

# **Designing Mobile Experiences:**

## **Building Mobile Web Sites and Apps**

Offline Montana  
February 2, 2013

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Montana State University Libraries

pinboard.in tag

<http://pinboard.in/u:jasonclark/t:offline13/>

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#offline13

# A Look Ahead...

- Native Apps versus Browser Apps
- Mobile Design Trends
- Mobile Design Case Studies
- Mobile Development Tips
- Demos and Code Templates

# Mobile Expectations

“13% of those ages 16 and older have visited library websites or otherwise accessed library services by mobile device.”

Pew Research Center's Internet & American Life Project

Released: December 31, 2012

<http://libraries.pewinternet.org/2012/12/31/mobile-connections-to-libraries/>



\*Person in this room\* added 4 photos to the album iOS Photos.

# 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

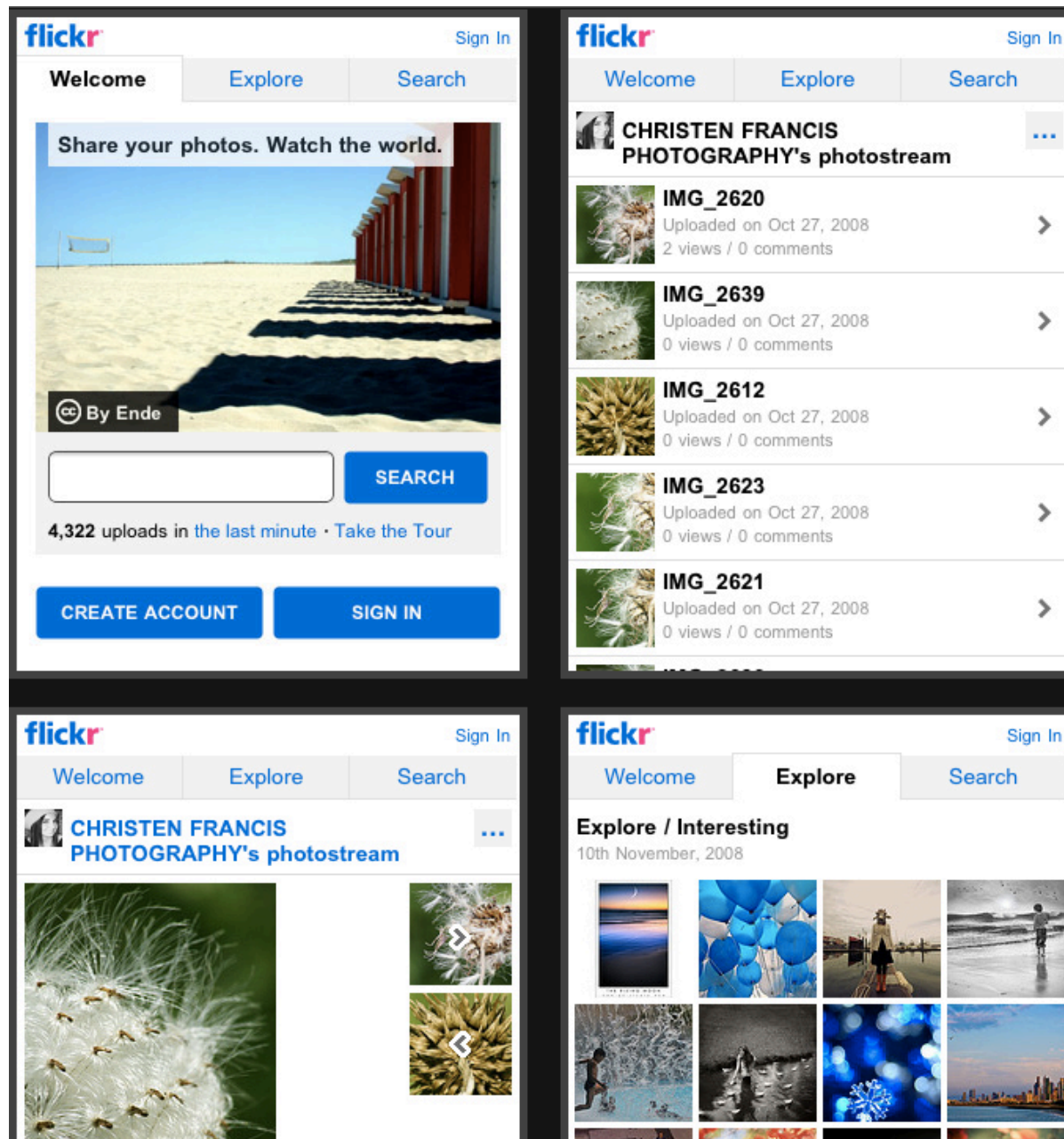
# Shiny App Syndrome?

