Making beautiful music: The state of the art in mobile technology and how we can make the most of it in libraries

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&

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Objectives

• Define “mobile” (emphasis here on “smaller” devices)
• Trends
• Challenges & opportunities of “portability”
  – Meeting patrons where they’re at
  – Multiplicity of devices/formats
  – Emerging standards
• One library's experience piloting e-readers and iPads
• The future of reading

• This will NOT be a session on how to set up a mobile site for a library
Audience Poll

• Did you grow up analogue or digital?
• Do you own a “smart” cell phone?
• How many different electronic devices do you use in a typical day?
• What do you hope to learn from this session?
Definitions

- **Mobile App** – an application that runs on a specific device which may not require an internet connection (works offline)

- **Mobile Web Site** – a web site that has been tuned for a mobile display and touch-based navigation (requires an Internet connection)

- **Responsive Web Site** – a web site that has been tuned to progressively disclose and stack user interface and content elements depending on the computer or device screen size

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<table>
<thead>
<tr>
<th>Mobile WEB SITE pros</th>
<th>Mobile APP pros</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ease of maintenance</td>
<td>Offline access</td>
</tr>
<tr>
<td>Single design across device types</td>
<td>Discoverability in app market/store</td>
</tr>
<tr>
<td>No app market approval processes</td>
<td>Supports richer interactivity, advanced features</td>
</tr>
<tr>
<td>No third-party app store rules or changes</td>
<td>Tight integration with device (UI, hardware [e.g. GPS])</td>
</tr>
<tr>
<td>Instant availability/no updates required</td>
<td><strong>“HTML5” blurs the line</strong></td>
</tr>
<tr>
<td>Total control (e.g. DRM, programming language suitability)</td>
<td></td>
</tr>
</tbody>
</table>
Definitions (Continued)

• (late 1990s) eReader: A hand-held electronic device dedicated to the experience of reading books in electronic format. Inherently supports at least one Digital Rights Management (DRM) scheme to protect eBooks from piracy.

• (2000s) Tablet: A hand-held computer in the form of a flat tablet; esp. one that accepts input through a stylus or a fingertip. (Source: Oxford English Dictionary)

• (2006) Smartphone: An electronic device that combines a cell phone with a hand-held computer, typically offering Internet access, data storage, e-mail capability, etc. Supports native and downloaded apps as well.

• (2011) Web-enabled eReader: An electronic device that combines a an eReader with a hand-held computer, that includes Internet access, etc. Some web-enabled eReaders, like the Kindle Fire, support native and downloaded apps as well.
“Mobile”
Is Here
To Stay,
Because...
Tools amplify human effectiveness. We only give them up when there are better ones to replace them (or when the cost of using them is greater than the reward)

(top left) courtesy of Yiie
http://www.flickr.com/photos/yiie/
(left) courtesy of Thomas Fisher Rare Book Library
http://www.flickr.com/photos/thomasfisherlibrary/6234739339/
(top right) courtesy of BiblioArchives and National Film Board of Canada
http://www.flickr.com/photos/lac-bac/
Now that we have tools for food and shelter...

*Information* is the most important tool.

(Left) image courtesy of Nseika

http://www.flickr.com/photos/nseika/
These people need tools

When should we plant our crops?

What’s the market price for wheat?

How do I get dust out of my petticoats?

Who won that Houston Astros game?

I wonder if there are better schools in the next county?
Tools

(Left) Image courtesy of Special Collections, Waterloo Library
http://www.flickr.com/photos/48169267@N08/4417459128/
(Right) Image courtesy of Nature Naturejournal.com
And it’s (still) about “access to tools”
Access to Tools = Libraries
Library!
Humans want to *easily, quickly* find information *wherever* they are now, and then to *easily, quickly access it wherever* they want it *in the future*
Humans want to easily, quickly find information wherever they are now, and then to easily, quickly access it wherever they want it in the future.
easily
quickly
here,
now
+
in the
future
What is EASILY, QUICKLY?

EASILY

= At Our Digital Doorstep Every Day
(Email, Search Engines, Facebook, News Sites, Intranets/Portals)

QUICKLY

= 1-3 Clicks

(top) image courtesy of Faramaz Hashemi
http://www.flickr.com/photos/fhashemi/84663672/

(left) image courtesy of Robert Couse-Baker
http://www.flickr.com/photos/29233640@N07/3121350629/
WHERE is HERE, NOW?

Work/School
Home/Dorm
Commuting
Traveling
Leisure
Eating
How can I access my chosen information/tools IN THE FUTURE?

In my library
or
In my daily workflow
Loyalty by Application Category

When you read electronic books or e-books, do you ever read them on your...?

