Armedia

Drupal and PhoneGap
Building Mobile Apps

Armedia

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I

"in brief..."

The mobile landscape is convoluted. Lots of service providers. Lots of development options. Blurred lines of distinction between web content and mobile apps

PhoneGap is a rich, multi-platform mobile development platform that allows developers that uses web technologies to develop one source code baseline* and deploy to many mobile Operating Systems

Use of PhoneGap with Drupal has little development impact on Drupal--mainly requires site building skills and configurations

Integrating PhoneGap with Drupal for Armedia client, The Well Project, was the implementation of a mobile first (only) strategy focusing on broad reach to a large global community of users

When building mobile, understand key best practices and lessons learned for what works in mobile--pay close attention to usability, testing, code sustainability and deployment
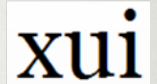
* For anything non-trivial, there may well be some additional native coding required for each deployed mobile OS platform

II

SoLoMO

Social. Local. Mobile.

The Mobile Landscape

Mobile Development Approaches

Native

Web App (HTML 5)

Hybrid

What Approach is Best?*

Performance apps = native

Cross-platform apps = hybrid

Transactional apps = native/hybrid

Offline features = hybrid/native

Simple, content apps = web apps

Mobile ready web content = responsive design, mobile themes (e.g. OMEGA)

Two Questions First!

1. What is the purpose of the App?

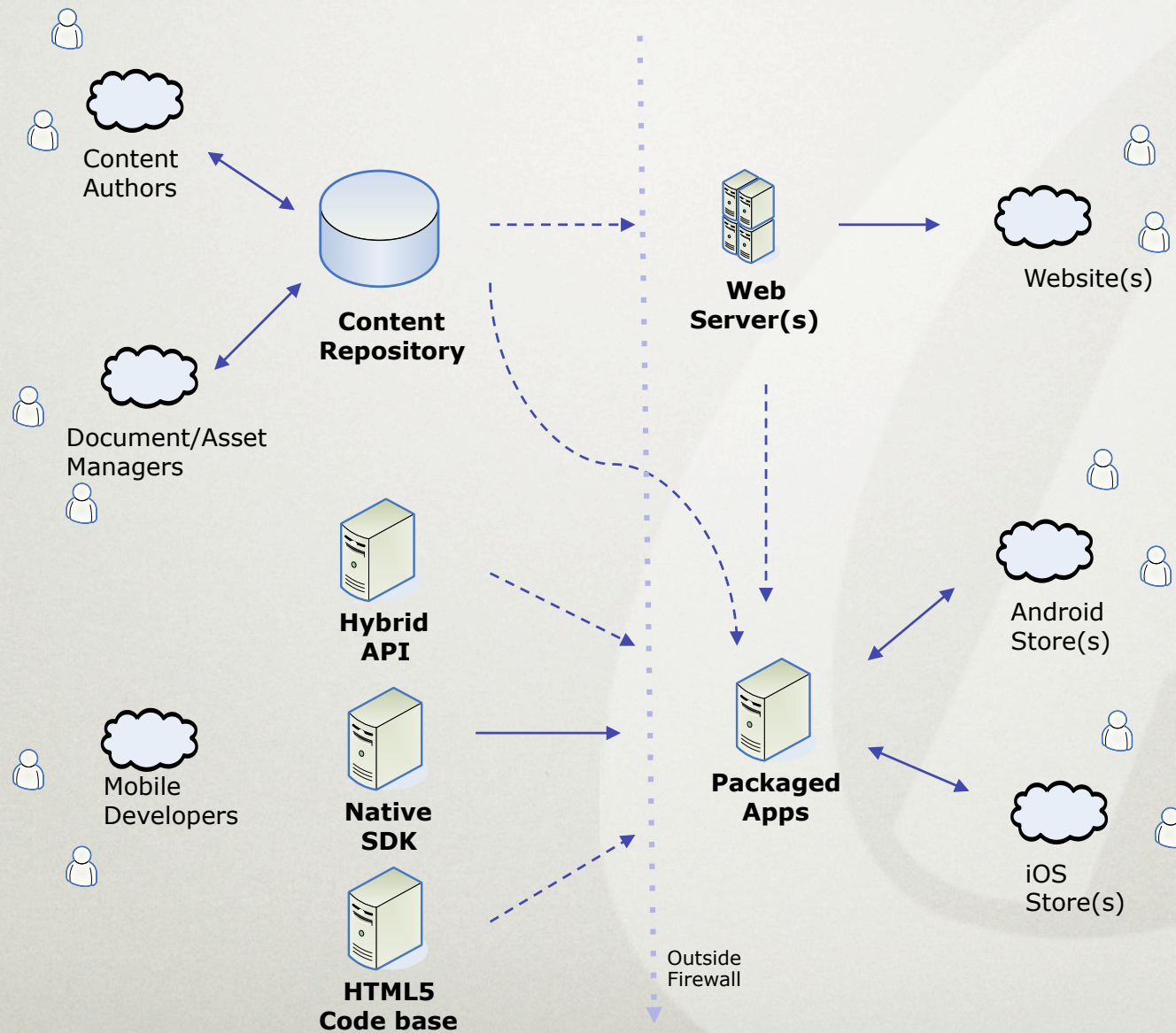2. What are the *realistic* deployment platforms? (consider users, constraints)

