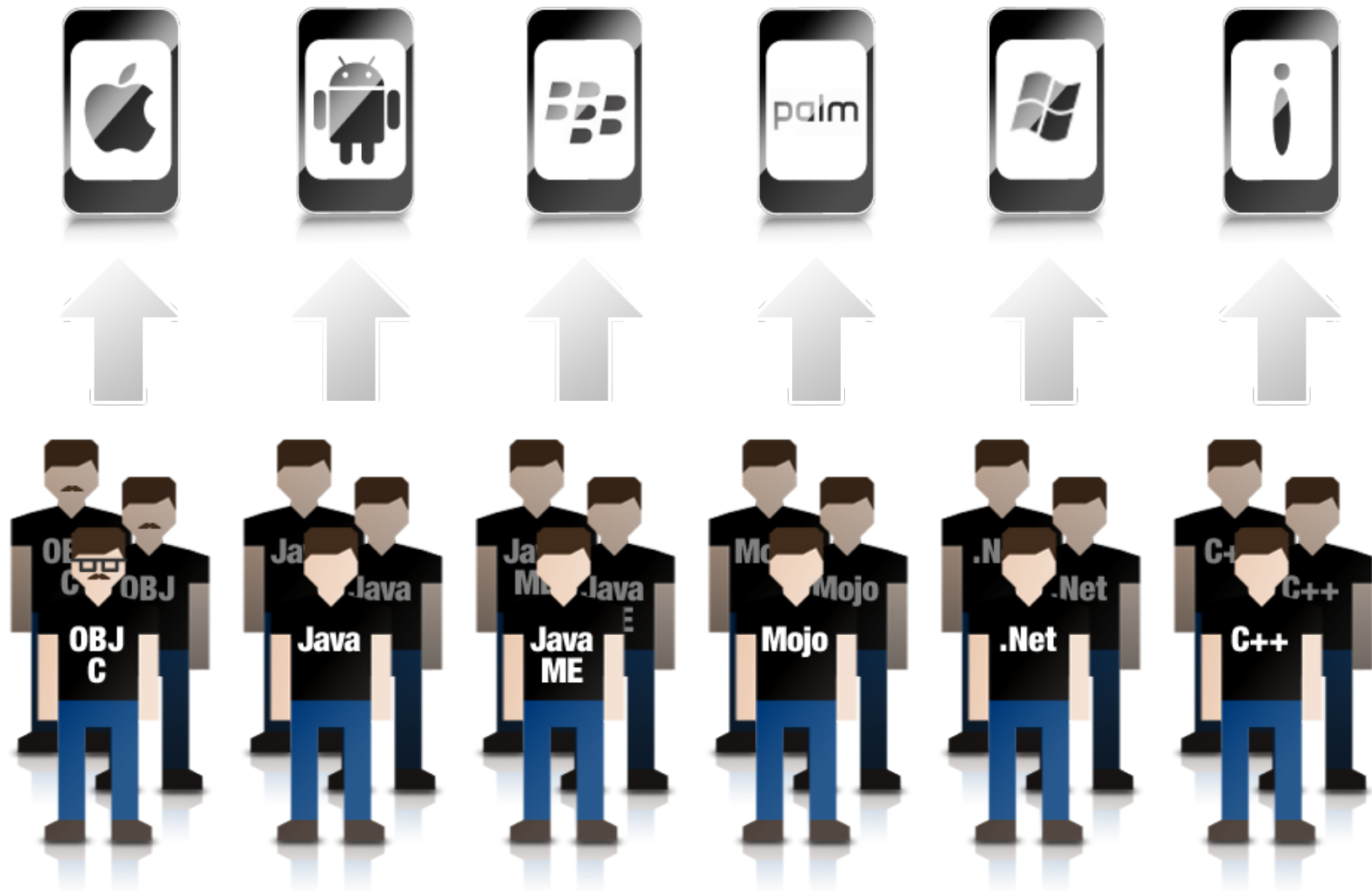


HTML5 and PhoneGap

“We could probably *save 70% of our development budget* by switching to a single, cross-platform client, but we would probably *lose 80% of our users.*”

-- Phil Libin, Evernote CEO





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Build Native Apps with Javascript

Appcelerator Titanium is the first mobile platform to combine the flexibility of open source development technologies with the power of cloud services.