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

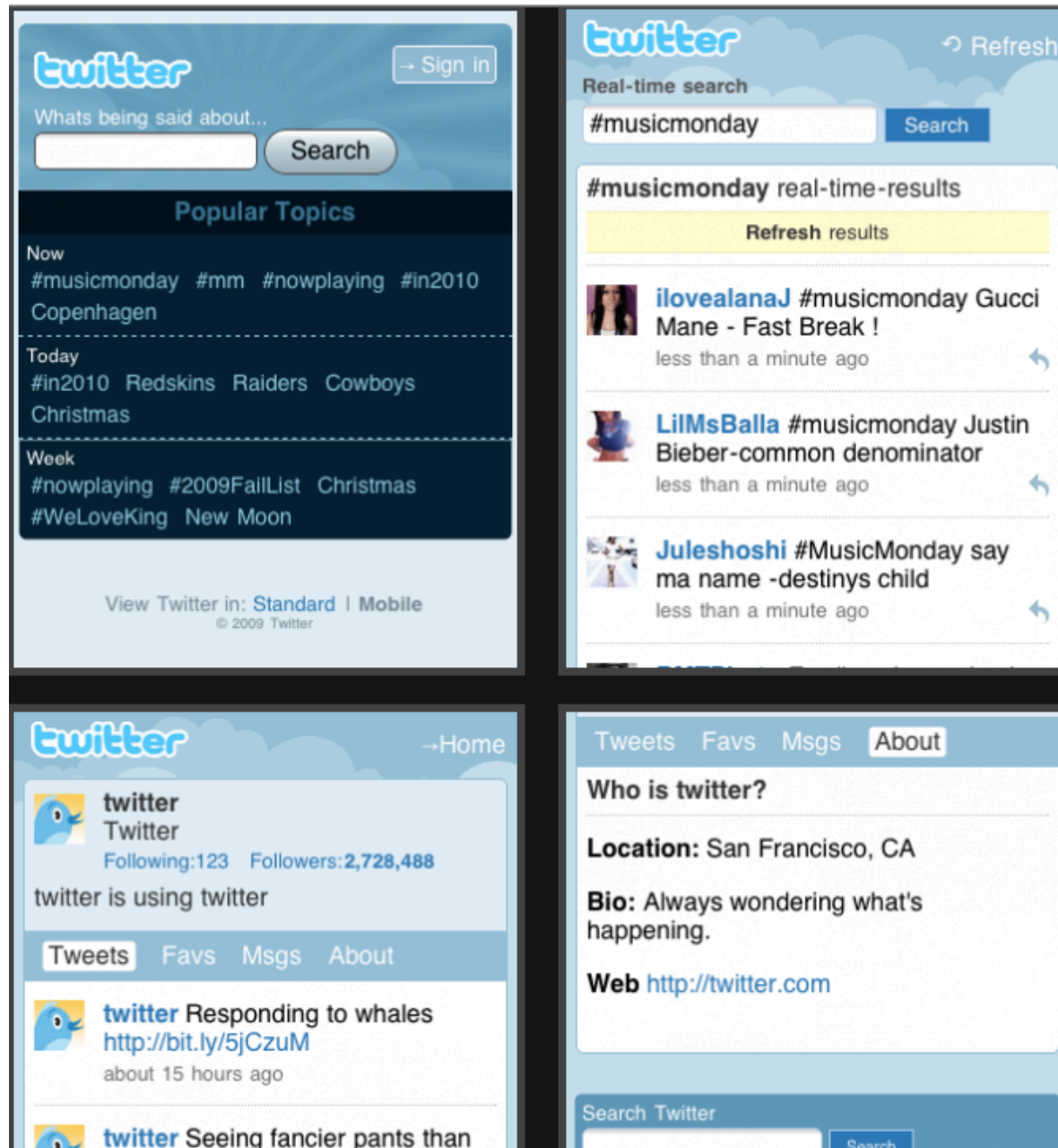
Source: "Shiny app syndrome" and Gov 2.0" by Alex Howard from O'Reilly Radar  
<http://radar.oreilly.com/2010/10/is-there-a-government-app-for.html>