* Not gospel, but based on solid evidence...

Cross-Platform Mobile Tools

CROSS-PLATFORM TOOLS TRACTION

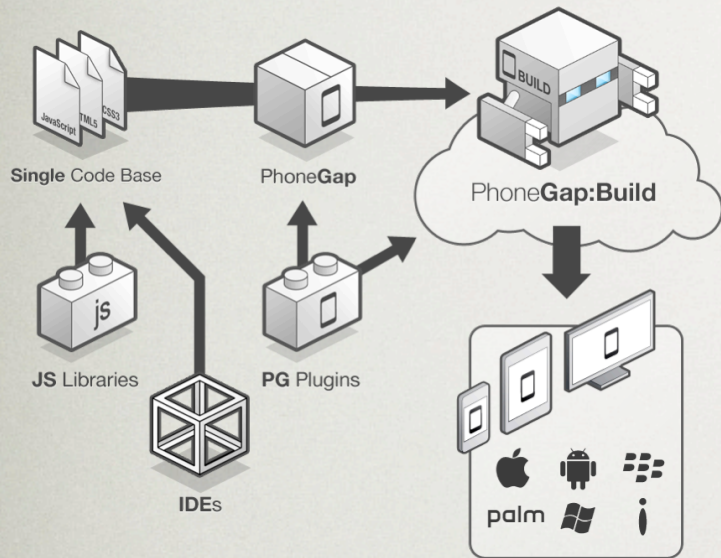| Tool	Market Traction	Reference Applications
Adobe (Flash, AIR, Flex)	3,000,000 estimated developers	Machinarium (iOS), eBay, BBC iPlayer Adobe claim 9/10 of the most popular Facebook games use Flash
Ansca Mobile (Corona)	100,000 downloads 10,000 developers (estimated) incl. 873 studios. Apps downloaded 35 million times in 2011	The Secret of Grisly Manor, Bubbleball and Unicorn Studio.
Appcelerator	250,000 through Titanium (pre Aptana) 1,600,000 through Aptana IDE 35,000 apps published and deployed on 40 million devices	NBC iPad App, LEGOLAND, Zipcar, and PwC's MyTravel app.
Marmalade	50,000 developers installed base including EA and PopCap	Plants vs. Zombies, Call of Duty: Black Ops: Zombies, Need for Speed Shift, Cut The Rope, Lara Croft Guardian of Light and Sim City Deluxe
MoSync	180,000 downloads 20,000 registered users	Enterprise apps, e.g., Gemalto, Intel, Navtech
RhoMobile (now Motorola)	100,000 downloads	SuperTrainerHQ, Pilsner Urquell Navigator, IPv6 World congress, Touristik Mainz
PhoneGap	600,000 SDK downloads	Netflix, LinkedIn and Ars Technica Reader for iPad
Sencha	1,600,000 downloads 300,000 registered community members	Direct.TV app, Tours in Malta, Bugs in the Garden and Just One More by Ribbit
Unity Technologies (Unity)	800,000 registered developers 200,000 active each month. More than 87 million total installs of the web player. 1,500 Unity based games in the iPhone App store	Shadowgun, Battleheart, Gears, Samurai II and Snuggle Truck

source: VisionMobile research

Hybrid Mobile and Content Management

Content Authors

Document/Asset Managers

Content Repository

Mobile Developers

Hybrid API

Native SDK

HTML5 Code base

Web Server(s)

Website(s)

Packaged Apps

Android Store(s)

iOS Store(s)

Outside Firewall

III

What is PhoneGap?