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Build native apps faster with Appcelerator Titanium

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SAY "HELLO" TO SOME OF OUR CUSTOMERS:



AND MORE!

What is PhoneGap?



HTML5



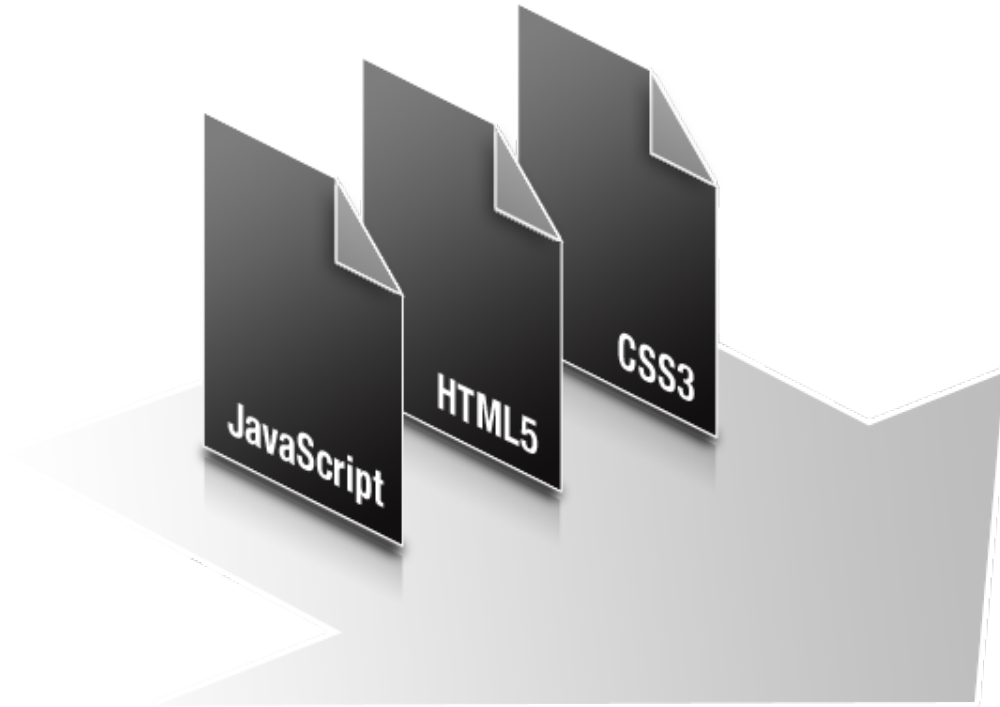
CSS3

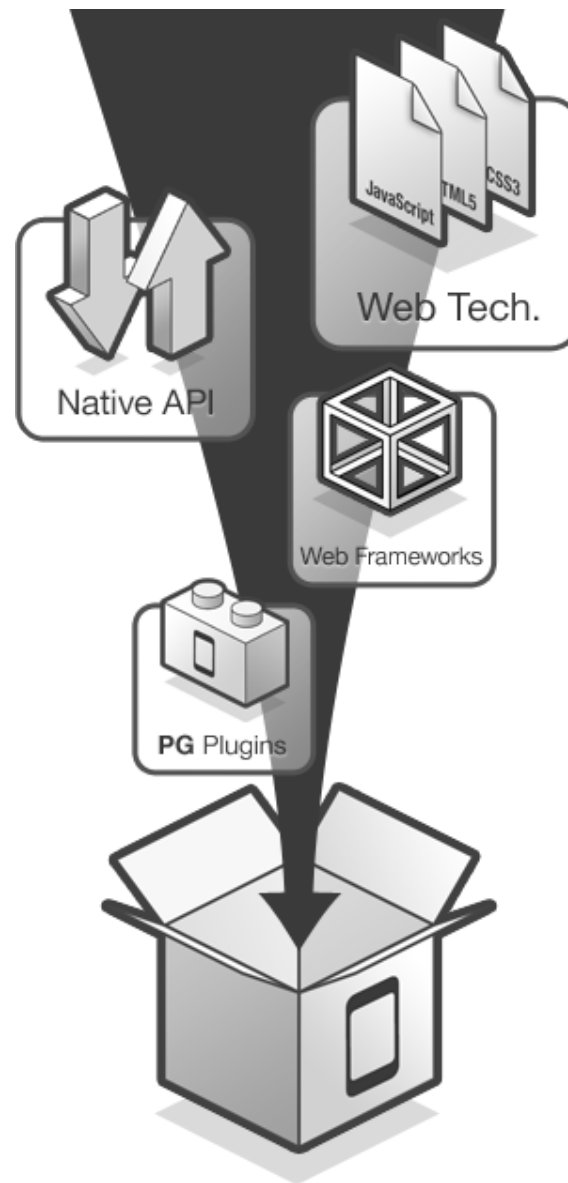


JavaScript

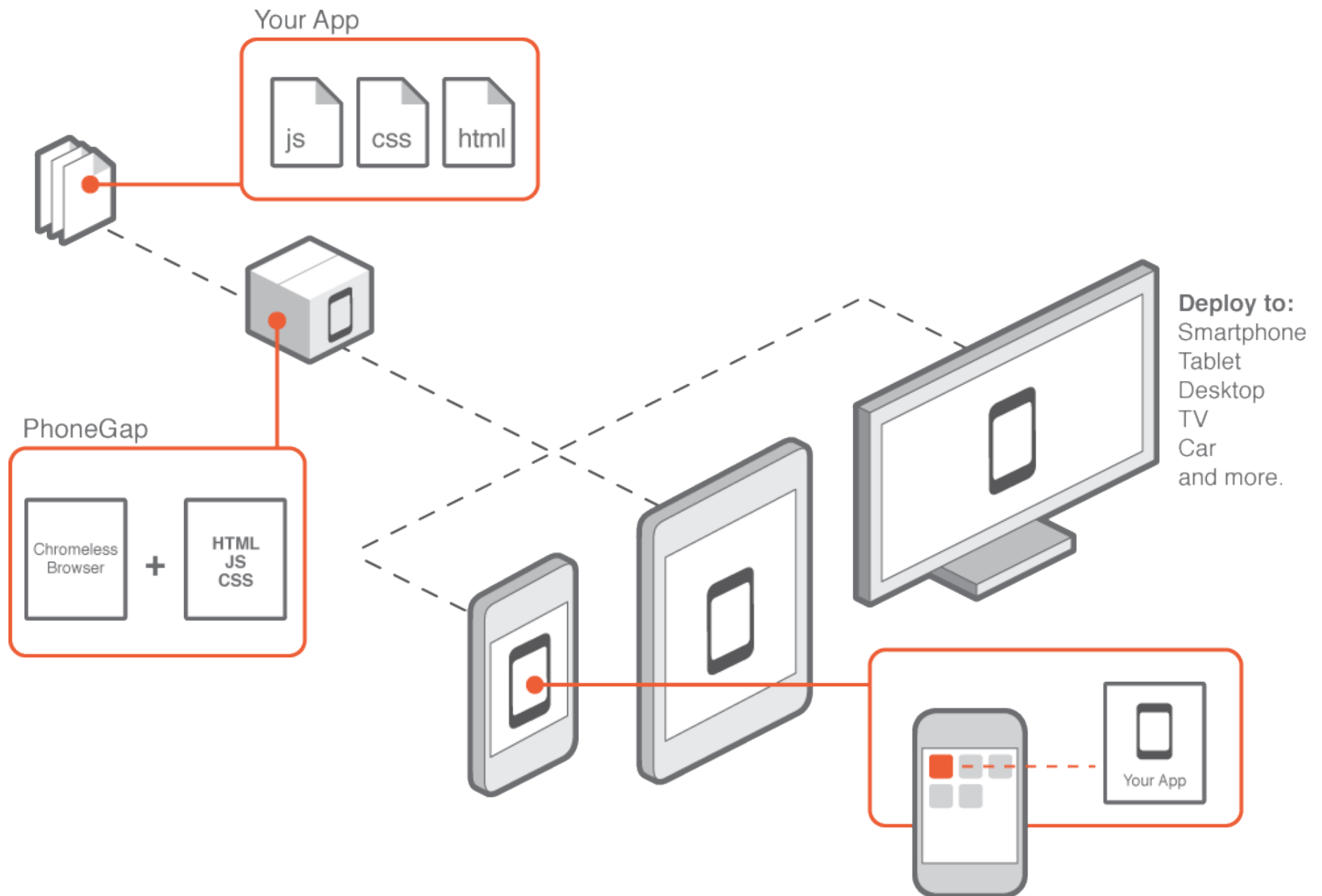
What is PhoneGap?







