

# 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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Eleanor I. Cook, East Carolina University  
&

Megan Hurst, EBSCO Publishing

# 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

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

# 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?

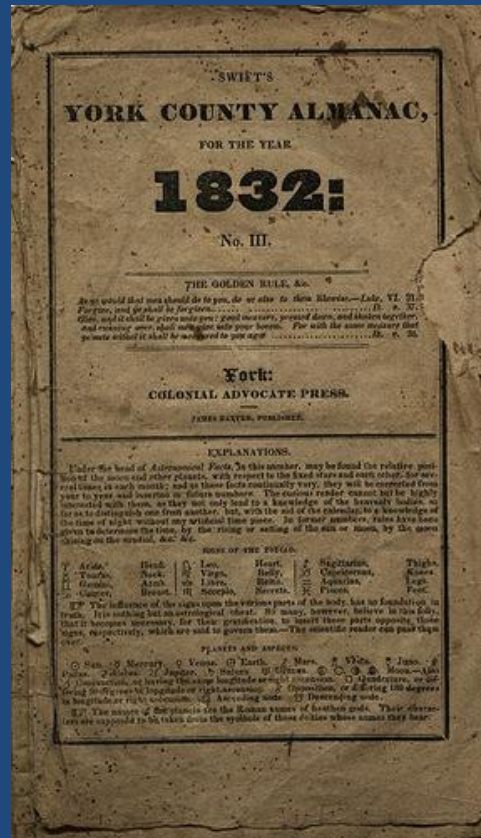
How do I get dust out of my petticoats?

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"

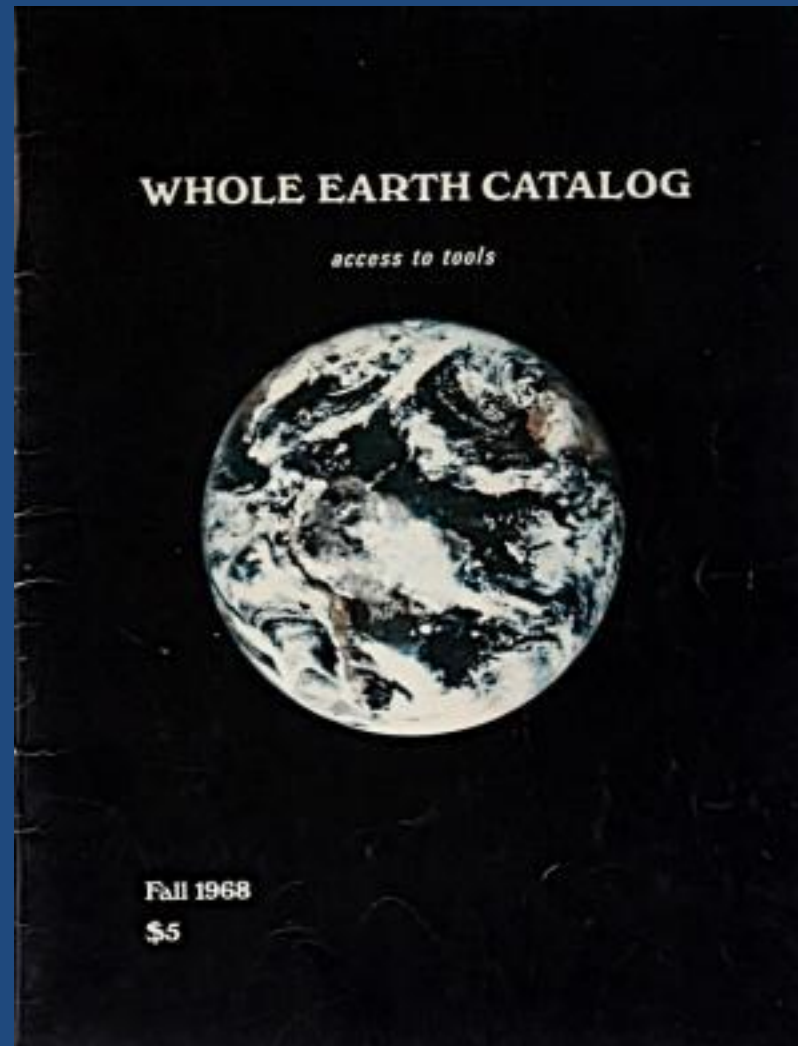
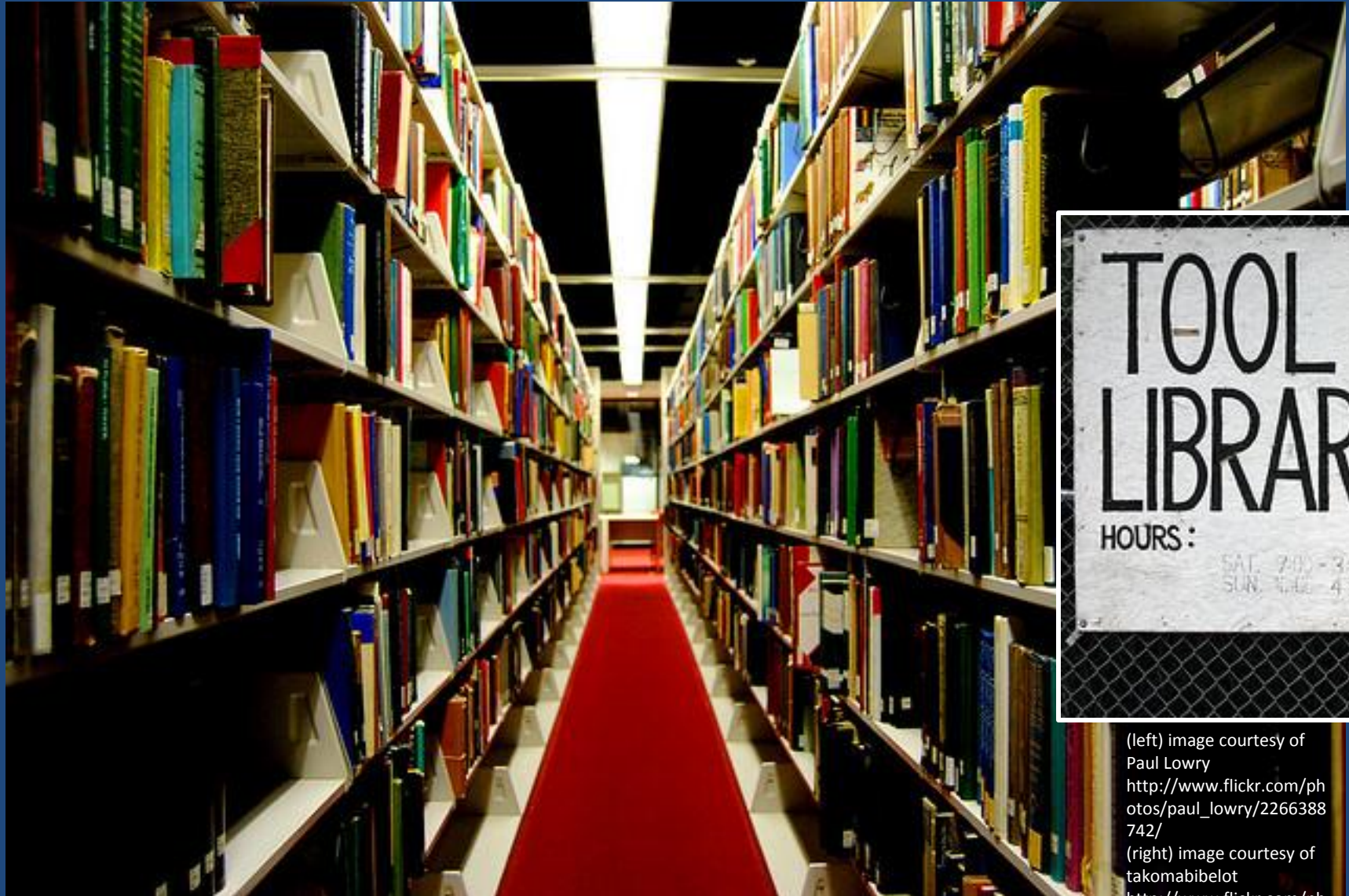