% of owners of each device who read e-books, and how frequently they read e-books on that device

- Daily or almost every day
- Few times a week
- Few times a month
- Less often
- Not read e-books on this device

<table>
<thead>
<tr>
<th>Device</th>
<th>Daily or almost every day</th>
<th>Few times a week</th>
<th>Few times a month</th>
<th>Less often</th>
<th>Not read e-books</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-book reader* (n=322)</td>
<td>32%</td>
<td>29%</td>
<td>19%</td>
<td>13%</td>
<td>7%</td>
</tr>
<tr>
<td>Tablet owner (n=298)</td>
<td>25%</td>
<td>19%</td>
<td>20%</td>
<td>17%</td>
<td>19%</td>
</tr>
<tr>
<td>Desktop/laptop (n=764)</td>
<td>7%</td>
<td>11%</td>
<td>12%</td>
<td>15%</td>
<td>54%</td>
</tr>
<tr>
<td>Cell phone (n=782)</td>
<td>5%</td>
<td>8%</td>
<td>9%</td>
<td>7%</td>
<td>70%</td>
</tr>
</tbody>
</table>

* Question was only asked of owners of each device who read e-books in general, so figures are % of those who own that device.

Source: Pew Research Center’s Internet & American Life Reading Habits Survey, November 16-December 21, 2011. N=2,986 respondents age 16 and older. Interviews were conducted in English and Spanish and on landline and cells. The margin of error for the sample is +/- 2 percentage points.
“Mobile” Matters For Libraries Because...
Thinking about the last book you read, in any format, did you...

% of American readers age 16+, as of December 2011

- Purchase it: 48%
- Borrow from friend/family: 24%
- Borrow from library: 14%
- Other: 13%

Source: Dec. 2011 results are from a survey of 2,986 people age 16 and older conducted November 16-December 21, 2011. The survey was conducted in English and Spanish and on landline and cell phones. The margin of error is +/- 2 percentage points. N for number of those who had read a book in the past 12 months=2,474.

When you want to read a particular e-book, where do you look first?

% of American e-book readers age 16+, as of December 2011

- At an online bookstore/website: 75%
- At your public library: 12%
- Someplace else: 5%
- Don’t know: 5%

Source: Dec. 2011 results are from a survey of 2,986 people age 16 and older conducted November 16-December 21, 2011. N for number of those who had read a book in the past 12 months=2,474 among those age 16 and older. The survey was conducted in English and Spanish and on landline and cell phones. The margin of error is +/- 2 percentage points.
It’s (still) about meeting library users wherever they’re at...
Growth in mobile web traffic as percent of total web traffic

For this chart, “mobile” is defined as a pocket-sized computing device, typically having a display screen with touch input or a miniature keyboard. Source: GlobalStats, StatsCounter.com
Mobile Usage

• Percentage of global web traffic attributed to mobile devices is 8.53%* to 13.4%**
• All stats sources show percentages almost doubling since a year ago

*Source StatsCounter.com, February 2012. Excludes tablets.
** Source Wikimedia, February 2012. Based on browser detection.
More Smartphones & Tablets than *People*

...the number of mobile devices rose by 9 percent in the first six months of 2011, to 327.6 million, which exceeds the number of people – 315 million – who live in the U.S. and its territories. Internet traffic also rose 11 percent, to 341.2 billion megabytes during that time.

...According to the survey’s data, *people keep more than one wireless device*, including smartphones and tablets, in their possession. Some analysts believe the surge comes from people having greater access to more of these devices, which have dropped in price and become more readily available.

Source: http://www.ctia.org/advocacy/research/index.cfm/AID/10316
• Mobile units shipped per year (Android + iPhone + iPad) now exceeds PC + Mac units shipped per year

• Note logarithmic scale of vertical axis (units)

Key Trends

• Convergence of:
  – Apps and Mobile Web Sites
    • FinancialTimes.com
  – Computer and Mobile Operating Systems
    • Windows 8
    • Mountain Lion

• HTML5
  – Blurring lines between “online” and “offline”
  – Tighter integration with devices
  – More interactivity

• “Responsive” Web Sites
  – BostonGlobe.com

• Open Standards
  – MP3s
  – EPUB & DAISY

• Anti-DRM…?
  – Apple iTunes moved to MP3
  – “DRM-free” Publishers
Smartphone Platform War

Up
- iOS
  - Still exceeds Android in data usage
- Android

Down
- Blackberry
- Symbian
  - But Nokia making bold bets with Lumia
- Windows
  - Making bold bets with Windows8