Your Phone**Gap** App



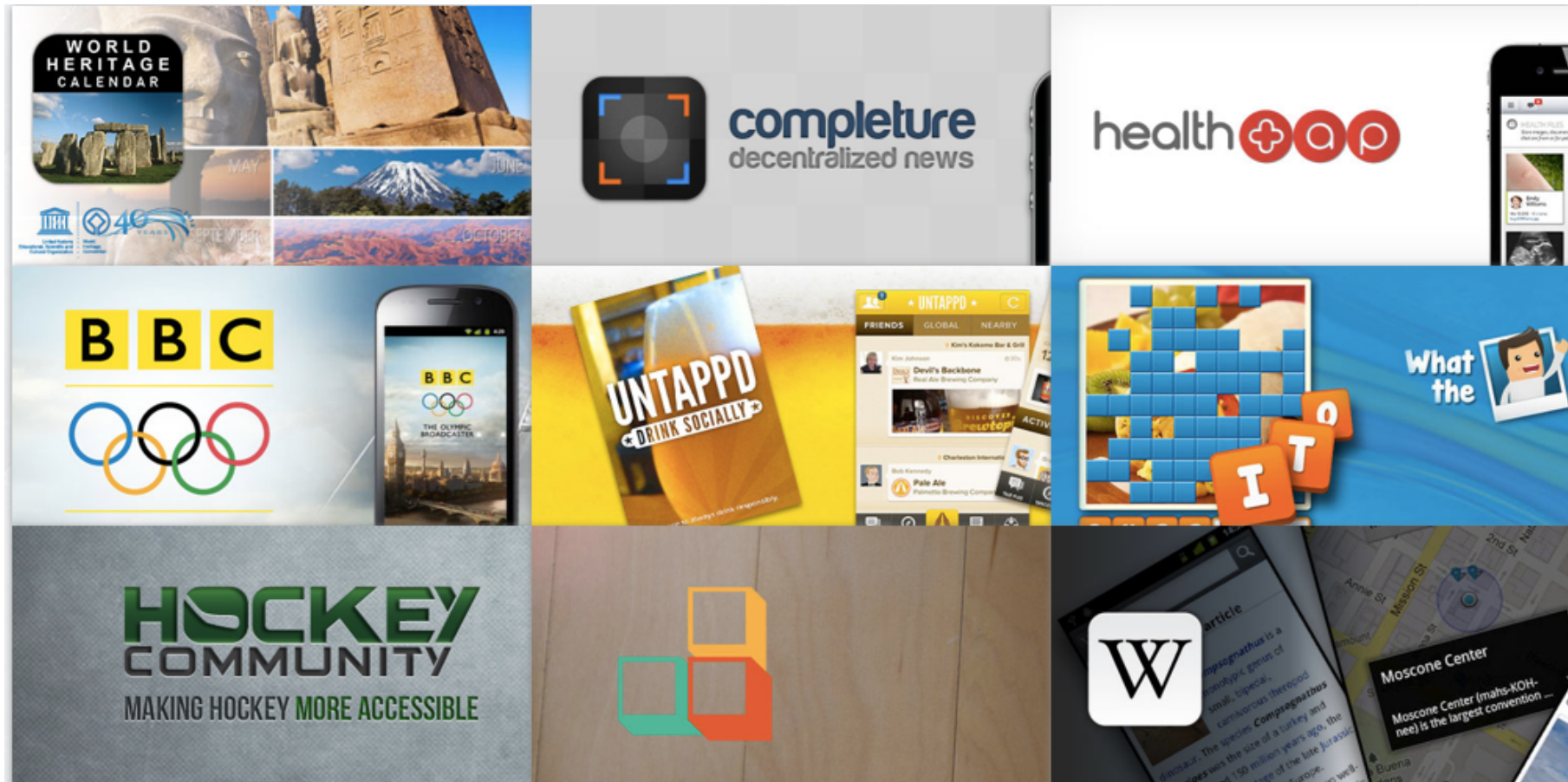
Benefits

- One code base, multiple platforms
- Reuse existing web developer skills
- Shorter learning curve
- Faster development
- Mobile site and app with same code
- Reusable web code and infrastructure
- Code portable to other environments
- Based on open standards
- Active and growing community
- Open source with multiple large stakeholders

