



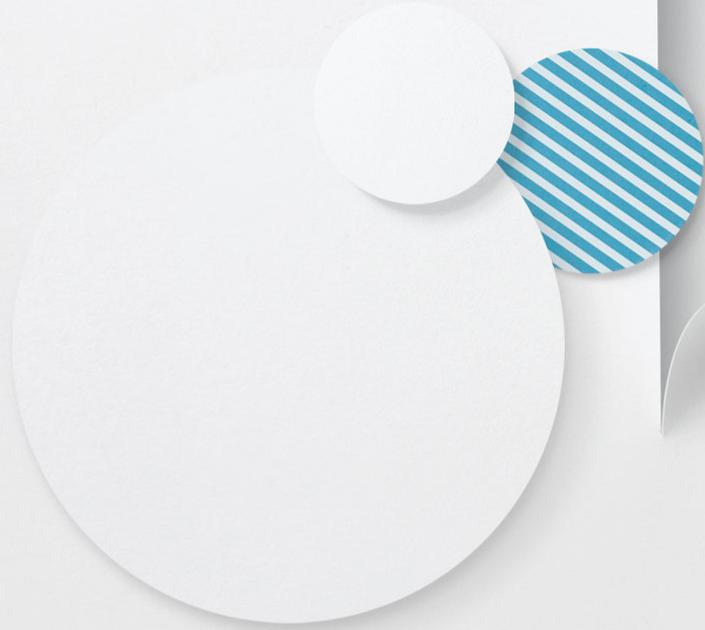
# Porting Existing PhoneGap Apps to Tizen OS

- Development Story

Anil Kumar Yanamandra  
Thomas Mitchell

ProKarma

**TIZEN**<sup>™</sup>  
DEVELOPER  
CONFERENCE  
2013  
SAN FRANCISCO



About ProKarma...

# Who am I?

- **Anil Kumar Yanamandra**
- **Mobile Architect & Head – CoE for Mobility**
- **@ProKarma**
  - Mobile Application Development: B2C, B2B
  - Native (iOS, Android, BlackBerry), Hybrid, Mobile Web apps/sites
  - Custom MDM solutions
  - Mobile Dev Governance: Coding standards, Best practices
  - Mobile Consulting: Native or Hybrid or Web? Requirements driven architecture
  - R & D

# Agenda

- **What is PhoneGap?**
- **Our porting experiment**
- **Changes and issues**
- **Demo**
- **Lessons learnt**