Image courtesy of New Whole Earth LLC  
<http://www.wholeearth.com/issue-electronic-edition.php?iss=1010>



# Access to Tools = Libraries

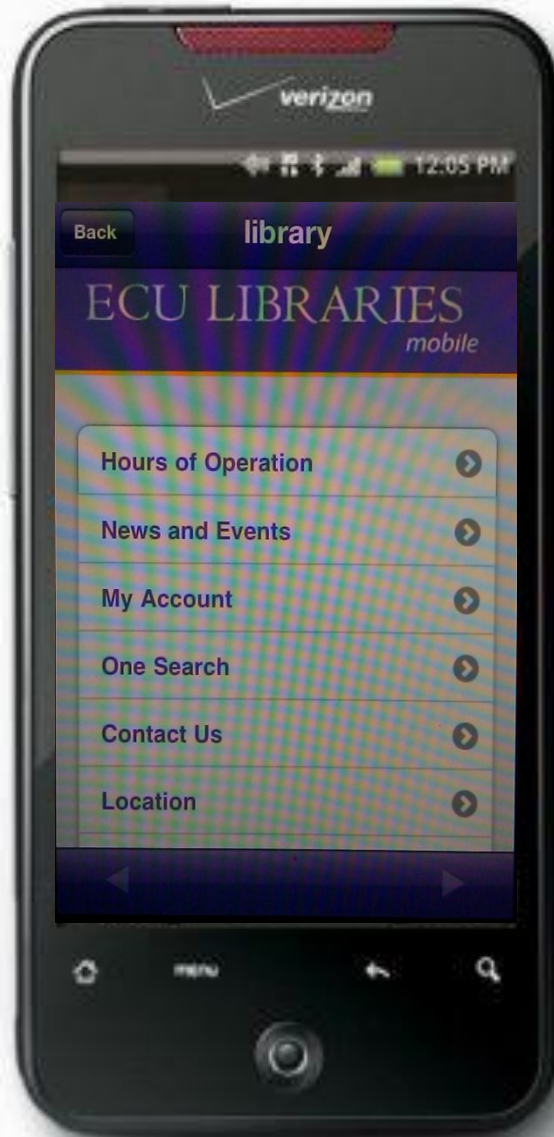


(left) image courtesy of  
Paul Lowry  
[http://www.flickr.com/photos/paul\\_lowry/2266388742/](http://www.flickr.com/photos/paul_lowry/2266388742/)