Risks

- Web tech not appropriate for everything
- Many webkits
- Many screens/pixel densities
- Not "native"
- Performance
- Security

Apps Created with PhoneGap



Cordova

- Apache Cordova is a set of device APIs that allow a mobile app developer to access native device function such as the camera or accelerometer from JavaScript
- When using the Cordova APIs, an app can be built without any native code
- These APIs are consistent across multiple device platforms and built on web standards, the app should be portable to other device platforms with minimal to no changes
- Apps using Cordova are still packaged as apps using the platform SDKs, and can be made available for installation from each device's app store
- Cordova provides a set of uniform JavaScript libraries that can be invoked, with device-specific native backing code for those JavaScript libraries
- Cordova is available for the following platforms: iOS, Android, Blackberry, Windows Phone, Palm WebOS, Bada, and Symbian



PhoneGap and Cordova

- Late 2011, Adobe/Nitobi donated the PhoneGap codebase to the Apache Software Foundation (ASF) for incubation
- This presented us with the hard requirement to rename PhoneGap in its open source form as a project incubating at Apache
- PhoneGap is a distribution of Apache Cordova
 - We can think of Apache Cordova as the engine that powers PhoneGap, similar to how WebKit is the engine that powers Chrome or Safari

PhoneGap and Cordova

- As a developer building PhoneGap applications, nothing has changed
 - If your goal is to build cross platform apps with HTML, JS and CSS then keep on using PhoneGap for everything you need
- Apache Cordova is the destination for those interested in contributing to the open source project powering PhoneGap

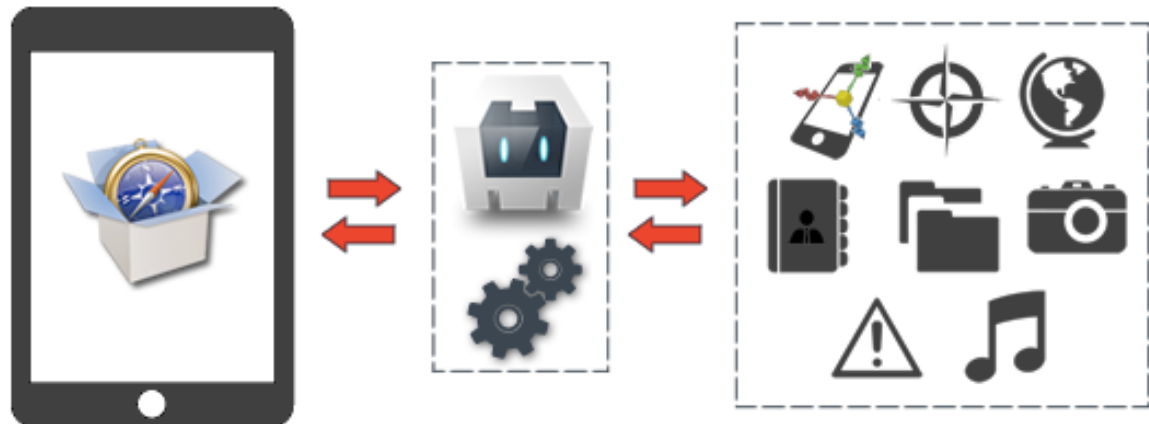
Architecture

- The application server is normally a web server (Apache, IIS, etc...) and has a server side scripting language such as ColdFusion, Java, .NET, PHP, etc.
 - The application server performs business logic and calculations, and generally retrieves or persists data from a separate data
 - PhoneGap is agnostic of back-end technologies and can work with any application server using standard web protocols
- The client to application server communication can be based upon standard HTTP requests for HTML content, REST-ful services, JSON services, or SOAP
- The client-side architecture generally uses the single-page application model, where the application logic is inside a single HTML page
 - Multi-page client-side application architectures are supported, but are not recommended because you lose in-memory variables when loading a separate page



PhoneGap APIs

- Sensors
 - GPS
 - Accelerometer
 - Compass
 - Network
 - Camera
- Data
 - Contacts
 - Media
 - File system
 - Notifications
- Events
 - onload
 - ondeviceready
 - onnativeready
 - onresume
 - onpause