Development Platform to Create Native Mobile Apps Using Web Technologies

JavaScript Library

Native Library for Most Mobile Platforms

Compilation Helpers

Not a UI Framework

Needs Compilation per Platform

Why PhoneGap?

Take advantage of **HTML5** and **CSS3**

Use **JavaScript** to write your code

Access **Native Features**

Deploy your app to **Multiple Platforms**

Take advantage of **PhoneGap Build**

Add **PhoneGap Plugins** to your project

Use **Tools** from the community

Get help from the growing **Community**

Multi-Platform

Open Source

Standards Adoption

HTML5/CSS/JS

Rich Developer Community

Free

Native Plug-ins to Add Custom Native Code (where needed)

Mobile Drupal Website

Responsive Design (Omega, Zen, Adaptive themes)
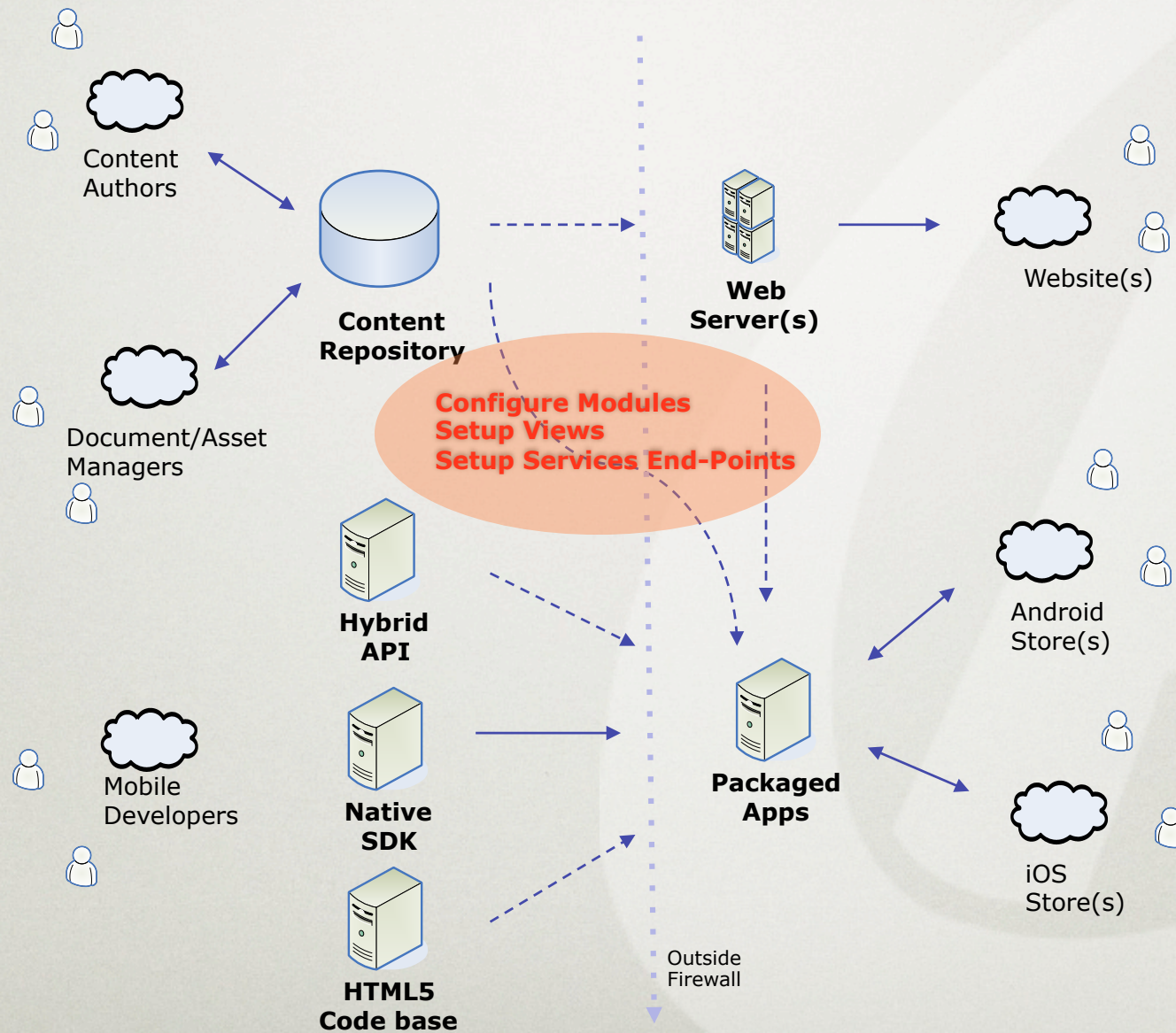
Mobile Frameworks

HTML cache.manifest

BUT...

