Usability Testing Library Mobile Websites in a Fragmented Smartphone Market

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Usability Testing Library Mobile Websites in a Fragmented Smartphone World

Kimberly Pendell & Michael Bowman
Outline

a Smartphone ownership and use
a Smartphone market and trends
a Usability test and results
a Mobile site suggestions and trends
Internet Use by U.S. Smartphone Owners

Pew Internet & American Life Project, April–May 2011

- 35% of Americans owned a smartphone in April, 43% by December (Nielsen)
- 69% typically go online daily using their smartphone: 81% of 18–29 yo, 71% of 30–49 yo, 44% of 50+ yo
- 25% go online mostly using their smartphone, particularly: 42% of 18–29 yo, 38% of African-Americans and Latinos, 40% of < $30,000 annual income, 33% of high school graduates with no college
The Smartphone Landscape

- iOS Apple
- Android Google
- Windows Phone Microsoft

Brands:
- Acer
- Alcatel
- Archos
- ASUS
- Casio
- Dell
- HTC
- Huawei
- KTF
- Kyocera
- Lenovo
- LG
- Maylong
- Meizu
- Motorola
- MSI
- Panasonic
- Samsung
- Sharp
- Sony
- Toshiba
- Vizio
- ZTE
- Amazon
- Baidu
- Barnes & Noble
- Oracle
U.S. Smartphone Market Share, 2010–11
Sales per quarter

Source: NPD Group Mobile Phone Tracker
U.S. Smartphone Ownership, Q4 2011

Installed base

- Android: 46
- iOS: 30
- BlackBerry: 15
- Windows Mobile: 5
- Windows Phone 7: 111

Source: Nielsen Mobile Insight
Mobile Internet Access Market Share
February–December 2011

Source: NetApplications.com
Trends

- Android’s future
- Monopoly, duopoly or triopoly?
- The future of feature phones
- The effect of tablets
Field Testing vs. Laboratory Testing

- Field testing: difficult to have reliable method for reporting back user experience; high level of participant cooperation required
- Laboratory testing: important usability problems with mobile website can be easily missed
Our Version of Hybrid Usability Testing

- Recruit participants to test site with their own phones
- Controlled environment with recording capability
- Predetermined tasks
- Time for user to explore site independently
- Post-test survey
Recruiting Participants

- Facebook post on library account
- Announcement in library news blog, appearing on library homepage
- Flyers in the library and campus bulletin boards
Document Camera as Recording Device
Results

- Participants slow to connect the task of searching for a book with label “Search PSU-only Catalog”
- Multiple problems with chat reference
- Lack of mobile-friendly proxy authentication, error messages and linked forms
- Slow page loading
- Problems unique to different devices
Website Display Comparison
Smartphone vs. Feature Phone

[Image of a website display]
## Connectivity & Authentication

<table>
<thead>
<tr>
<th>Internet Connection</th>
<th>Library Mobile Website</th>
<th>Chat Reference</th>
<th>EBSCOhost</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSU unsecure wi-fi</td>
<td>No authentication</td>
<td>Authentication required</td>
<td>Authentication required</td>
</tr>
<tr>
<td>PSU secure wi-fi</td>
<td>No authentication</td>
<td>No authentication</td>
<td>No authentication</td>
</tr>
<tr>
<td>Cell network</td>
<td>No authentication</td>
<td>No authentication</td>
<td>Authentication required</td>
</tr>
<tr>
<td>Off campus</td>
<td>No authentication</td>
<td>No authentication</td>
<td>Authentication required</td>
</tr>
</tbody>
</table>
Notable Post-Test Survey Results

- High ratings for appearance and ease of use
- Search for articles on mobile website
  - 9 of 12 participants selected weekly or more than weekly
- Use “Find A Computer”
  - 8 of 12 participants selected weekly or more than weekly
  - “Everyday” and “Very important”
Usability Tips for Mobile Sites

- Essential, user oriented content
- Consider the user’s mobile context
- Navigation as simple as possible
- Design for screen rotation
Learn From Our Mistakes

- Consider the variety of ways users connect to your mobile site and how that might impact their use of site features
- Don’t make your usability tasks so simple that you waste the opportunity to get more in-depth information
- Expect the unexpected
Portland State Smartphone Share
Usability study (May) & mobile website analytics (Sept.–Jan.)

<table>
<thead>
<tr>
<th></th>
<th>Study Volunteers</th>
<th>Website Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Android</td>
<td>31%</td>
<td>23%</td>
</tr>
<tr>
<td>iOS</td>
<td>52%</td>
<td>70%</td>
</tr>
<tr>
<td>BlackBerry</td>
<td>4%</td>
<td>0.6%</td>
</tr>
<tr>
<td>Windows Phone</td>
<td>4%</td>
<td>0.5%</td>
</tr>
<tr>
<td>webOS</td>
<td>4%</td>
<td>0%</td>
</tr>
</tbody>
</table>
Possible Futures of Mobile Web Design

- Progressive enhancement
- Responsive design
- Mobile first

Questions?