(right) image courtesy of  
takomabelot  
<http://www.flickr.com/photos/takomabelot/23026>



Tool



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*

*easily, quickly*

*wherever*

*now,*

*easily, quickly*

*wherever*

*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

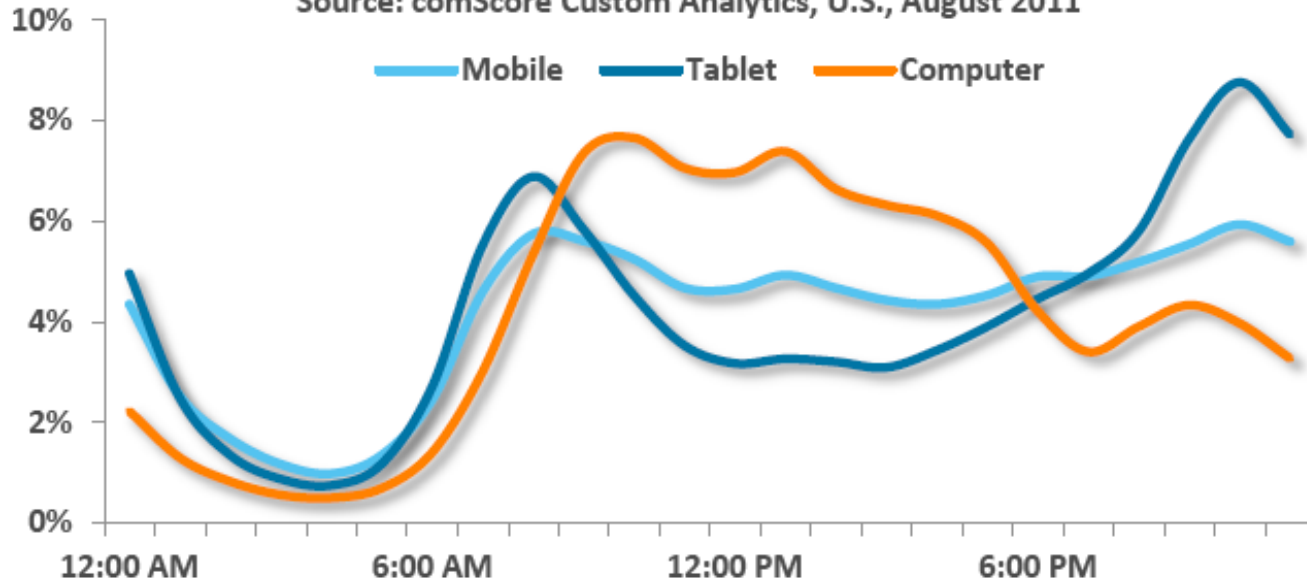
Traveling

Leisure

Eating

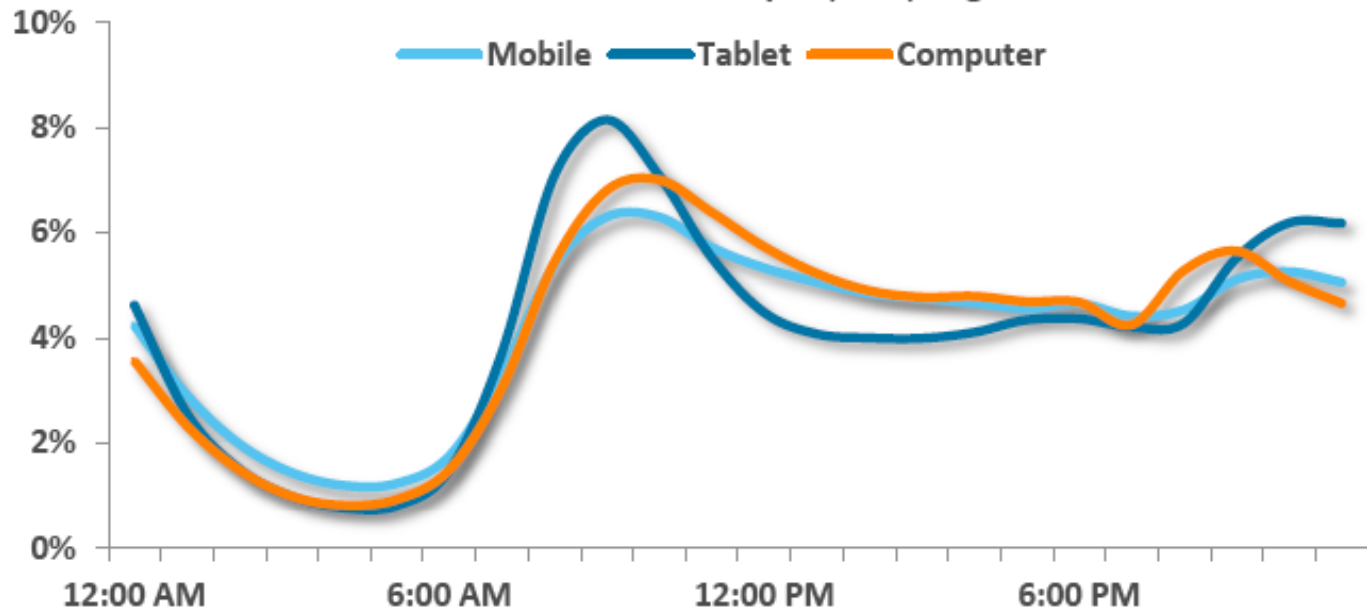
### Share of Device Page Traffic for News Category (Weekday)