Libraries

- DOM
 - XUI
 - Zepto
 - jQuery
 - Dojo
- Canvas Game
 - PropulsionJS
 - EaselJS
 - GameJS
 - CraftyJS
 - LimeJS
 - jGen
- Style / GUI Libs
 - jQuery Mobile
 - Sencha Touch
- Dojo Mobile
- Jo
- GloveBox
- Ekiben
- Persistence
 - Lawnchair
 - StorageJS
 - PersistJS
- Testing
 - Qunit
 - Jasmine
 - DominatorJS
 - ThumbsJS

Plugins

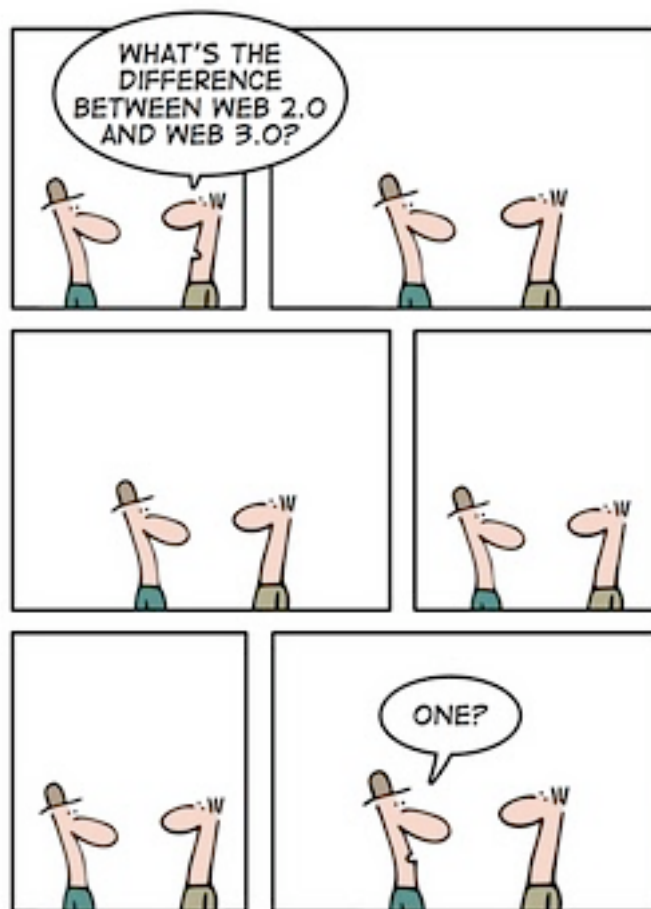
- ChildBrowser
- BarcodeScanner
- Analytics
- Facebook
- Paypal
- More....

Tools

- For iOS Development
 - Xcode
 - iOS SDK
- For Android
 - Android SDK
 - ADT plugin
- For BlackBerry
 - Sun SDK
 - Apache ant
 - BlackBerry WebWorks SDK
- For Symbian
 - SDK
- Emulators
 - Ripple
 - Any platform emulator (iOS Simulator, Android Virtual Devices, etc)
 - ios-sim
- Debugging
 - Weinre (web inspector remote)
- IDEs
 - Eclipse
 - Dreamweaver
 - Textmate

HTML





IT IS THAT EASY



HTML5

- Reduce the need for external plugins (like Flash)
- Better error handling
- More markup to replace scripting
- HTML5 should be device independent
- New Features
 - The <canvas> element for 2D drawing
 - The <video> and <audio> elements for media playback
 - Support for local storage
 - New content-specific elements, like <article>, <footer>, <header>, <nav>, <section>
 - New form controls, like calendar, date, time, email, url, search
 - Web Workers

desktop browsers

tablets

mobiles

gaming

television



first place

406

Opera Mobile 12.10

runner up

390

Chrome

upcoming

485

Tizen 2

current

		Score	Bonus
Opera Mobile 12.10 »	Multiple platforms	406	12
Chrome »	All Android 4 devices	390	11
Firefox Mobile 16 »	Multiple platforms	388	10
iOS 6.0 »	Apple iPhone, iPad and iPod Touch	386	9
Windows Phone 8 »	Nokia Lumia 822, HTC 8X and others	320	6
Android 4.0 »	Samsung Galaxy Nexus	297	3
BlackBerry OS 7 »	BlackBerry Bold 9900 and others	288	3
Bada 2.0 »	Samsung Wave and others	283	9
Nokia Belle FP 2 »	S60 5.5 Nokia 808 PureView and others	272	9
Android 2.3 »	Google Nexus S and others	200	1