Need to be online

Limited native features

PhoneGap: Little Impact on Drupal!

Content Authors

Document/Asset Managers

Content Repository

Mobile Developers

Hybrid API

Native SDK

HTML5 Code base

Configure Modules
Setup Views
Setup Services End-Points

Web Server(s)

Website(s)

Packaged Apps

Android Store(s)

iOS Store(s)

Outside Firewall

Drupal Mobile App Generator (MAG)

Drupal Project to Assist in Creating Multi-Platform Mobile Apps

MAG Exports a Website to HTML so PhoneGap can Compile it into Native Mobile Apps

Useful as a Starting Point

http://drupal.org/project/mag

Instructions

- Build a site
- Add a mobile theme
- Install MAG
- Select a menu, export the site
- Copy it to PhoneGap
- PhoneGap mobile app is Ready!

Drupal 8 | Mobile

Mobile-friendly Drupal

Web Services for Native App Integration

All Core Themes are Responsive

Full HTML5 Support

Mobile Administration

Front-end Performance Improvements

http://drupal.org/documentation/mobile

IV

The Well Project Mobile

Non-Profit Leader in Advocacy for Women with HIV
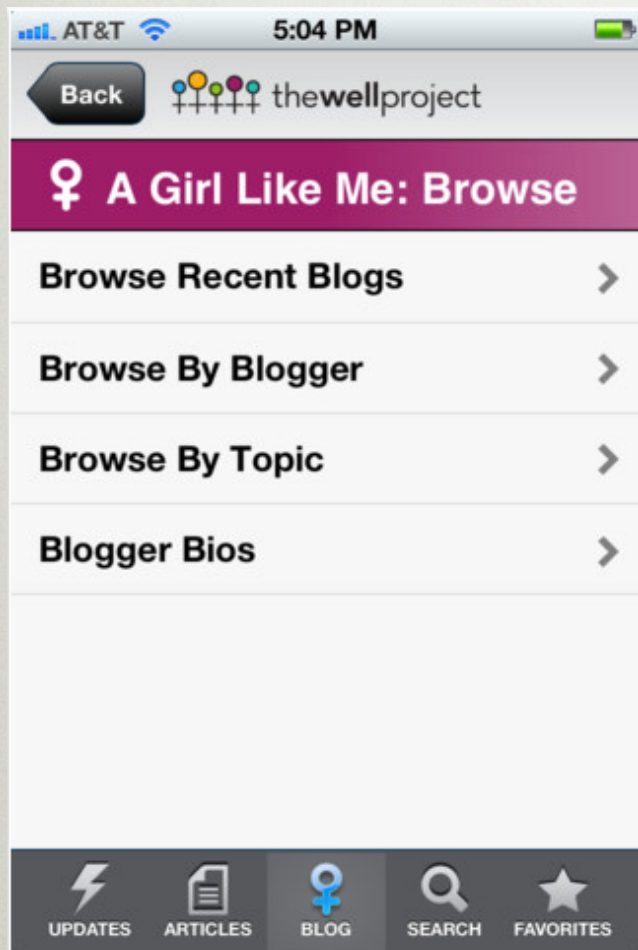
Global Subscribership; over 70% Non-US

Large Existing Web Presence

Content in Documentum and WordPress

Transition to Drupal for WCM

Mobile First Strategy

The Well Project Approach

Clarify Vision

Identify **Specific** Mobile Purpose

Prioritize Scope

Roadmap

Content First!

Mobile Only!