# Trends in Mobile Design

- A Survey of Major Web Sites



<http://m.flickr.com>



<http://mobile.twitter.com>

amazon.com.

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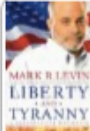
Business & Investing 25,559 >

Politics & Current Events 11,380 >


Literary Fiction 8,692 >

amazon.com.

Kindle Store > New York Times Best Sellers

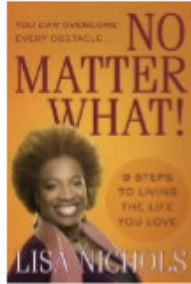


1. [Liberty and Tyranny: A Conservative Manifesto \(Kindle Edition\)](#)  
Mark R. Levin  
\$9.99 - Auto-delivered wirelessly  
★★★★☆ (1101)



2. [The Help \(Kindle Edition\)](#)  
KATHRYN STOCKETT  
\$9.99 - Auto-delivered wirelessly  
★★★★☆ (251)

amazon.com.

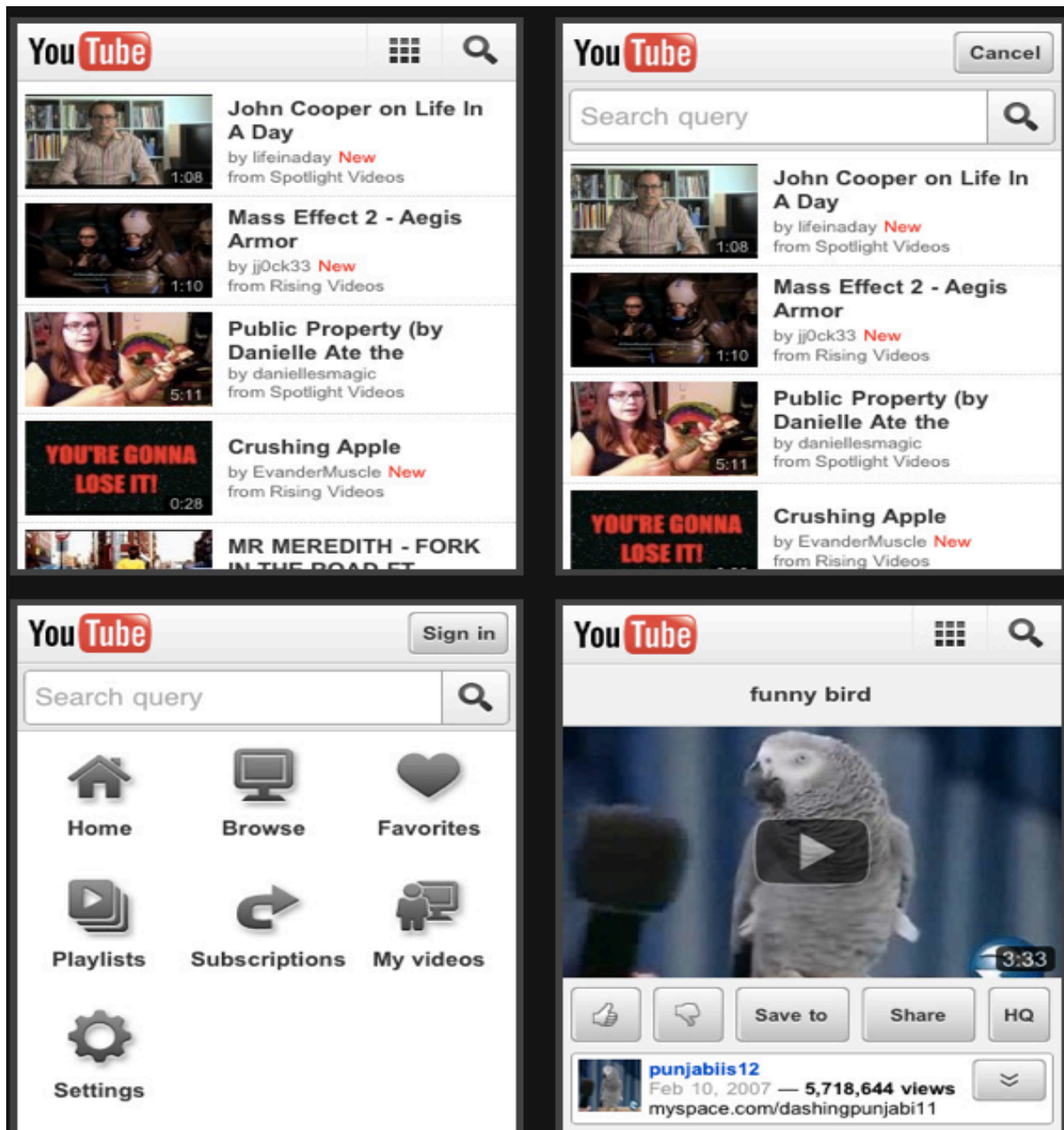


**No Matter What!: 9 Steps to Living the Life You Love (Kindle Edition)**  
Lisa Nichols (Author)  