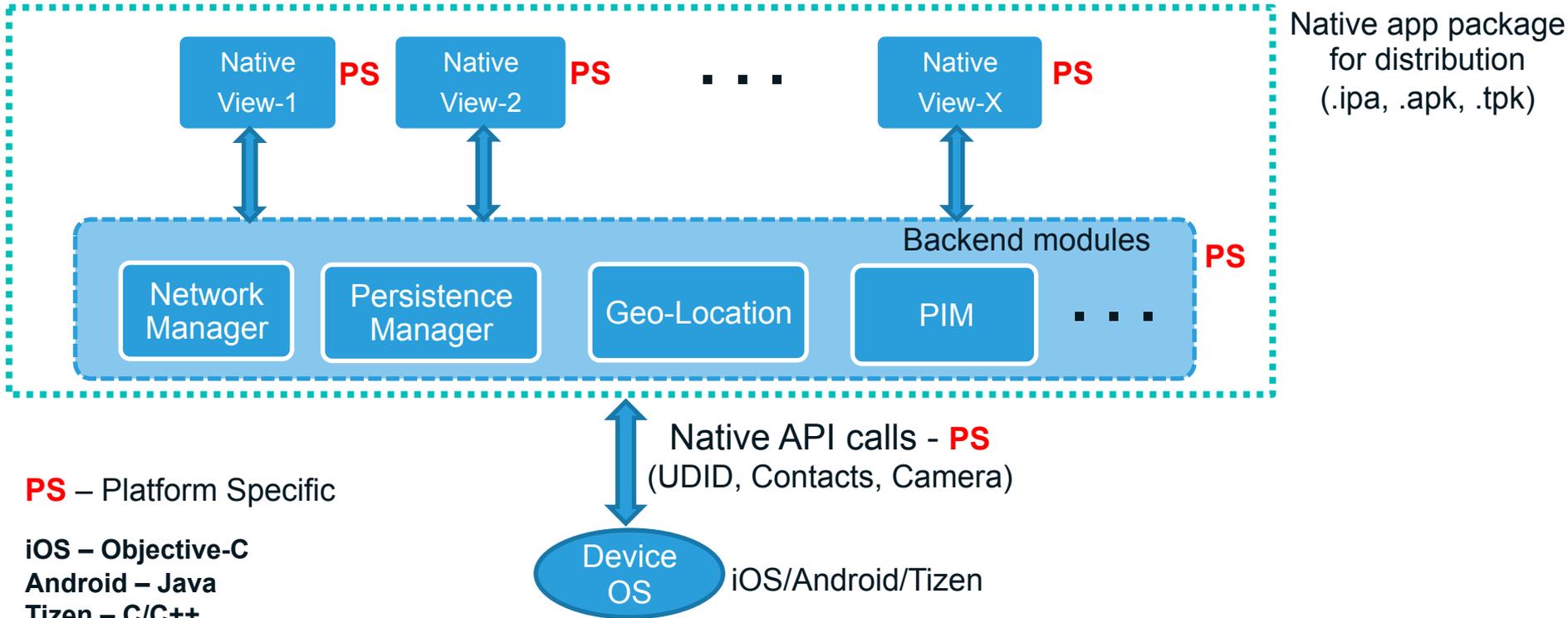


What is PhoneGap BTW?