Sustainable Development

Hit the Date! (International HIV & AIDS Conference)
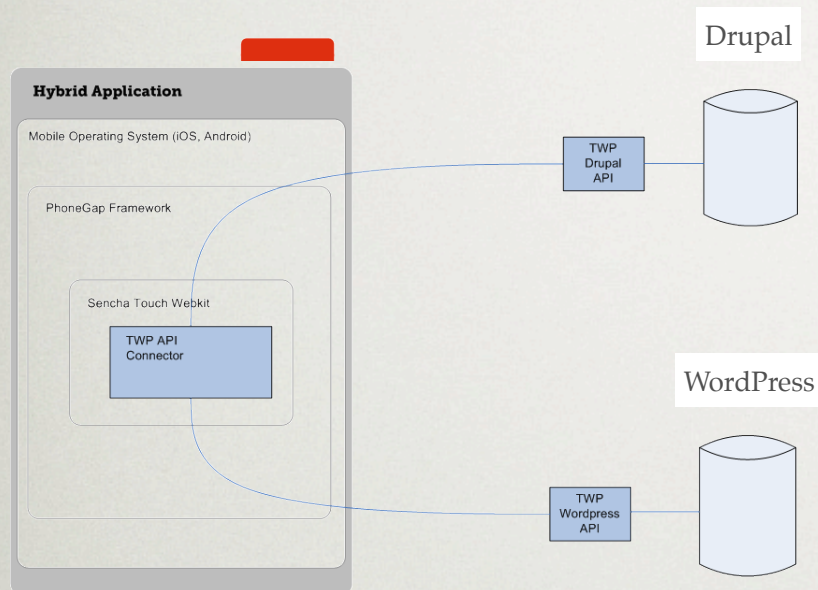
UX Design | Mobile Wireframes

UX and Development Team

Low Fidelity (mock-ups)

Client Approval

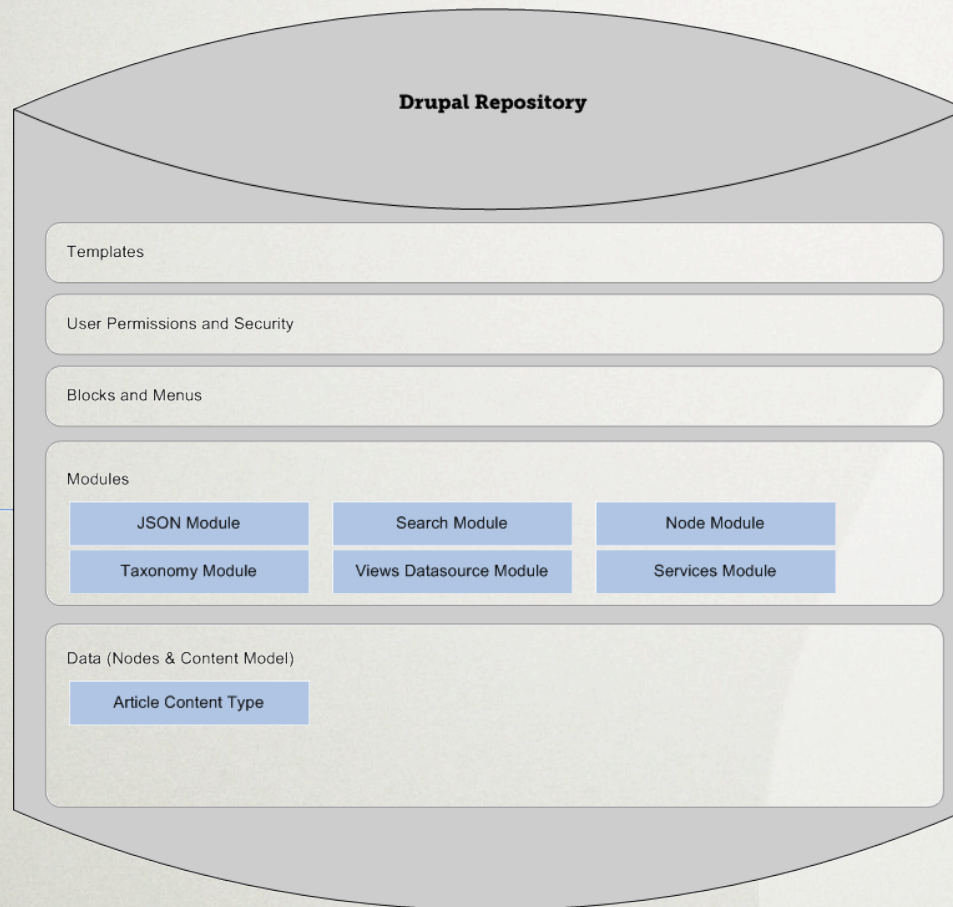Mid Fidelity with Annotations

Technical Design

Focus on iOS (4&5) and Android (2.2, 2.3 and 4.0)