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NPR.org, January 20, 2009 · *The following is Barack Obama's inaugural address, as prepared for delivery.*

My fellow citizens:

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


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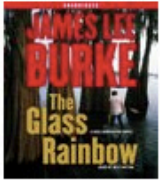


By Bob Mondello

All Things Considered, January 11, 2009 · It happens every year. Awards season rolls

<http://m.npr.org/>

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Simon Pulse, July 2010  
ISBN-10: 1442408634  
ISBN-13: 9781442408630

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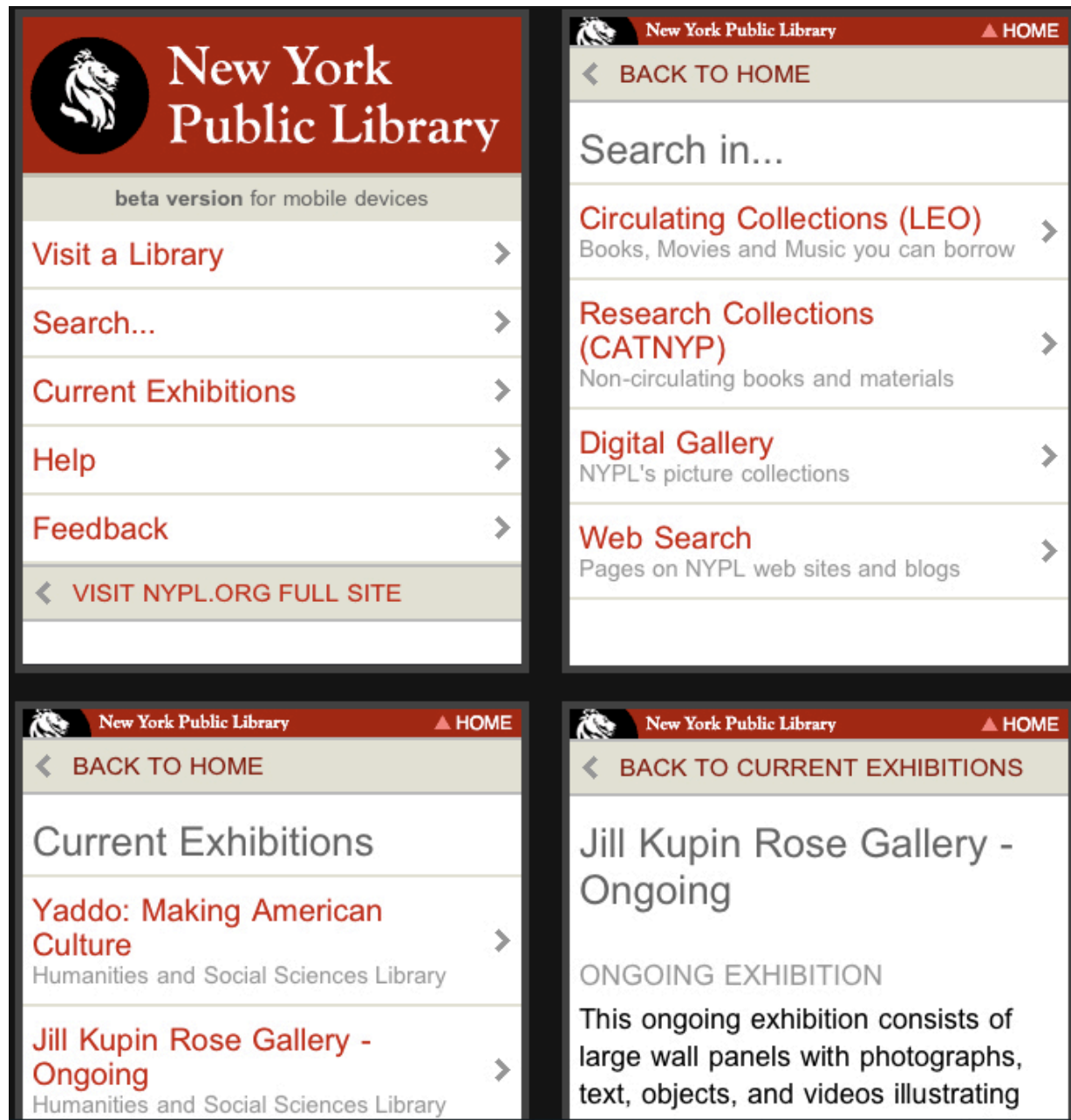
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<http://m.nypl.org>