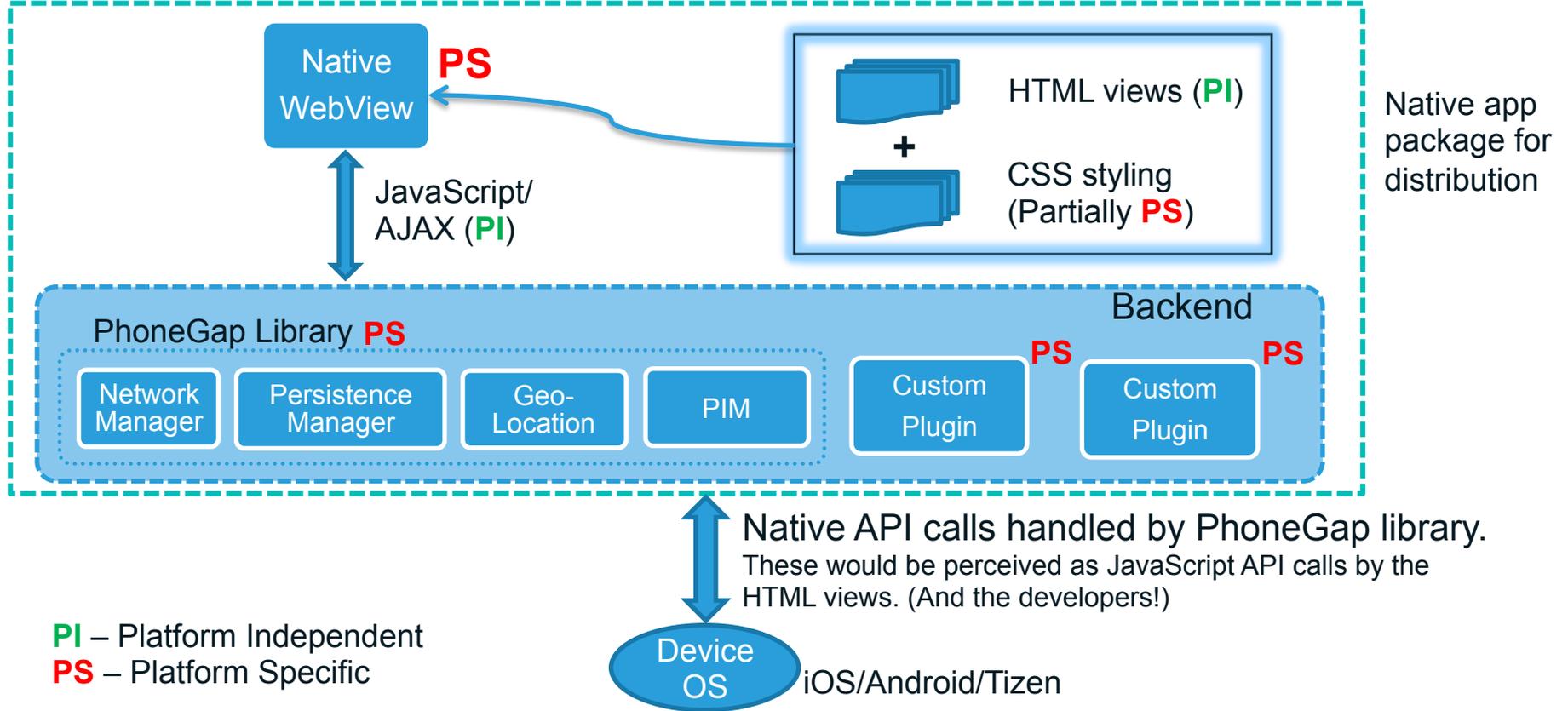
# PhoneGap

- **Open-source**
- **Cross-platform**
- **Web standards based**
- **Mobile App Development Framework**
- **Access native features via Web APIs**
- **Pure backend framework: Works with any web UI framework**
- **Extensible: Add custom features**

# Typical Mobile App Architecture – Native



# Typical Mobile App Architecture – PhoneGap

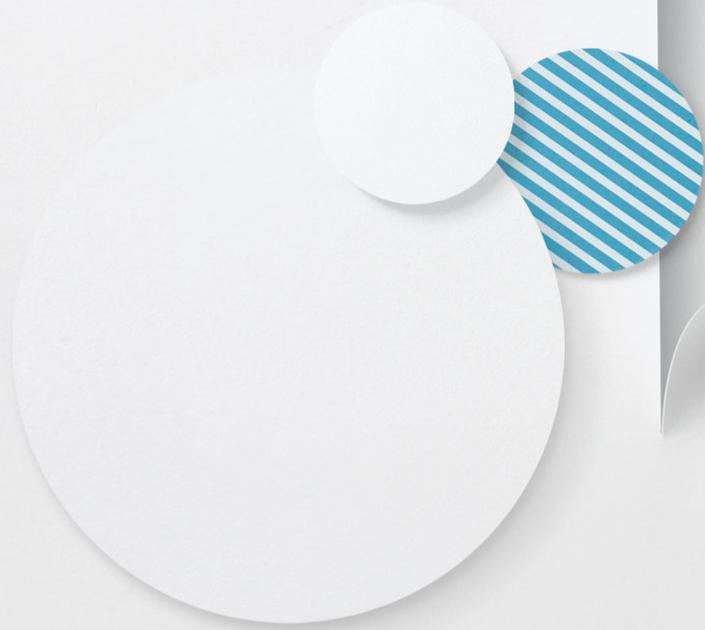


**PI** – Platform Independent  
**PS** – Platform Specific

# Interesting. But why bother when I have Tizen Web API?

- Code Reuse!
- Single codebase across platforms

Platform	Native	PhoneGap
Android	<pre>TelephonyManager mTelephonyMgr = (TelephonyManager) context.getSystemService(     Context.TELEPHONY_SERVICE ); String deviceId = mTelephonyMgr.getDeviceId();</pre>	<pre>var deviceId = device.uuid;</pre>
iOS	<pre>NSString deviceId =     [[UIDevice currentDevice] uniqueIdentifier];</pre>	<pre>var deviceId = device.uuid;</pre>
Tizen	<pre>String deviceId; SystemInfo::GetValue(http://tizen.org/system/duid,     deviceId);</pre>	<pre>var deviceId = device.uuid;</pre>



# Our porting experiment

# Automobile shipment app

- **Use-case: Ship vehicles from the comfort of your mobile device**
- **Features:**
  - ✓ Role based User Registration
  - ✓ Scan VIN barcode to auto input Year, Make, Model
  - ✓ Get Quote
  - ✓ Save Quote
  - ✓ Place an Order
  - ✓ Pay by Credit Card
  - ✓ Track Orders
  - ✓ Map shipment locations
  - ✓ Review orders