Write Once, Deploy Many

Use Sencha Touch as UI Framework

Integrate with Drupal and WordPress for Content

A View into Drupal

Drupal Repository

Templates

User Permissions and Security

Blocks and Menus

Hybrid
Application

Modules

| JSON Module | Search Module | Node Module |
| Taxonomy Module | Views Datasource Module | Services Module |

Data (Nodes & Content Model)

Article Content Type

Custom Content Module to Model TWP Articles
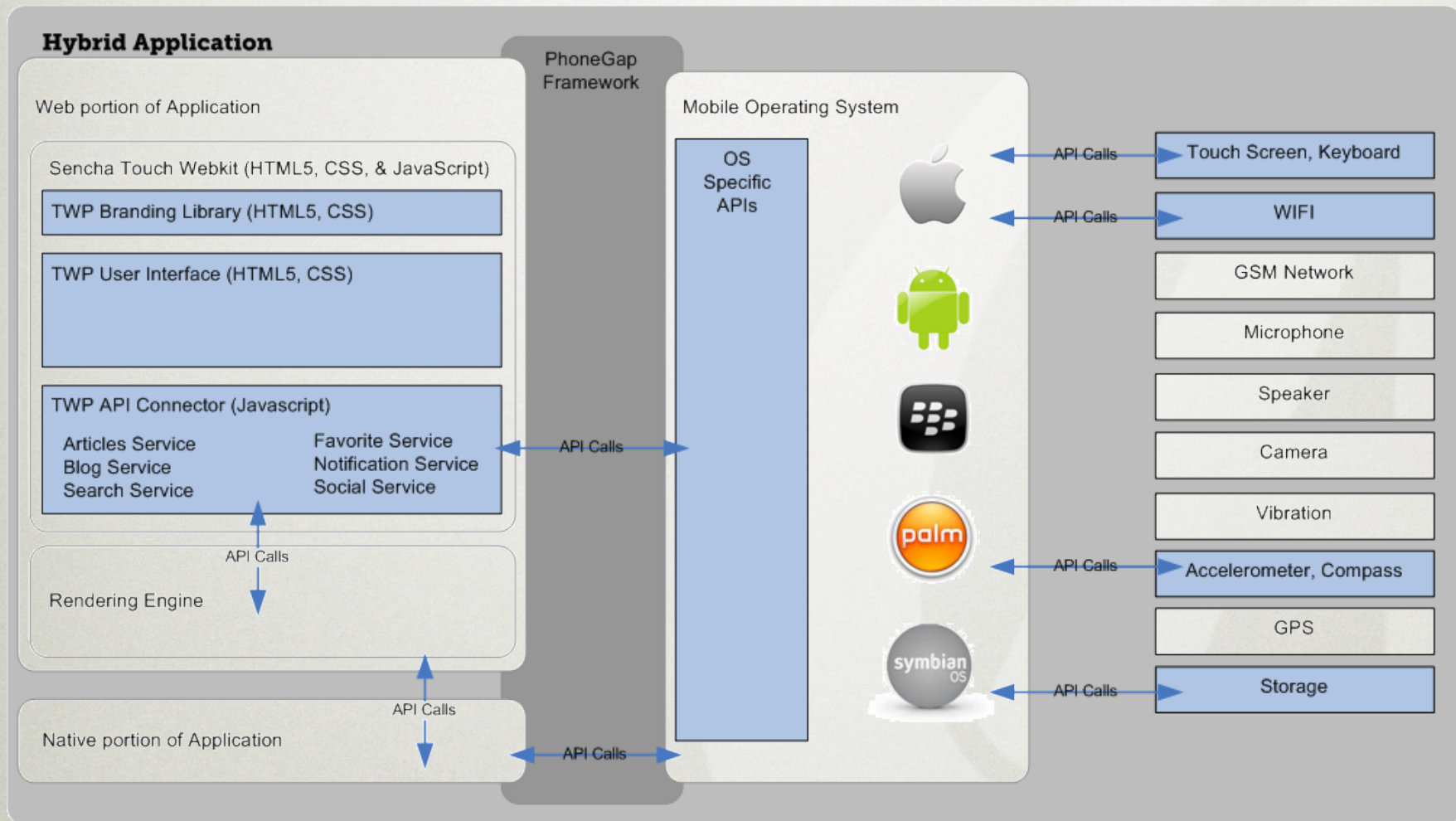
View and Datasource Drupal Modules to Generate JSON

Use of Number of Drupal Plugins

Drupal Plugins
ctools
Google Analytics
Views PHP
Token
Patauto
Wysiwig
IMCE
IMCE Wysiwyg bridge
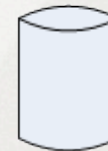Views
Views Datasource

