1 HCI and the Web

1.1 HCI – A Quick Reminder
1.2 Web Technology – A Brief Overview
1.3 Web Usability
1.4 Designing Web Sites for Usability
1.5 Web Accessibility

Literature:

• Jakob Nielsen: Designing Web Usability, New Riders 2000
• Steve Krug: Don’t Make Me Think, New Riders 2006 (2nd ed.)
• Shneiderman, Plaisant: Designing the User Interface: Strategies for Effective Human-Computer Interaction (5th Edition)
The Web Means Heterogeneity of Platforms

• Processing power
  – Processor, co-processors, cache
  – RAM

• I/O-performance
  – Hard drive speed
  – Network

• Input and Output
  – Displays
  – Keyboard layout

• Additional Hardware and Periphery
  – Video and audio (in/out)
  – Card reader, printer, scanner

• Software,
  – Browser
  – Operating System
Differences …
Statistics on Platform Usage

But:

- Never trust the statistics!
- Also small groups of users are important!
- Statistics may be very unreliable

Browser Statistics Month by Month

<table>
<thead>
<tr>
<th>Year</th>
<th>IE7</th>
<th>IE6</th>
<th>IE8</th>
<th>Firefox</th>
<th>Chrome</th>
<th>Safari</th>
<th>Opera</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>15.3%</td>
<td>12.1%</td>
<td>12.2%</td>
<td>46.6%</td>
<td>7.1%</td>
<td>3.6%</td>
<td>2.2%</td>
</tr>
<tr>
<td></td>
<td>August</td>
<td>15.1%</td>
<td>13.6%</td>
<td>10.6%</td>
<td>47.4%</td>
<td>7.0%</td>
<td>3.3%</td>
</tr>
<tr>
<td></td>
<td>July</td>
<td>15.9%</td>
<td>14.4%</td>
<td>9.1%</td>
<td>47.9%</td>
<td>6.5%</td>
<td>3.3%</td>
</tr>
<tr>
<td>2008</td>
<td>26.1%</td>
<td>19.6%</td>
<td>44.4%</td>
<td>3.6%</td>
<td>2.7%</td>
<td>2.4%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>December</td>
<td>26.6%</td>
<td>20.0%</td>
<td>44.2%</td>
<td>3.1%</td>
<td>2.7%</td>
<td>2.3%</td>
</tr>
<tr>
<td></td>
<td>November</td>
<td>26.9%</td>
<td>20.2%</td>
<td>44.0%</td>
<td>3.0%</td>
<td>2.8%</td>
<td>2.2%</td>
</tr>
</tbody>
</table>

...  

<table>
<thead>
<tr>
<th>Year</th>
<th>IE6</th>
<th>IE5</th>
<th>AOL</th>
<th>N3</th>
<th>N5</th>
<th>N4</th>
<th>IE4</th>
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<tr>
<td>2002</td>
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<td>29.9%</td>
<td>5.2%</td>
<td>1.1%</td>
<td>4.9%</td>
<td>2.0%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>49.1%</td>
<td>34.4%</td>
<td>4.5%</td>
<td>1.3%</td>
<td>4.5%</td>
<td>2.2%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>44.4%</td>
<td>40.1%</td>
<td>3.5%</td>
<td>1.2%</td>
<td>3.5%</td>
<td>2.6%</td>
<td>0.5%</td>
</tr>
</tbody>
</table>

OS Platform Statistics

Windows XP is the most popular operating system. The Windows family counts for about 90%:

<table>
<thead>
<tr>
<th>Year</th>
<th>WinXP</th>
<th>W2000</th>
<th>Win7</th>
<th>Vista</th>
<th>W2003</th>
<th>Linux</th>
<th>Mac</th>
</tr>
</thead>
<tbody>
<tr>
<td>September</td>
<td>65.2%</td>
<td>0.3%</td>
<td>3.2%</td>
<td>18.3%</td>
<td>1.5%</td>
<td>4.1%</td>
<td>6.5%</td>
</tr>
<tr>
<td>August</td>
<td>65.2%</td>
<td>0.3%</td>
<td>2.5%</td>
<td>18.1%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>July</td>
<td>67.1%</td>
<td>1.0%</td>
<td>1.9%</td>
<td>17.7%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Display Resolution

The current trend is that most computers are using a screen size of 1024x768 pixels or more:

<table>
<thead>
<tr>
<th>Date</th>
<th>Higher</th>
<th>1024x768</th>
<th>800x600</th>
<th>640x400</th>
<th>Unknown</th>
</tr>
</thead>
<tbody>
<tr>
<td>January 2009</td>
<td>57%</td>
<td>36%</td>
<td>4%</td>
<td>0%</td>
<td>3%</td>
</tr>
</tbody>
</table>
Other Graphical Browsers
## What are the Differences?

**Input**
- Text entry
- Speech
- Granularity
- ...

**Security / Privacy**

**Mobility**

**Capabilities**
- Plug-ins
- Video
- Bandwidth
- Multitasking

**Cost**

**Output**

- Text
  - Language
  - Direction
  - Fonts
  - Size

- Display
  - Size
  - Resolution
  - Displayable colours
  - Aspect ratio

- Speech
  - ...

- Security / Privacy

- Mobility

- Capabilities
  - Plug-ins
  - Video
  - Bandwidth
  - Multitasking

- Cost
Plain Text Browser, e.g. Lynx
Audio Browsing

• There are users who *listen* to Web sites!
• Example:
  – Web browser *Safari*
  – Screen reader *Voice Over* (built into Mac OS)
• Who among the Web designers will think of these users?
Heterogeneity of Users

- In principle, anybody can use the Web!
- Huge span of user variety:
  - Kids
  - Beginners
  - Elderly
  - Experienced technically educated professionals
  - Technically ill-educated professionals
  - Hackers

- “Know Thy User” - Is it possible on the Web?
- Why do people use the Web?
  - Assumedly easy and simple way of achieving things
  - Because it is fun
  - Because there are no other options

- (As always:) Simplicity is most important