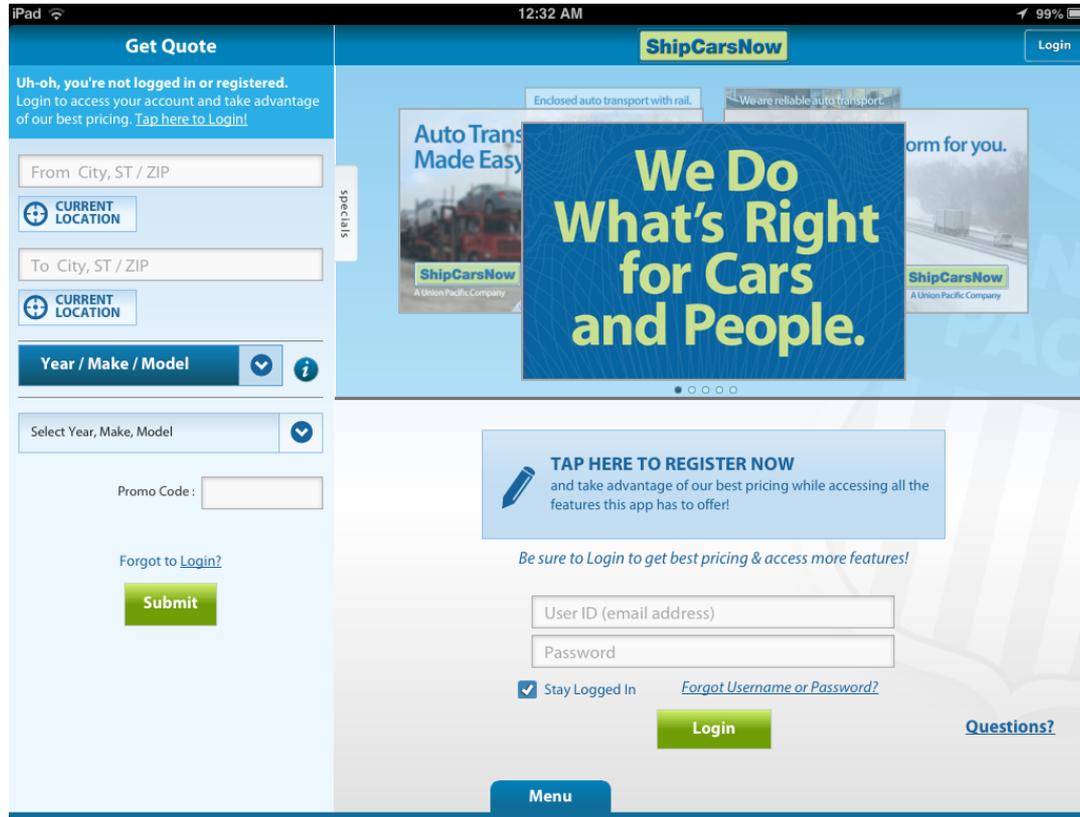
# Tech Details

- **Platform support:**
  - ✓ iOS: iPad and iPhone
  - ✓ Android: Tablet and Smartphone
  - ✓ BlackBerry 10
- **Tech Stack:**
  - Native shell
  - PhoneGap
  - HTML5 stack: HTML/CSS3/JavaScript
  - AJAX
  - Only “Native” feature: VIN scanner