Source: http://www.asymco.com/2012/02/21/the-opportunity-cost-of-windows-phone/
EASILY

= At Our Digital Doorstep Every Day

QUICKLY

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Easier Said Than Done.
# 2005 Format/Device Landscape

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<thead>
<tr>
<th>Content Type/Device Type</th>
<th>Online</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PDF</td>
</tr>
<tr>
<td>Computers</td>
<td></td>
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</table>
# 2012 Format/Device Landscape

<table>
<thead>
<tr>
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<th>Offline</th>
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<tbody>
<tr>
<td>PDF</td>
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<td>HTML</td>
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<td>Images</td>
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<td>Video</td>
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<td>Smartphones</td>
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<td>![Smartphones Offline]</td>
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<tr>
<td>ADE eReaders</td>
<td>![ADE eReaders Online]</td>
<td>![ADE eReaders Offline]</td>
</tr>
<tr>
<td>iPod</td>
<td>![iPod Online]</td>
<td>![iPod Offline]</td>
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<tr>
<td>WMA/MP3 Players</td>
<td>![WMA/MP3 Players Online]</td>
<td>![WMA/MP3 Players Offline]</td>
</tr>
<tr>
<td>Web-enabled eReaders</td>
<td>![Web-enabled eReaders Online]</td>
<td>![Web-enabled eReaders Offline]</td>
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</table>
Challenges to “Easily & Quickly”

- Proprietary content formats & device types
- Multiple content formats
- Multiple platforms
- DRM requirements
- Inconsistent accessibility support
- Inconsistent internationalization support
But Easier & Quicker is Possible, With Forethought And Planning.
Meeting Your Library Patrons in Their Digital Workflow

- Understand patrons’ digital behaviors
- Understand socioeconomic patterns of content usage and Internet access
  - Income
  - Education level
  - Age
  - Physical Abilities
- Prioritize patrons’ most-used
  - Content
  - Devices
  - Operating Systems
- Meet them in their most frequent digital workflows
- Or ensure the *reward exceeds the effort* of learning a new path or workflow
FINDING THE MUSIC IN THE CACOPHONY
What are libraries doing with portable devices?

- Kindles, Nooks, other e-readers
- iPads and other tablets
- iPods
- Rule of the day is experimentation
- Pitfalls
E-readers

• Represent more complexity because content must be acquired and maintained
• Issues with credit card security
• Licensing issues
• Devices marketed for consumers, not for library use
• How they work with eBook platforms such as Overdrive, 3-M Cloud, EBSCOhost, ebrary, etc.
Nooks, iPads and Kindles

Available for checkout at the Circulation Desk

http://media.lib.ecu.edu/techsrv/E-Books-List.cfm
Examples of device lending in libraries

NC State University
Duke University
Wright State University
East Carolina University
Oregon State University
iPads & other tablets

• Managed more like laptops, i.e. wiped clean after each circulation
• No eBook or other content maintained on these devices
• Apps added based on perceived need and/or repeated requests
How Mobile impacts library services, reading styles, cultural implications

• Marshall McLuhan: The medium is the message *Understanding media* (1964)

• People get caught up in the content afforded by new media. However, “What both enthusiast and skeptic miss is what McLuhan saw: that in the long run a medium’s content matters less than the medium itself in influencing how we think and act.” P.3 *The Shallows*
How changed is the way we think & process information?

• Neuroplasticity: The ability of the brain to reroute damaged connections, compensate for the lack of vision, hearing, etc. Plastic does not mean elastic. Not all changes and adaptations are necessarily useful or beneficial.

• Hypertext links slows down reading comprehension & serves to distract, according to numerous studies

• The switch from true reading to “power-browsing” has happened very quickly.
“Overreliance on electronic information aids can result in a disuse atrophy of your memory powers.” (p.2 Restak)
Analogue vs. Digital thinking

- Memorization as a learning tool -- a thing of the past
- Commonplace books → Pinterest
- Passing notes in school → Texting
- Letter writing → Facebook
- Columns vs. Blogs (See NASIG proceedings, 2007 – Scherlen & Nardini)
Examples of Mobile Web Sites

http://www.simmons.edu/library/m/
http://simmons.libguides.com/content_mobile.php?pid=284111&sid=2338906
http://m.library.illinois.edu/
http://m.library.illinois.edu/dbs.asp
http://m.lib.ncsu.edu/
http://m.library.rice.edu/articles.html
http://worldcatmobile.org/?site=www
http://books.google.com/m
http://m.hathitrust.org/
http://mobile.jstor.org/
http://pubmeddh.nlm.nih.gov/
Questions/Comments?

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