Source: comScore Custom Analytics, U.S., August 2011



### Share of Device Page Traffic for News Category (Weekend)

Source: comScore Custom Analytics, U.S., August 2011



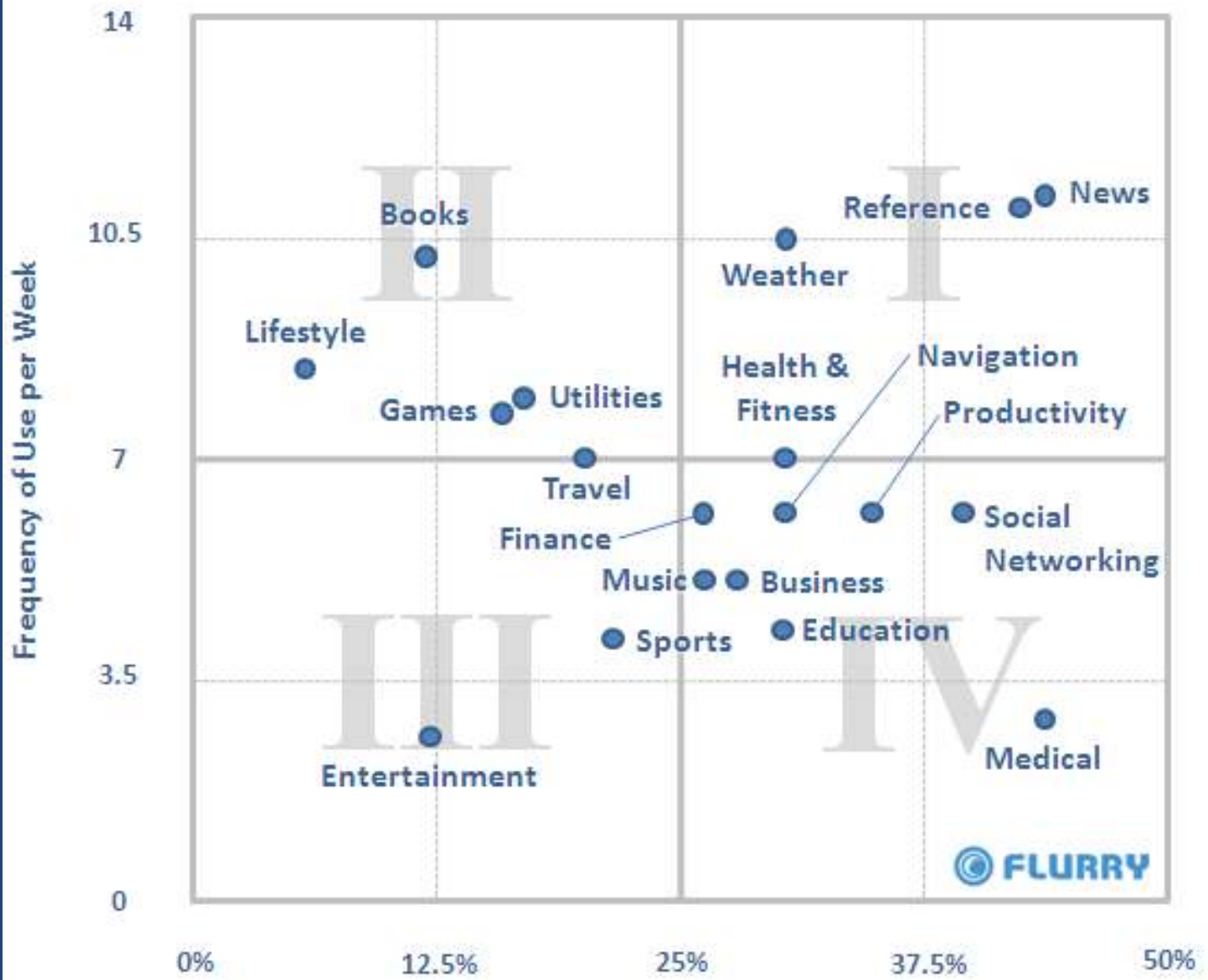
How can I access my chosen  
information/tools IN THE FUTURE?