Application Architecture

Hybrid Application

Web portion of Application

Sencha Touch Webkit (HTML5, CSS, & JavaScript)

TWP Branding Library (HTML5, CSS)

TWP User Interface (HTML5, CSS)

TWP API Connector (Javascript)

Articles Service   Favorite Service
Blog Service   Notification Service
Search Service   Social Service

API Calls

Rendering Engine

API Calls

Native portion of Application

API Calls

PhoneGap Framework

Mobile Operating System

OS Specific APIs

API Calls

API Calls

API Calls   Touch Screen, Keyboard
API Calls   WIFI
GSM Network
Microphone
Speaker
Camera
Vibration
API Calls   Accelerometer, Compass
GPS
API Calls   Storage

Physical Architecture
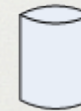
Physical Architecture Scaling
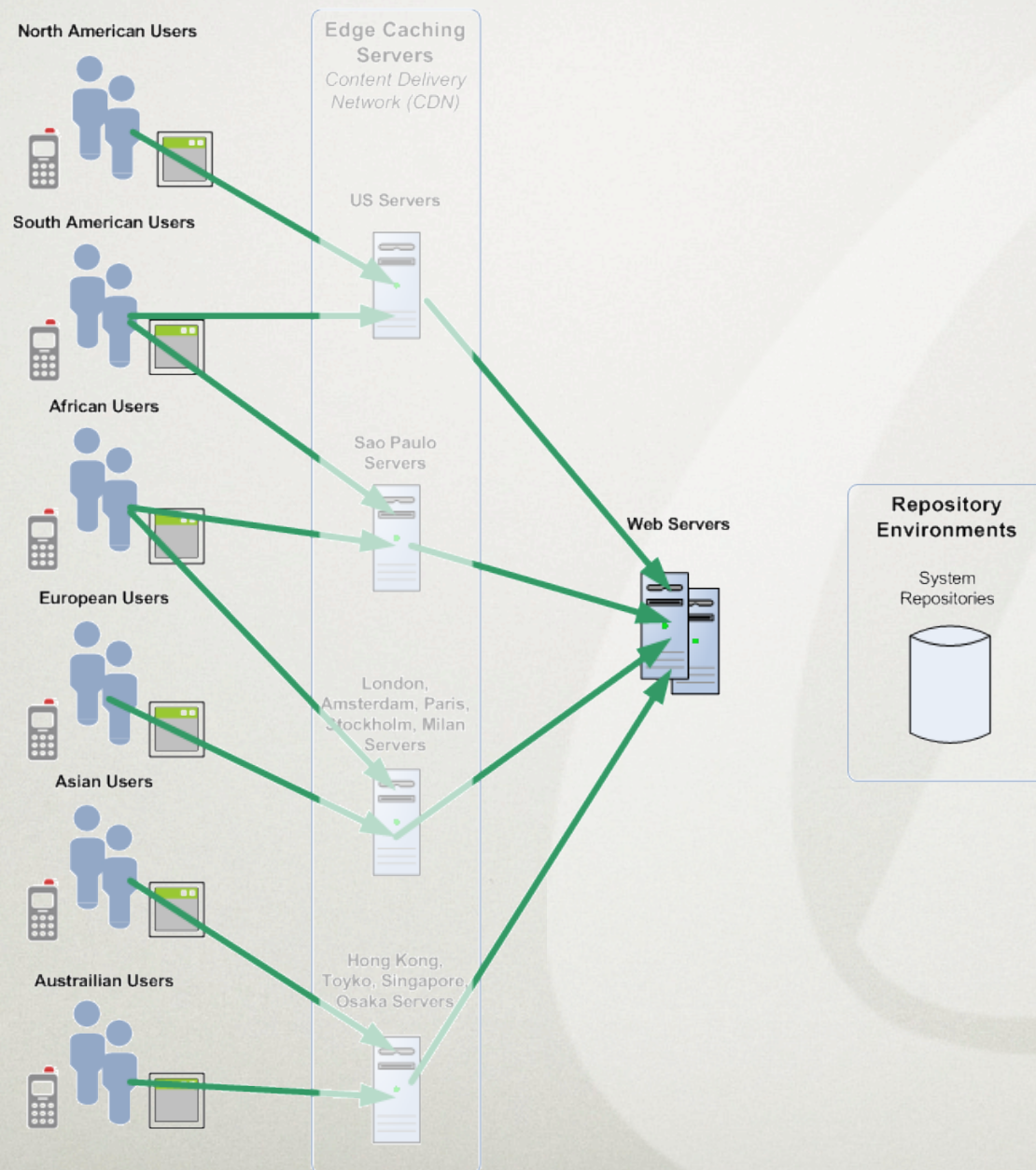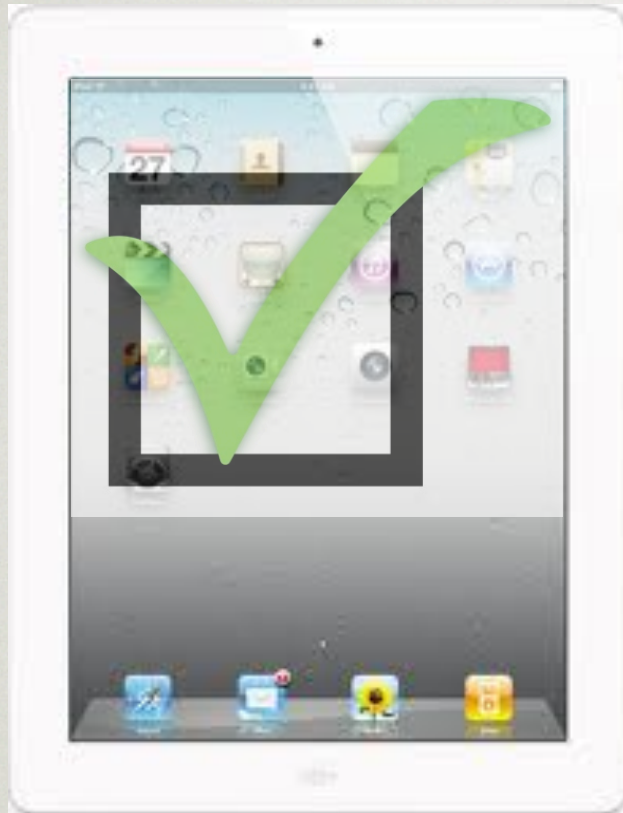
Extending PhoneGap and Drupal

