Developing and Delivering Content for Mobile Web

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This Talk has….

1. Mobile Web: Opportunities and Challenges
2. Technical Solutions
3. Hands-on Session
4. Good Design Benefits All!
PART I: Mobile Web: Opportunities and Challenges
Surf...Surf...Surf...Surf

Super surfers oust couch potatoes!!!
Where is the Web?

• In your hand…
• In your office…
• In your living room…
• In your bathroom…
• In your car…
• Everywhere….
So Web is mobile …one Web…

• Flight, fridge, TV, mobile, PC, etc…
• One Web: Providing the same information and services to users, regardless of the operators and device they are using.
September 2008:
• Users: 19 million
• Pages: 4.5 billion
• Data: 65.2 million MB of data

Top 10 countries:
1. Russia
2. Indonesia
3. India
4. China
5. Ukraine
6. United States
7. South Africa
8. United Kingdom
9. Poland
10. Egypt

Is the Web Really Mobile?

- Small Screen
- Limited CPU
- Limited Battery
- No mouse
- Small keypad
- Cost!!
- Limited memory
Is the Web Really Mobile?
Challenges....

- Useful content
  - Context, why, how...
- Usable content
  - Screen size, key pad, speed, consistency...
- Reasonable pricing and revenue models
- Ubiquitous interoperability
- Security, identity, privacy, trust...
PART 2:
Technical Solutions
What can we do?

1. Do nothing except follow web standards.
2. Create a completely separate mobile site.
3. Create one site, but add code to optimize it depending on the device and browser looking at it.
Option 1: Do nothing!

• Follow the standards
  – Good chance that your page will be able to interpret your site and render in an accessible manner.

• Good design solutions are always good:
  – Logical order in the source code.
  – Linear presentation.
  – Good Form elements design (e.g., include label).
  – Don’t rely to much on Javascript, images, etc.
Option 2: Separate Mobile Site

- Maintain multiple versions of the site, e.g., mobile, Desktop, etc
- Serve as:
  - http://www.xxx.co.uk/mobile
  - http://www.xxx.mobi
  - http://mobile.xxx.co.uk
  - http://mobi.xxx.co.uk
Option 3: One Site for All

- **Server side solution:** You can again rely on server-side capability detection, but optimize a single site for the mobile device, rather than redirect to a separate site.

- **Client side solution:** Different CSS files for different media types.
# Comparing Options

<table>
<thead>
<tr>
<th></th>
<th>Do nothing!</th>
<th>Separate site!</th>
<th>One Site for All!</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost for user</td>
<td>High</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>Cost for designer</td>
<td>Low</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Useful content</td>
<td>✗</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Usable content</td>
<td>✗</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Context aware</td>
<td>✗</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>User experience</td>
<td>✗</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>
Best Option!

• Think about…
  – Context
  – Content
  – Cost

• Choose the one that is the best for you and your users!!!

• If you have well formed, basic XHTML, and if you have followed best practices then your content should be fine on most modern browsers.
PART 3:
Hands on Session
Mobile Web Best Practices

• Make Web access on all devices seamless, reliable, cost-effective.

• Mobile Web Best Practices 1.0 became a W3C Recommendation on 29 July 2008.
About the World Wide Web Consortium (W3C)

“Lead the World Wide Web to its full potential by developing protocols and guidelines that ensure long-term growth for the Web.”
Mobile Web Best Practices

- Set of **10 principles and 60 best practices** to keep in mind when creating mobile content.
- Summarized in handy flipcards!
- Audience: creators of Web Sites (developers, interaction and graphic designers)
Content designed with diverse devices in mind reduces cost, increases flexibility, and reaches the needs of more people.
“[TESTING] Carry out testing on actual devices as well as on emulators.”

**MobileOK Test**
- ready.mobi: http://ready.mobi
- W3C mobileOK Basic checker: http://validator.w3.org/mobile

**Emulators**
- .mobi emulator (http://mtld.mobi/emulator.php)
- mobiforge (http://mobiforge.com/page/mobile-emulators)
- iPhone tester (http://iphoneterester.com/)
- Opera Mini simulator (http://www.operamini.com/demo/)
(2) Rely on Web Standards

In the highly fragment market of devices and browsers standards are the best guarantee for interoperability.
(2) Rely on Web Standards

[VALID_MARKUP] Create documents that validate to published formal grammars.

