Embracing Device Diversity

Mobile Aware
Founding Member of W3C MWI
For the W3C MWI, what is a mobile device?

- It is a Web-enabled device that was designed to be used while the user is mobile.
- It uses at least one established Web markup, including traditional HTML, the newer XHTML and the mobile derivatives such as XHTML-MP, XHTML- Basic, cHTML etc.

Web-enabled
- HTTP via network

Browser
- XHTML-MP, cHTML etc
From the DDWG charter:
The mission of the MWI Device Description Working Group (DDWG) is to enable the development of globally accessible, sustainable data and services that provide device description information applicable to content adaptation.
Device Diversity

- **Screen**
  - Dimensions
  - Colour

- **Mode of input**
  - Stylus
  - Multi-function keypad
  - Rocker switches

- **Environment**
  - Memory
  - Bandwidth
  - Rendering speed

- **Markup**
  - Image formats
  - Table / List limits
  - Styles

<table>
<thead>
<tr>
<th>Memory</th>
<th>Bandwidth</th>
<th>Rendering speed</th>
</tr>
</thead>
<tbody>
<tr>
<td>16Mb</td>
<td>236kbps</td>
<td>171kbps</td>
</tr>
<tr>
<td>22Mb</td>
<td>473kbps</td>
<td></td>
</tr>
<tr>
<td>48Mb</td>
<td>473kbps</td>
<td></td>
</tr>
</tbody>
</table>

Image formats:
- JPEG
- PNG
- GIF
- WBMP

Colours:
- Red
- Green
- Blue
Adaptation

- **Minimal: functional presentations**
  - The very least you can do is ensure the page **works** on a mobile
  - The MWI Best Practices may help here

- **Choose best options**
  - If you can, choose the best options for your content consumers
  - Best option: adapt on a “per-request” basis

- **Generate presentations**
  - Transcoding
  - Selection
  - Serialisation

![Adaptation Diagram](diagram)
Need for Descriptions

- A “device description” is part of the Delivery Context
  - Context = anything that might influence your content

- Identify target device
  - Example: User Agent header
  - Example: UAProf or CC/PP identifier
  - Ask: “What is this device?”

- Determine transcoding target
  - Example: Should image be GIF or PNG?
  - Example: Generate XHTML or XHTML-MP?
  - Ask: “What does it want?”

- Guide selection amongst alternatives
  - Example: Use drop-down or checkboxes?
  - Example: Use tables or lists?
  - Ask: “What is best?”
How Many Descriptions?

- How many device descriptions are needed?

- DDWG asked specialist opinions
  - Specialists include mobile operators, manufacturers, adaptation specialists

- Companies had 100s of properties
  - Screen, Markup, Formats, Memory, Speed, Bugs, Layouts, etc., etc., etc.

- Dealing with 1000s of devices
  - And typically adding 10s of new devices every week

- Use data for perfect presentations
  - These companies provide high quality (adapted) mobile content

- Professional solutions
  - Most offer commercial quality products

- Mobile Web beyond reach of ordinary authors?
  - Does this mean that non-commercial (e.g. home) authors are excluded from the Mobile Web because they cannot access professional adaptation?
Simple Adaptation

- DDWG research discovery!
  - For **basic** adaptation, you don’t need a lot of context data

- To enable adaptation you need less than 20 properties
  - Compared to the 100s of data on every device maintained by the professional solutions (e.g. MobileAware), a figure of 20 is probably achievable for ordinary people

- This data is available but...
  - Located in different places (e.g. on manufacturer websites)
  - In different formats (some in XML, some in UAProf, some in Text)
  - Varying degrees of quality (some tested, some just guessed)
  - Not available in real-time
    - Have to download the data files
    - Then read through them
Access to Descriptions

- Need contributions of data
  - Software companies, manufacturers, standards bodies, the public, can all donate data that describes the key properties of mobile devices
- Need vocabulary for contributions
  - To ensure consistency, agree “names” for the device properties, and how they are represented (e.g. numeric)
- Need somewhere to store data
  - Maybe W3C will host a copy (for a while), and maybe some generous donors will provide places to host the data
- Need common run-time interfaces
  - Must ensure that solution will work with Java, C#, PHP, Apache, BEA, IBM, Sun, MS and many more providers of Web Server technology
- DDWG second charter
  - Framework for contribution (how to donate device descriptions)
  - Common Application Programming Interfaces
  - Cooperative storage (share the responsibility of hosting the data)
  - DDWG has 18 months to complete these tasks
Embracing Device Diversity

• Easy authoring for Mobile Web
  ➤ Basic device descriptions will enable basic content adaptation

• Greater contributions of content
  ➤ More people will be able to create content for the Mobile Web

• Content working on all devices
  ➤ More people will be able to access Web content via mobile devices

• Diversity benefits users
  ➤ People can use whatever mobile device suits their needs

• Diversity not a problem for authors
  ➤ Authors can write content using an adaptable markup language

• Perfect presentations for mobile specialists
  ➤ Professional companies (e.g. MobileAware) can provide enhanced device information and enhance adaptation capabilities

• Active mobile Web good for mobile markets
  ➤ More authors providing more content for more users will be good for the mobile Web and good for markets in the mobile Web