In my library

or

In my daily workflow

# Loyalty by Application Category

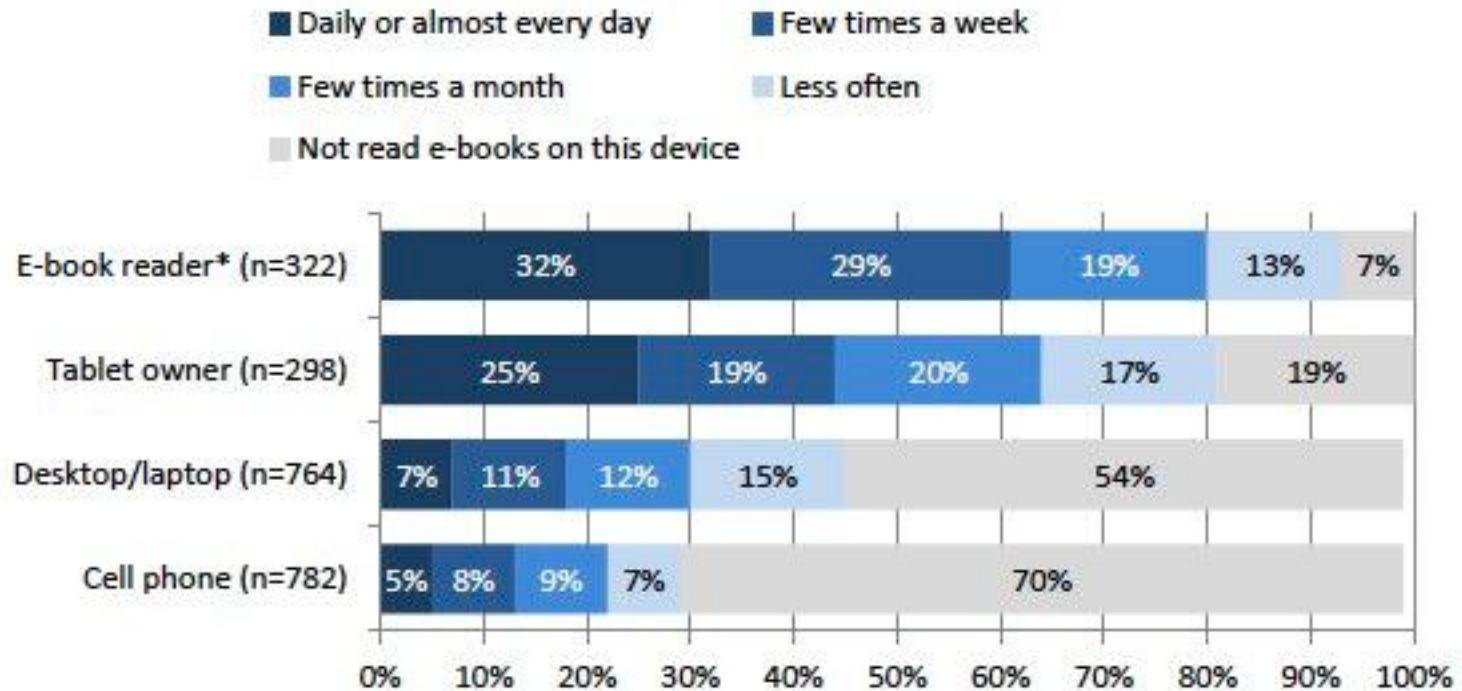


flurry1

Retention over 90 days

## 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



\* 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...

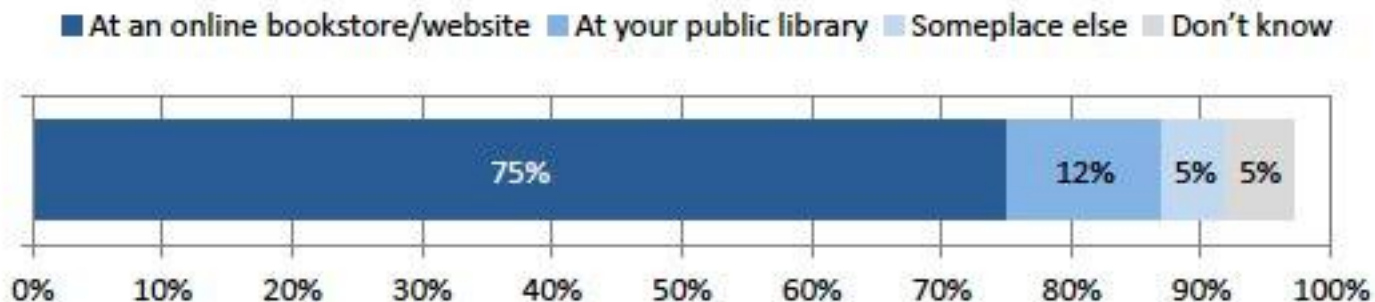
% of American readers age 16+, as of December 2011