Leveraged Sencha Touch Framework to Accelerate UI Development

Several Custom PhoneGap Services, including: Articles, Blog, Search, Social, Storage

Caching Layer to Improve Drupal API Performance

Number of Drupal and PhoneGap Plugins Considered

V

Put user first

Simplify, focus functionality

Design for touch

Use the screen real estate

Develop in Agile sprints

Think Screen Resolution

Think Bandwidth

DOs

Design apps as websites

Build universal apps

Design fixed layout apps

Design apps that require instruction

Make it hard find navigation

Introduce confusing/conflicting gestures

DON'Ts

Testing Your App

PhoneGap emulator has lots of limitations

Unit test on the actual device (not just the emulator)

Test for different devices, operating systems and screen resolutions

Do thorough pre-store submission checklist review

Test the installation process, upgrades workflow, application load

Test for response to external events (app notifications, Skype calls, etc)

Learned...the hard way!

Prototype/wireframe quickly, cheaply using simple mobile presentation templates (Powerpoint or Keynote)

Learn xcode (you will need to build, and develop native containers)

Use animation to show immediate app responsiveness

Swipe instead of tap

The finger is not accurate...size tap targets appropriately!

Learned...the hard way (too)!

Test, usability test, retest - don't leave it
to the developer!!

Really plan for how you would demo the
app remotely. It's not easy

Manage the content with discipline. Use
workflow, automate renditions

There are lots of tricks and patience in
play to get your app actually approved
on the (Apple) store - Buffer in extra
time!

Project Lessons Learned

Complete UI design before you begin coding: images, colors, font sizes, active/passive state, etc.

Don't forget mobile app metadata!

PhoneGap is powerful but not flawless; Sign-up for support: submit ticket before sinking lots of developer time

Test PhoneGap compilation thoroughly; understand limitations early

Allow extra time for Apple approval!

VI

About Armedia

Formed in 2002, Headquartered in Atlanta

95 Employees based in Atlanta, Washington DC and Huntsville

Core focus on Enterprise Content Management (ECM) solutions, Mobile Technologies

Vendor agnostic. Rich experience implementing most leading, large scale content technologies

Depth of experience in delivery for US Federal and Commercial Sector

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Questions?