# JavaScript libraries used



# Screencaps: Tablet and Smartphone apps

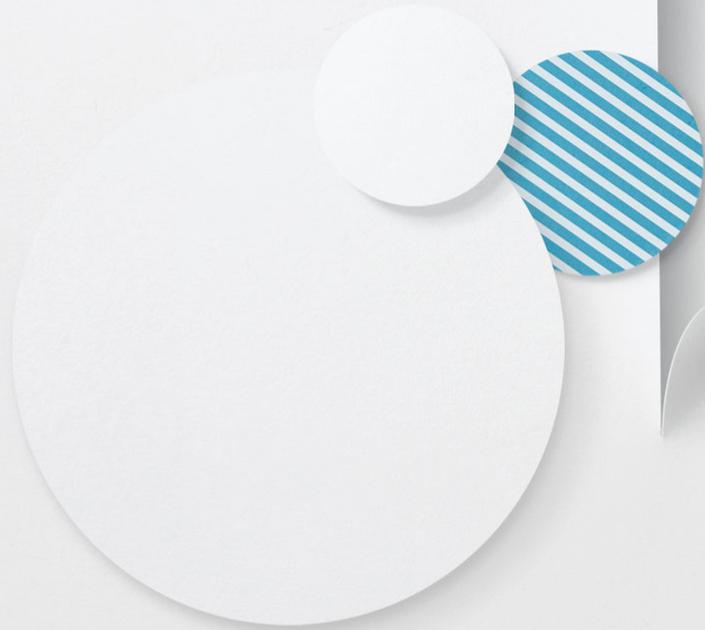


# Porting to Tizen OS: Changes

- **Extract web codebase from the Android/iOS PhoneGap project**
- **Import to new Tizen project**
- **Define config.xml settings**
- **Whitelist all URLs the app would use**
- **Remove the JS hooks to “native” VIN barcode scan plugin**
- **No more!**

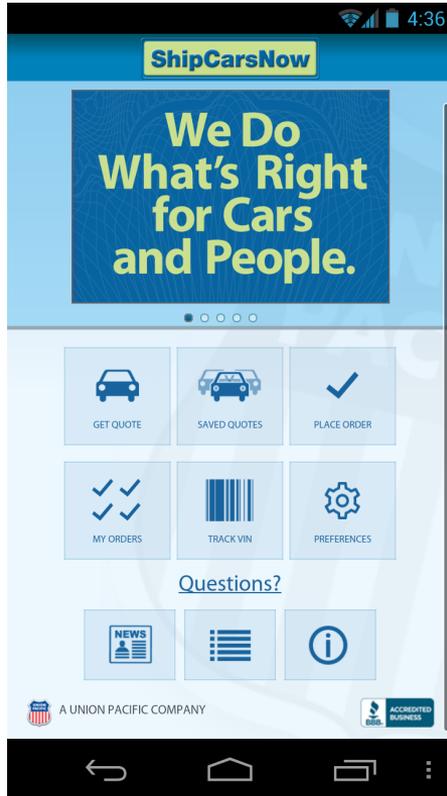
# Debug

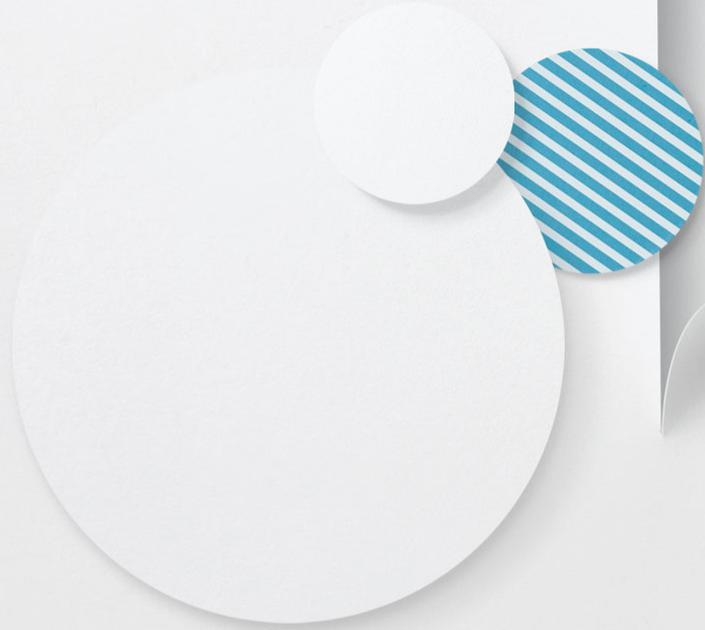
- **What worked?**
  - Almost everything!
  - Responsive UI: media-queries, all the JavaScript libraries
- **What needed “fixes”?**
  - “font-face” CSS code that loads custom font using OTF files did not work
  - “Pull-to-Refresh” feature in iScroll plugin
- **Issues: Tizen dev device RD-210**
  - Performance
  - Load times
  - Refresh rates



**Demo Time!**

# Final result





Lessons learnt

# Summary: Why was this porting successful?

- **Stick to standard web technologies: Avoid Third party frameworks with custom JavaScript translation layers.**
  - Keep up with the latest supported Libs!
- **Employ Responsive Web Design principles:**
  - Build for varying screen sizes
  - Build for varying device capabilities
- **Tizen's outstanding HTML5 compliance makes porting HTML5 based apps easier and economical**



**TIZEN™**

**DEVELOPER  
CONFERENCE**

2013

**SAN FRANCISCO**