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

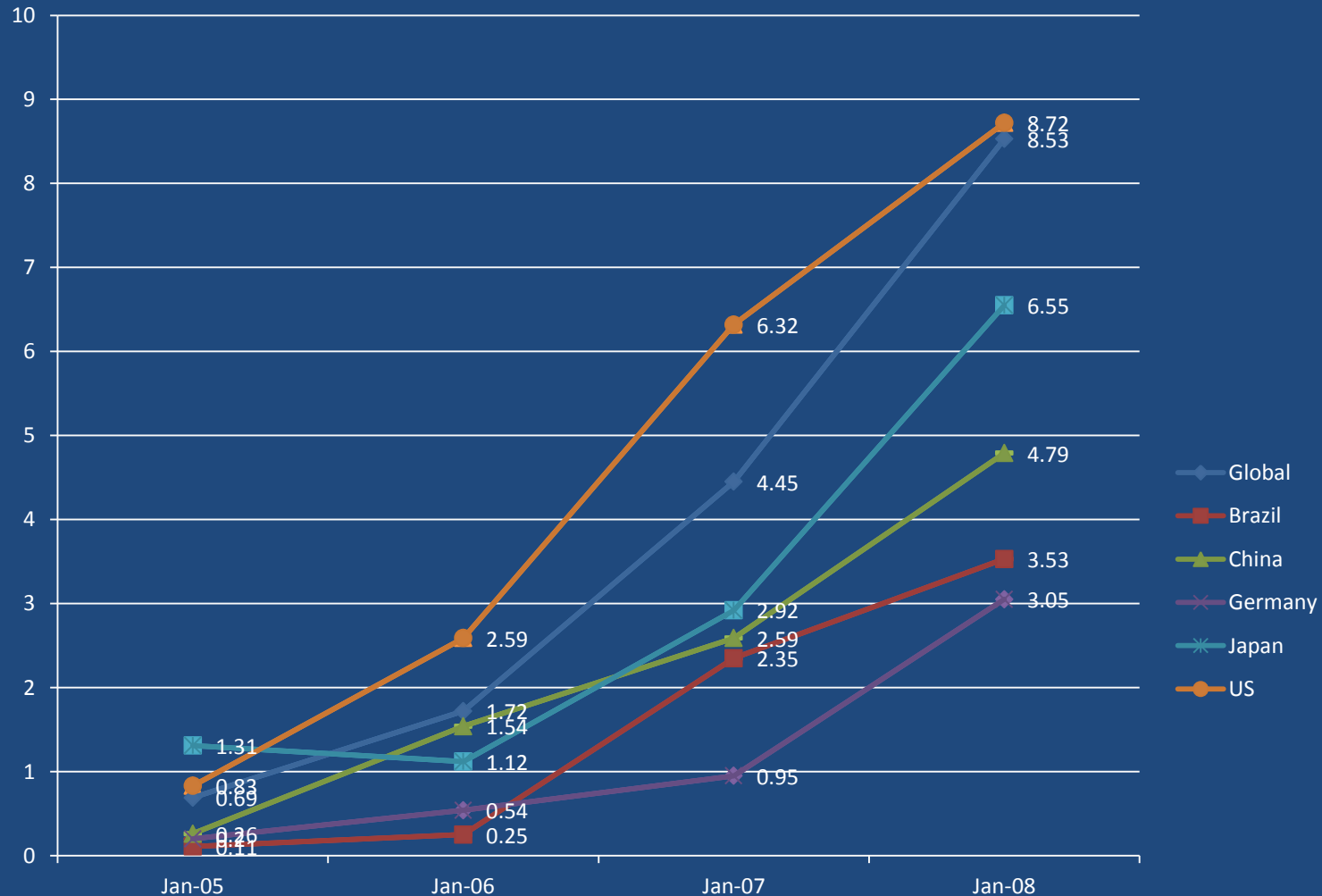


Source: Dec. 2011 results are from a survey of 2,986 people age 16 and older conducted November 16-December 21, 2011. N for number of those who had read a book in the past 12 months=2,474 among those age 16 and older. The survey was conducted in English and Spanish and on landline and cell phones. The 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  
12/4/2012

# 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.

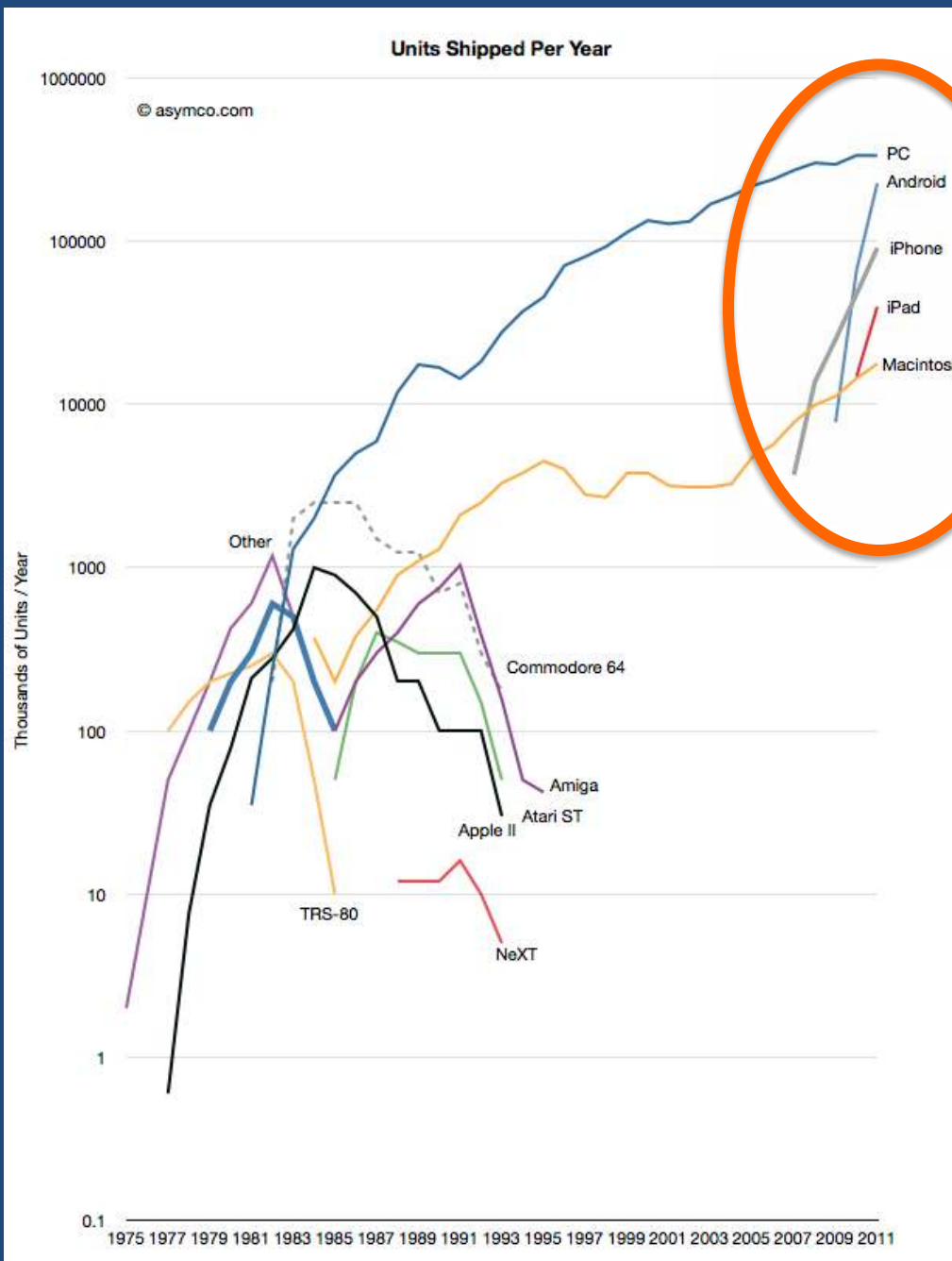
\*\* Source Wikimedia, February 2012. Based on browser detection.

