The mobile browser world

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http://quirksmode.org
http://twitter.com/ppk
Front-end Day workshop, 26 April 2011
Mobile First!

• Luke Wroblewski invented it

• Design your sites for mobile first.

• You’ll be forced to decide what is so important that it MUST be shown in the mobile device’s tiny display.

• The things you leave out of the mobile version don’t really need to be in the desktop version, either.
The mobile browsers

- Safari iPhone
- Android WebKit
- Dolfin for bada
- BlackBerry WebKit
- Opera Mobile
- Opera Mini
- MicroB
- Nokia WebKit
- Firefox
- Obigo WebKit
- Ovi
- Palm WebKit
- BlackBerry old
- Phantom
- Obigo old
- NetFront
- IE
- UCWeb

You may groan now.
The mobile browsers

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Gecko-based

- Obigo WebKit
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The mobile browsers

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The mobile browsers

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- Opera Mini
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Other rendering engines

- Obigo WebKit
- Ovi
- Palm WebKit
- BlackBerry old
- Phantom
- Obigo old
- NetFront
- IE
- UCWeb
The mobile browsers

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WebKit-based

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WebKit on Mobile

There is no WebKit on mobile!

There's iPhone Safari (3 and 4),
and Android (2.1 and 2.3 and 3.0),
and Nokia WebKit (S40 and Symbian),
and BlackBerry WebKit,
and Dolfin for bada,
and Palm, and Obigo, and a few more

These WebKits are all different.
Not wildly so, but you’ll notice some oddities.
Exhibit A: WebKit comparison table

http://quirksmode.org/webkit.html

<table>
<thead>
<tr>
<th>S60v3</th>
<th>S60v5</th>
<th>iPhone 2.2</th>
<th>iPhone 3.1</th>
<th>Android 1.0</th>
<th>Android 1.5/1.6</th>
<th>Bolt 1.5</th>
<th>Iris 1.1.9</th>
<th>Ozone 0.9</th>
<th>Palm Pre 1.2.1</th>
</tr>
</thead>
<tbody>
<tr>
<td>buggy</td>
<td>no</td>
<td>static</td>
<td>yes</td>
<td>yes</td>
<td>static</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

When the original element when another element is placed after it:

<table>
<thead>
<tr>
<th>yes</th>
<th>incorrect</th>
<th>incomplete</th>
<th>incorrect</th>
<th>incorrect</th>
<th>incomplete</th>
<th>yes</th>
<th>incorrect</th>
</tr>
</thead>
</table>

It behaves as if it has absolute while scrolling. After scrolling has finished it’s placed at the

<table>
<thead>
<tr>
<th>no</th>
<th>static</th>
<th>to be tested</th>
<th>yes</th>
<th>static</th>
<th>yes</th>
<th>yes</th>
<th>yes</th>
</tr>
</thead>
</table>


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The mobile browsers

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- BlackBerry WebKit
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Proxy browsers

- Obigo WebKit
- Ovi
- Palm WebKit
- BlackBerry old
- Phantom
- Obigo old
- NetFront
- IE
- UCWeb
Proxy browsers

- Page is downloaded to and rendered on a specialised server.
- A highly compressed image is sent to the client.
- Advantage: cheap, both in device and in network costs
- Disadvantage: no client-side interactivity
# Global stats Q1 2011

(by StatCounter)

<table>
<thead>
<tr>
<th>Browser/Series</th>
<th>Market Share</th>
<th>Device</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safari</td>
<td>25%</td>
<td>iOS</td>
<td>Stable</td>
</tr>
<tr>
<td>Opera</td>
<td>21%</td>
<td>Many OSs</td>
<td>Stable</td>
</tr>
<tr>
<td>Nokia</td>
<td>16%</td>
<td>Symbian (and S40)</td>
<td>Stable</td>
</tr>
<tr>
<td>Android</td>
<td>15%</td>
<td>Android</td>
<td>Up</td>
</tr>
<tr>
<td>BlackBerry</td>
<td>14%</td>
<td>BlackBerry</td>
<td>Down</td>
</tr>
<tr>
<td>NetFront</td>
<td>4%</td>
<td>Sony Ericsson and Samsung</td>
<td>Stable</td>
</tr>
<tr>
<td>Samsung</td>
<td>2%</td>
<td>bada</td>
<td>Up</td>
</tr>
<tr>
<td>Others</td>
<td>3%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Browser stats

• Those are GLOBAL stats; they are not necessarily correct for the sites you’re working on. Always check your stats.