High-level structure

```
<!DOCTYPE html>
```

```
<html>
```

```
<head>
```

```
<title>Title of the document</title>
```

```
</head>
```

```
<body>
```

```
The content of the document.....
```

```
</body>
```

```
</html>
```

Body - HTML4

div="header"

div="nav"

div="section"

div="article"

div="sidebar"

div="footer"

Body - HTML5

<header>

<nav>

<section>

<article>

<aside>

<footer>

Tag	Description
<article>	Defines an article
<aside>	Defines content aside from the page content
<bdi>	Isolates a part of text that might be formatted in a different direction from other text outside it
<command>	Defines a command button that a user can invoke
<details>	Defines additional details that the user can view or hide
<summary>	Defines a visible heading for a <details> element
<figure>	Specifies self-contained content, like illustrations, diagrams, photos, code listings, etc.
<figcaption>	Defines a caption for a <figure> element
<footer>	Defines a footer for a document or section
<header>	Defines a header for a document or section
<hgroup>	Groups a set of <h1> to <h6> elements when a heading has multiple levels
<mark>	Defines marked/highlighted text
<meter>	Defines a scalar measurement within a known range (a gauge)
<nav>	Defines navigation links
<progress>	Represents the progress of a task
<ruby>	Defines a ruby annotation (for East Asian typography)
<rt>	Defines an explanation/pronunciation of characters (for East Asian typography)
<rp>	Defines what to show in browsers that do not support ruby annotations
<section>	Defines a section in a document
<time>	Defines a date/time
<wbr>	Defines a possible line-break

Tag	Description
<audio>	Defines sound content
<video>	Defines a video or movie
<source>	Defines multiple media resources for <video> and <audio>
<embed>	Defines a container for an external application or interactive content (a plug-in)
<track>	Defines text tracks for <video> and <audio>

Tag	Description
<canvas>	Used to draw graphics, on the fly, via scripting (usually JavaScript)

Tag	Description
<datalist>	Specifies a list of pre-defined options for input controls
<keygen>	Defines a key-pair generator field (for forms)
<output>	Defines the result of a calculation

Simple example (I)

```
<!DOCTYPE HTML>
```

```
<html>
```

```
<body>
```

```
<video width="320" height="240" controls="controls">
```

```
  <source src="movie.mp4" type="video/mp4">
```

```
  <source src="movie.ogg" type="video/ogg">
```

```
  <source src="movie.webm" type="video/webm">
```

Your browser does not support the video tag.

```
</video>
```

```
</body>
```

```
</html>
```

Simple example (I)

```
<canvas id="myCanvas" width="200" height="100"  
style="border:1px solid #c3c3c3;">
```

Your browser does not support the HTML5 canvas tag.

```
</canvas>
```

```
<script>
```

```
var c=document.getElementById("myCanvas");
```

```
var ctx=c.getContext("2d");
```

```
ctx.fillStyle="#FF0000";
```

```
ctx.fillRect(0,0,150,75);
```

```
</script>
```


SVG and MathML

```
<!doctype html>
<html>
<title>Test document</title>
<body>
  <svg>
    <!-- SVG elements -->
  </svg>
  <math>
    <!-- MathML elements -->
  </math>
</body>
</html>
```

getCurrentPosition()

Property	Description
coords.latitude	The latitude as a decimal number
coords.longitude	The longitude as a decimal number
coords.accuracy	The accuracy of position
coords.altitude	The altitude in meters above the mean sea level
coords.altitudeAccuracy	The altitude accuracy of position
coords.heading	The heading as degrees clockwise from North
coords.speed	The speed in meters per second
timestamp	The date/time of the response

Example

```
<body>
<p id="demo">Click the button to get your coordinates:</p>
<button onclick="getLocation()">Try It</button>
<script>
var x=document.getElementById("demo");
function getLocation()
{
  if (navigator.geolocation)
  {
    navigator.geolocation.getCurrentPosition(showPosition);
  }
  else{x.innerHTML="Geolocation is not supported by this browser.";}
}
function showPosition(position)
{
  x.innerHTML="Latitude: " + position.coords.latitude +
  "<br>Longitude: " + position.coords.longitude;
}
</script>
```