Designing Mobile Experiences: Building Mobile Web Apps

Computers in Libraries
March 20, 2012

Jason A. Clark
Head of Digital Access and Web Services
Montana State University Libraries
A Look Ahead...

- Native Apps versus Browser Apps
- Mobile Design Trends
- Mobile Design Case Studies
- Mobile Development Tips
- Demos and Code Templates
- Getting Started
Hello, My Name is…

• Background, Position
• HTML, Programming experience?
• Experience with Mobile Design
• What do you want to learn most?
Native Apps

- Installed on the iPhone or Device
- Access to the hardware (speakers, accelerometer, camera, etc.)
- Written with Objective-C (Apple)
- "App Store" or Proprietary Distribution
Browser (Mobile) Apps

- Web site that is specifically optimized for the iPhone or mobile device
- Built with standard web technologies
- Available at a URL
- Speedy debugging and development
Browser

v.

Native
Shiny App Syndrome?

- Mobile web first?
- Incorporate what you learn into App development
- Your thoughts?

Source: "Shiny app syndrome" and Gov 2.0” by Alex Howard from O’Reilly Radar
Trends in Mobile Design

• A Survey of Major Web Sites
http://mobile.twitter.com
http://m.youtube.com
Transcript: Barack Obama's Inaugural Address

NPR.org, January 20, 2009 · The following is Barack Obama's inaugural address, as prepared for delivery.

My fellow citizens:

I stand here today humbled by the task before us, grateful for the trust you have...

http://m.npr.org/
http://www.simonandschuster.mobi/
Current Exhibitions

Yaddo: Making American Culture
Humanities and Social Sciences Library

Jill Kupin Rose Gallery - Ongoing
Humanities and Social Sciences Library

Jill Kupin Rose Gallery - Ongoing
ONGOING EXHIBITION
This ongoing exhibition consists of large wall panels with photographs, text, objects, and videos illustrating

http://m.nypl.org
http://m.delicious.com/
Mobile App Design, Case Studies

Demos:
Terra - lifeonterra.com
Terra mobile - lifeonterra.com/m/
MSU Extension - arc.lib.montana.edu/msu-extension/
MSU Extension mobile - arc.lib.montana.edu/msu-extension/m/

Download:
Mobile template - www.lib.montana.edu/~jason/files/m/
Explanation & blog post - http://wp.me/p8yR-1J

Code Samples:
http://www.lib.montana.edu/~jason/files.php
2 live mobile web apps...

Terra - lifeonterra.com becomes Terra mobile - lifeonterra.com/m/

MSU Libraries - www.lib.montana.edu becomes MSU Libraries mobile – www.lib.montana.edu/m/
TERRA 537: A Winning Scenario

A WINNING SCENARIO is a short film about the agricultural implications of climate change in Kenya. Despite the adverse effects of global warming in Kenya, local communities are adapting farming practices...

Date Uploaded: Fri, 23 Jul 2010 03:14:51 +0000

View Full Details: http://film.terra.com/month/0316865

Search TERRA:
Making the Move to Mobile...

“My goal was initially just to make a mobile companion for the facebook.com mothership, but once I got comfortable with the platform I became convinced it was possible to create a version of Facebook that was actually better than the website.”

Joe Hewitt, lead developer for touch.facebook.com
Source: http://joehewitt.com/post/ipad/
functional

essence

necessary

primary

core

essential

simple
Exercise

• Pick a web site
• Define primary mobile actions
• Choose mobile entry points (links)
Mobile Development Tips

- A different design mindset
- Development with new limitations
- 10 tips to get us “mobile design” thinking
Narrow your Focus

• Do a few things really well
• What are the core actions?

Delta Desktop != Delta Mobile
Know your Audience

• Run the Analytics
• Research for Mobile Browser Types
Learn from the Masters

• View Source -> m.flickr.com
• "Be Mobile" with User Agent Switcher

Study the Interface & Device

• Scalable Design
• Think Percentages
  ○ 320px AND 480px
Mobile UX = targets, gestures, actions

- New forms of interaction
- Tactile navigation
  - touch, pinch, spread, flick, spin (gyrometer)

Apple recommends a minimum target size:
29px wide 44px tall
Speed FTW, Performance First

• Limit Images and Markup
  o Limit HTML pages to 25KB to allow for caching
• "Minify" your scripts and CSS
  o JSLint, CleanCSS
• Take Advantage of HTML5, CSS3
  o <!DOCTYPE html>
Respect the URL

- Follow the "m" convention
  - m.delicious.com OR lifeonterra.com/m/
- Keep Categories (directories) Short

It's a touch environment, not a typing environment.
Mobile Browsers = Cutting Edge

• WebKit Browser Engine
• Supports many HTML5 and CSS3 features
• Native app functionality
  o geolocation
  o offline storage
  o web workers
Allow for User Choice

- Link to Full Site
- Sniff for User Agent - Detection
Know Mobile Design Conventions

- One Column Layout
- Whitespace is Your Friend
- Embrace an Economy of Language
- "Quick Visit" Architecture
Mobile Development - Demos

Demos:

Mobile Template (custom)
www.lib.montana.edu/~jason/files/touch/

Mobile Template (jQtouch)
www.lib.montana.edu/~jason/files/touch/

Mobile Template (jQuery Mobile)
www.lib.montana.edu/~jason/files/touch-jquery/

Code Samples and Downloads:
www.lib.montana.edu/~jason/files.php
Mobile Validators

- W3C Mobile Site Validator
  - http://validator.w3.org/mobile

- Mobile App Validator from mobiforge
Mobile Development in Libraries

• Chad Haefele, Mobile Site Generator
  o http://www.hiddenpeanuts.com/msg/
• Jason Casden, WolfWalk at NCSU
  o http://www.lib.ncsu.edu/dli/projects/wolfwalk/
• Laurie Bridges and Kim Griggs
  o http://ir.library.oregonstate.edu/jspui/handle/1957/16437

* See Mobile Development - Library Success Wiki
Getting Started, Learning More

• Don't Ignore Frameworks and Libraries
  o jQtouch, iUI, Sencha Touch, PhoneGap
• Google App Inventor
  o http://appinventor.googlelabs.com/about/
• Mobile Web Apps - Apple
  o http://developer.apple.com/safari/
• Mobile Web App Design: Getting Started
  o Michael Doran, Code4Lib 2010
  o http://code4lib.org/conference/2010/doran
Getting Started, Resources

• mobify.me for site conversion (page limit)
  • http://mobify.me/features/

• *Mobile Design and Development* (O’Reilly)
  by Brian Fling
  ISBN: 9780596155445
  http://www.worldcat.org/oclc/318413920

• Use the provided templates, bang on rocks, ask me questions…
Mobile Screen Resolutions

- Android (Motorola Droid) 480x854
- Android (MyTouch) 320x480
- Android (Nexus One) 480x800
- Apple iPhone 320x480
- Apple iPad 1024x768
- Palm Pre 320 x 480

Source: http://insideria.com/2010/05/building-web-sites-optimized-f.html
Common Mobile Interactions

- Tap
- Double Tap
- Drag
- Flick
- Pinch
- Spread
- Press
- Press & Tap
- Press & Drag
- Rotate
Mobile First as Strategy

“Google programmers are doing work on mobile applications first, because they are better apps and that's what top programmers want to develop.”

- Eric Schmidt, Google CEO

Contact Information

Jason A. Clark
Head of Digital Access and Web Services
Montana State University Libraries
jaclark@montana.edu
twitter.com/jaclark
www.jasonclark.info