• Social media referrals cause disproportionate iPhone visits; and Android to a lesser degree.
<table>
<thead>
<tr>
<th>Brand</th>
<th>Market Share</th>
<th>Operating System</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nokia</td>
<td>34%</td>
<td>Symbian (and S40)</td>
<td>Stable</td>
</tr>
<tr>
<td>Android</td>
<td>20%</td>
<td>Android</td>
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<tr>
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<td>18%</td>
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<tr>
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<td>2%</td>
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<td></td>
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<td>bada</td>
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</tr>
<tr>
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<td></td>
<td></td>
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</table>
Stats
(global, Q4 2010)

- Safari: 25%
- Android: 15%

Rest? What rest?
Which mobile browsers?

- Safari iPhone
- Opera Mini
- Android WebKit
- US: BlackBerry (WebKit and older)
- Europe: Nokia WebKit
- Dolfin for bada (easy)
- Opera Mobile (easy)
Progressive enhancement

How do you deal with this immense amount of browsers?

Use advanced tricks, but make sure your site remains usable without them.

The site is enhanced as much as the browser allows.
Progressive enhancement

All browsers support HTML. That’s the definition of a browser.
Progressive enhancement

Basic CSS

HTML

All browsers support most basic CSS. There will be bugs, but only few.
Progressive enhancement

Advanced CSS

Basic CSS

HTML

Advanced CSS is restricted to advanced browsers. Make sure it contains nothing vital; just nice extras.
Progressive enhancement

- Advanced CSS
- Basic CSS
- Basic JavaScript
- HTML

All browsers support basic JavaScript, but they can be slow. Maybe switch off in BB5 and lower.
Advanced JavaScript is a problem. Feature detection is your friend. Make sure it contains nothing vital.
Get real phones

• You need to hold and handle a phone
• Unlocked! You want to test on several networks
• At least one non-touchscreen phone
• But you likely can’t afford to buy ten phones
Other solutions

• Find other companies with the same problem and share phones
• Go to the phone shop and test there
• Use online tools:
  • http://deviceanywhere.com
  • http://perfectomobile.com
• Or use emulators
• Not my favourite
• Usually inside SDK
Performance

How long does it take to generate 250 lists with 20 items each?

The following graphs give the number of seconds it took the browsers.

http://quirksmode.org/m/tests/DOMspeed.html
Performance

- Nokia N8: 3.6
- Nokia E71: 5.4
- iPhone 3.2 (3G): 11.1
- Opera 9.6 WinMob: 12.3
- NetFront: 97.3
Performance

<table>
<thead>
<tr>
<th>Device</th>
<th>Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Android 2.3</td>
<td>0.9</td>
</tr>
<tr>
<td>Firefox 4</td>
<td>1.9</td>
</tr>
<tr>
<td>Dolfin</td>
<td>2.1</td>
</tr>
<tr>
<td>iPhone 4</td>
<td>2.4</td>
</tr>
<tr>
<td>Op 10</td>
<td>3.2</td>
</tr>
<tr>
<td>BlackBerry WK</td>
<td>3.4</td>
</tr>
<tr>
<td>Nokia N8</td>
<td>3.6</td>
</tr>
</tbody>
</table>
HTML5

• Which browsers support HTML5?
• What is HTML5, anyway?
• Ask five web developers and they’ll give you five different answers.
HTML5

- Offline storage
- Video and audio
- Canvas
- New input types
- Websockets
- New semantics
- SVG
- File API
- etc. etc. etc.
Offline storage

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HTML5

• Which browsers support HTML5?

• It depends.

• HTML5 is mainly a marketing buzzword.

• That’s not bad; we need it.

• But it has no technical meaning.
JavaScript events

Fun party game

- online and offline
- orientationchange
- shake
- cameraopen
- compasspointnorth
- devicemove (GPS?)
- phonecall
- textreceived
Thank you
I will post these slides online.
Questions?

Peter-Paul Koch
http://quirksmode.org
http://twitter.com/ppk
Front-end Day workshop, 26 April 2011