# 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

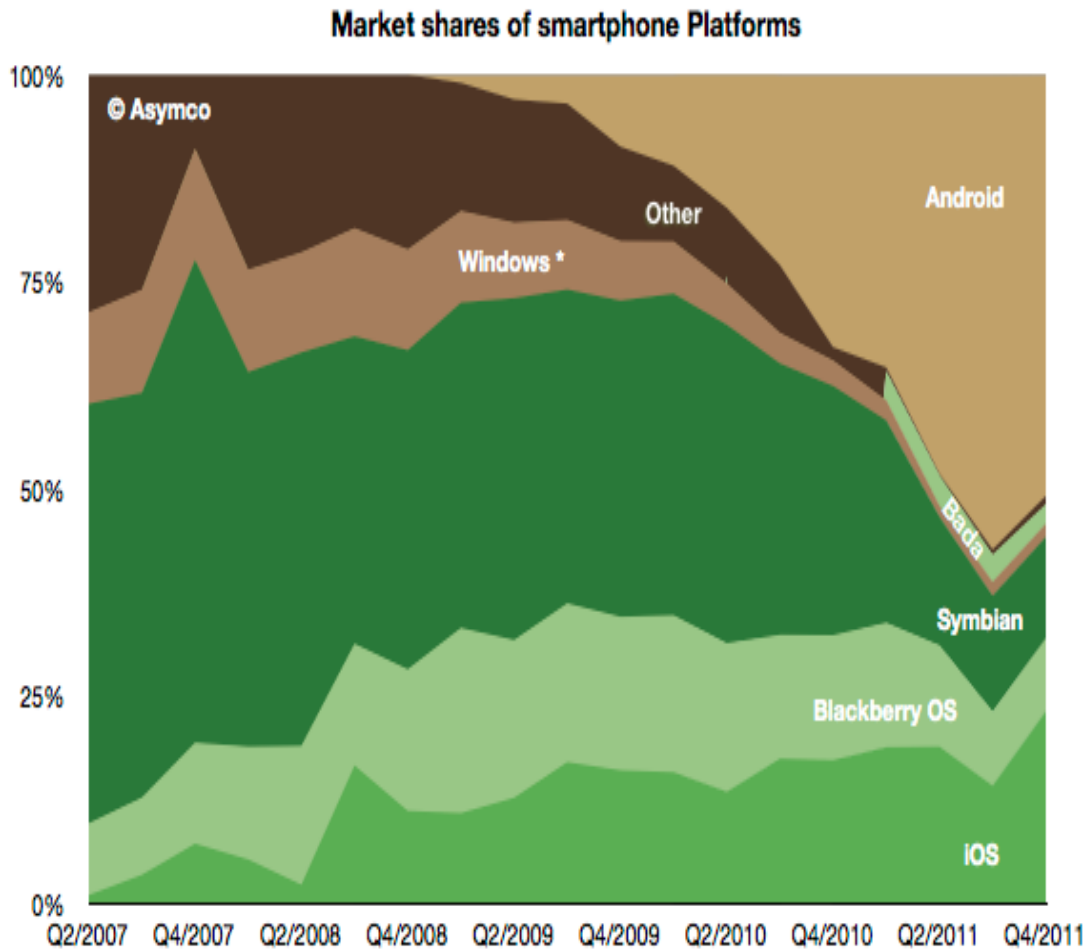
- Note logarithmic scale of vertical axis (units)

