An Introduction to
The Mobile Web Framework

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Overview

1. Approaching the mobile app landscape
2. Leveraging the Mobile Web Framework
3. Building a mobile web application
A mobile presence
is not just a desire, but an expectation.
The Mobile Trend

• Mobile is soon to overtake the desktop.

• Diverse landscape:
  – Devices
  – Operating systems
  – Browsers

• Rapidly changing technology.
The Mobile Trend

- Over 50% of students have a handheld device.
- 74% of students either have or intend to buy an Internet-enabled handheld device in the next year.
- Students are more likely to remember their cell phone than their wallet.
<table>
<thead>
<tr>
<th>Native Applications</th>
<th>Mobile Web</th>
</tr>
</thead>
<tbody>
<tr>
<td>+ 14B app downloads</td>
<td>+ Broad distribution</td>
</tr>
<tr>
<td>+ Rich features and API</td>
<td>+ Established paradigm</td>
</tr>
<tr>
<td>- Device specific</td>
<td>+ Scalable architecture</td>
</tr>
<tr>
<td>- Manual updates</td>
<td>+ Lower maintenance</td>
</tr>
<tr>
<td>- Diverse environments</td>
<td>- Limited API</td>
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<tr>
<td></td>
<td>- New &amp; evolving specs</td>
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</table>
The mobile web is a vibrant and growing landscape.
The Mobile Web Framework is federated, platform-independent and device-agnostic.
Principles

- Device agnostic
- Graceful degradation
- Unified mobile presence
- Technology & platform independent
- Scalable, distributed architecture
- Modern web standards
Device Agnostic

- Least common denominator
  - XHTML MP 1.0: GIF, JPG, 256 colors, 120x120 px

- HTML entities are defined semantically

- Framework determines best presentation

- Progressive enhancement
  - Three tier classification scheme
  - Deeper device awareness
Graceful Degradation

Inside Ackerman Union are restaurants offering everything from burgers to a variety of ethnic foods. Ackerman also houses a ballroom, arcade, candy store, portrait studio, and ATMs.
One Code, Many Devices

- Works on any device with a web browser.
- Markup-driven with semantic entities.
- Progressive enhancement for a rich user experience on more capable devices.
One Framework, Many Environments

- Framework uses browser-side technologies.
- Compatible with any server-side languages, technologies and environments.
- Use your programming language of choice.
Modern Web Standards

• XHTML MP 1.0 and WCSS static markup.
• Dynamic markup from newer standards:
  – HTML 4.01 & 5
  – CSS 2.1 & 3
  – ECMA-262-3
• Availability of new HTML 5 technology features for deep device functionality.
Leveraging the framework in mobile web applications.
Getting Started

• Two handlers drive the framework.
  – http://m.berkeley.edu/assets/js.php
  – http://m.berkeley.edu/assets/css.php

• Additional special scripts for other functions:
  – CSS & JS Minification
  – Image Compression and Conversion
  – Mobile Redirection
Getting Started

• Include the core handlers in the `<head>`

  `<link rel="stylesheet"
       href="http://m.berkeley.edu/assets/css.php">`

  `<script type="text/javascript"
       src="http://m.berkeley.edu/assets/js.php">`
  `</script>`

• Some other scripts are included in `<head>`.

• Others are included inline such as in `<img>`.
Style Entities

• Page elements
  – Header
  – Footer

• Content elements
  – Content Areas
  – Menus
  – Forms
  – Buttons
Interactivity Libraries

- Transitions
- Touch Transitions
- Geolocation
Standalone Scripts

• CSS and JS Minifiers
  – Reduce payload size.
  – Consolidate CSS and JS into one file each.
  – Target assets at a single classification level.
Standalone Scripts

• Image Compression and Conversion
  – Optimize images based on device size.
  – Convert to a device-supported format.

• Mobile Redirection
  – Continuity with device parsing.
  – Remember redirection preference.
Moving forward into a richer mobile experience.
The Current Version of MWF

- Classification and capability management.
- Base set of CSS user interface elements.
- Base set of JS utility functions under mwf.
- Several CSS 3 / JS interactivity libraries.
- Compression, conversion and minification.
- Other utilities libraries and functionality.
The Next Version of MWF

• Alpha release tagged on Github.
• Production release intended for July 2011.

• Content provider improvements include:
  – Device telemetry passed into CSS.
  – Integration with Javascript UI libraries.
  – Classification changes:
    • “webkit” to “full”
    • “touch” to “standard”
The Roadmap for MWF

• Availability of new APIs and functionality.
  – Page performance and transitions
  – Improved user interfaces
  – Rich interaction

• No backwards compatibility issues.
  – All existing interfaces are maintained.
  – Semantics remain constant.
  – Early access to HTML 5 technologies.
Suggestions
for the mobile web.
Understand your Audience

• Desktop browsing is characterized by
  – page hops
  – searches
  – large blocks

• The mobile experience is characterized as
  – an integrated experience
  – short and directed content
  – rich interaction and movement
A New Approach to Content

- Don’t create a mini version of a desktop site.
- Reconsider movement around the site.
- Keep focus on the current task.
- Consider the context:
  - Small screen
  - Touch interface
  - Mobility
Keep It Simple

• Design markup with compatibility in mind.
  – XHTML MP 1.0
  – WCSS
• Keep the user focused
• Keep the experience directed.
• Do not clutter the screen.
Q&A
for anything unanswered?
Thank you
for listening.