• If the page markup is invalid this will result in unpredictable and possibly incomplete presentation.
• HTML Validator:
  – http://validator.w3.org/
• CSS Validator:
  – http://jigsaw.w3.org/css-validator/

![Markup Validation Service](image)
(3) Stay Away from Known Hazards

Thoughtful design can help reduce usability problems due to small screens and keyboards, and other features of mobile devices.
(3) Stay Away from Known Hazards

[TABLES LAYOUT] Do not use tables for layout.
(4) Be cautious of device limitations

When choosing to use a particular Web technology, consider that mobile devices vary greatly in capability.
(4) Be cautious of device limitations

“[COOKIES] Do not rely on cookies being available”

• Cookie support varies across devices and carriers.
• Determine if other techniques could be used to support cookies: http://tinyurl.com/5hba7r
(5) Optimize navigation

Simple navigation and typing become critical when using a small screen and keyboard, and limited bandwidth.
(5) Optimize navigation

“[BALANCE] Take into account the trade-off between having too many links on a page and asking the user to follow too many links to reach what they are looking for.”
Images, colors, and style brighten content, but require care: device may have low-contrast screen or may not support some formats.
(6) Checks graphics & colors

“[BACKGROUND IMAGE READABILITY] When using background images make sure that content remains readable on the device.”
(7) Keep it small

Smaller sites make users happier by costing less in time and money.
(7) Keep it small

“[PAGE SIZE LIMIT] Ensure that the overall size of page is appropriate to the memory limitations of the device.
(8) Use the network sparingly

Web protocol features can help improve the user experience by reducing the impact of network bottlenecks and latencies.
(8) Use the network sparingly

“[AUTO REFRESH] Do not create periodically auto-refreshing pages, unless you have informed the user and provided a means of stopping it.

• In a mobile environment they may expose the user to undue cost as a result of such a page being left open or put unnoticed into the background.
Keyboards and other input methods on mobile devices can be tedious to use, so effective designs minimize the need for them.
(9) Help & guide user input

“[AVOID FREE TEXT] Avoid free text entry where possible. As far as possible minimize user input. Where possible, use selection lists, radio buttons and other controls that do not require typing.

![Mobile device interface](image.png)
(10) Think of users on the go

Web users on the go want compact information when time is short and distractions many.
(10) Think of users on the go

"[SUITABLE] Ensure that content is suitable for use in a mobile context.

http://m.flickr.com/

flickr

1 Recent activity
2 Photos and Videos from contacts
3 Comments you've made
4 Upload a photo or video
5 Your photostream
6 Recent Uploads
7 Explore recent uploads
8 Your contacts

Search for photos:

[Submit] [text] [tags]

Logout
PART 4:
Good Design Benefits All
Best Practice Benefits All!

- Situationally-induced impairments!
- People with disabilities using computers have similar interaction limitations as people without disabilities who are using mobile devices.
- Both experience similar barriers when interacting with Web sites.
- There is also significant overlap between the design solutions for both.
## Common User Experiences

<table>
<thead>
<tr>
<th>Content</th>
<th>Disability Context</th>
<th>Mobile Context</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information conveyed using color</td>
<td>Color-blind or visually disabled people</td>
<td>Poor lighting (sunny day), limited device</td>
</tr>
<tr>
<td>Audio only prompts (e.g., errors, warnings)</td>
<td>Deaf or hard of hearing</td>
<td>Noisy and public places</td>
</tr>
<tr>
<td>Free text entry, long text</td>
<td>Motor disability</td>
<td>Limited keyboard and mouse</td>
</tr>
</tbody>
</table>

http://www.w3.org/WAI/mobile/experiences
Conclusions

• Good user experience is important.
• Think about content, context and cost.
• Best Practices and standards in a fragmented world is important.
• Keep your Mobile Web Best Practices flipcards at hand.
• Remember good design benefits all.
• Make use of tools available to check mobile friendliness.
Acknowledgement

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• Thanks to HCW Lab!

• http://hcw.cs.manchester.ac.uk/
Resources

- W3C Mobile Web Initiative: http://www.w3.org/Mobile/
- Mobile Web Best Practices: http://www.w3.org/TR/mobile-bp/
- .mobi Development: http://dev.mobi & see .mobi Mobile Web Developers Guide
- Mobile Design: www.mobiledesign.org
- Opera Development: http://dev.opera.com/articles/mobile/
- Little Springs Mobile Patterns: http://patterns.littlespringsdesign.com
- Mobile User Experience: http://www.mobileuserexperience.com/
- Mobile Monday: http://www.mobilemonday.net/
- Cameron Moll: http://www.cameronmoll.com
- BBC News on Internet Usage: http://news.bbc.co.uk/1/hi/business/4784518.stm