# 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



Source: <http://www.asymco.com/2012/02/23/the-opportunity-cost-of-windows-phone/>

## Up

- iOS
  - Still exceeds Android in data usage
- Android

## Down

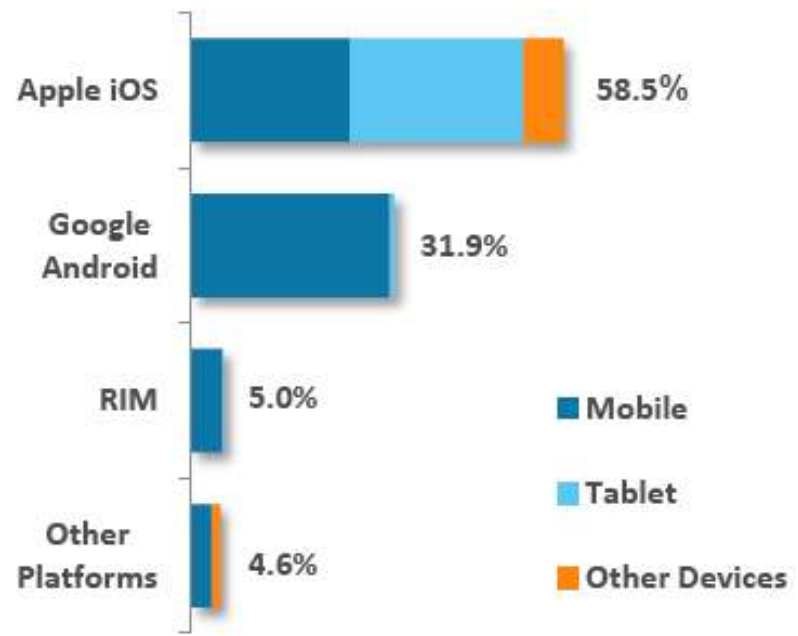
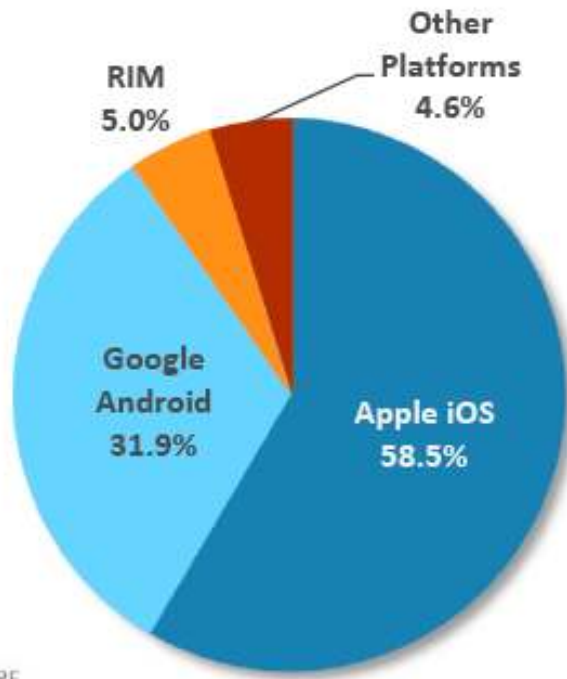
- BlackBerry
- Symbian
  - But Nokia making bold bets with Lumia
- Windows
  - Making bold bets with Windows8



# Key Trends (US)

## OS Market Share of Digital Traffic

Source: comScore Device Essentials, U.S., August 2011



“Mobile” in this context means feature phones and smartphones. “Other Devices” means web-enabled gaming consoles, multimedia players, and eReaders. Source: comScore, Inc. (2011). *Digital Omnivores: How Tablets, Smartphones and Connected Devices are Changing U.S. Digital Media Consumption Habits*. [http://www.comscore.com/Press\\_Events/Presentations\\_Whitepapers/2011/Digital\\_Omnivores](http://www.comscore.com/Press_Events/Presentations_Whitepapers/2011/Digital_Omnivores)

EASILY

=



At Our Digital Doorstep Every Day

QUICKLY

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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/>

Easier Said  
Than Done.

# 2005 Format/Device Landscape

	Online				
Content Type/ Device Type	PDF	HTML	Images	Video	Audio
Computers					

# 2012 Format/Device Landscape

	Online						Offline					
Content Type/ Device Type	PDF	HTML	EPUB	Images	Video	Audio	PDF	HTML	EPUB	Images	Video	Audio
Computers	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Tablets	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Smart-phones	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
ADE eReaders	Green	Grey	Green	Grey	Grey	Grey	Green	Grey	Green	Grey	Grey	Grey
iPod	Grey	Green	Grey	Green	Green	Green	Grey	Grey	Grey	Green	Green	Green
WMA/MP3 Players	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Green
Web-enabled eReaders	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green

# 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://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://pubmedhh.nlm.nih.gov/>

**AUDIENCE Q & A**

# Questions/Comments?

Eleanor I. Cook

Assistant Director for Collections & Technical Services

Academic Library Services -- Joyner Library

East Carolina University

[cooke@ecu.edu](mailto:cooke@ecu.edu)

Megan Hurst

Product Manager – Library User Experience

EBSCO Publishing

[mhurst@ebscohost.com](mailto:mhurst@ebscohost.com)

@MHZUX