knowledge
  - Not portable
  - Anything possible

Thank You's