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qrcode generator barcode ...

<http://m.delicious.com/>

# Mobile App Design, Case Studies

## **Demos:**

MSU Historical Photos Walking tour app  
<http://arc.lib.montana.edu/msu-photos/app/>

Terra - [lifeonterra.com](http://lifeonterra.com)  
Terra mobile - [lifeonterra.com/m/](http://lifeonterra.com/m/)

MSU Extension - [arc.lib.montana.edu/msu-extension/](http://arc.lib.montana.edu/msu-extension/)  
MSU Extension mobile - [arc.lib.montana.edu/msu-extension/m/](http://arc.lib.montana.edu/msu-extension/m/)

## **Downloads:**

<http://www.lib.montana.edu/~jason/files.php>

## 2 live mobile web apps...

Terra - [lifeonterra.com](http://lifeonterra.com)  
becomes

Terra mobile - [lifeonterra.com/m/](http://lifeonterra.com/m/)

MSU Libraries - [www.lib.montana.edu](http://www.lib.montana.edu)  
becomes

MSU Libraries mobile – [www.lib.montana.edu/m/](http://www.lib.montana.edu/m/)

terra

TERRA 537: A Winning Scenario

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PLAY SHORT TRAILER

0000 / 12:16

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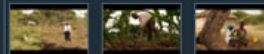
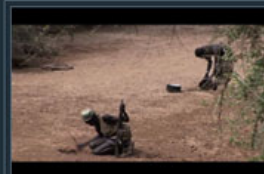
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TERRA 537: A Winning Scenario

13:15mins | 2010-07-22 | Produced by: Jenny Sharman



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 for improved crop production. Soil health is critical in a changing climate and this film explores the importance of protecting Kenyan soil for future generations.

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TERRA 719

# TRUST Pennsylvania

produced by WITNESS



Ashley, an 18-year old from western Pennsylvania, is asking the government to come up with a climate recovery plan that does not destroy our single most essential resource...the atmosphere. **Check it out.**



Welcome to TERRA: the nature of our world

Recent Episodes



**TERRA 719: TRUST Pennsylvania**

Produced by WITNESS



**TERRA 718: Passing It Down**

Produced by Christopher J. Carter



**TERRA 717: Whiteout**

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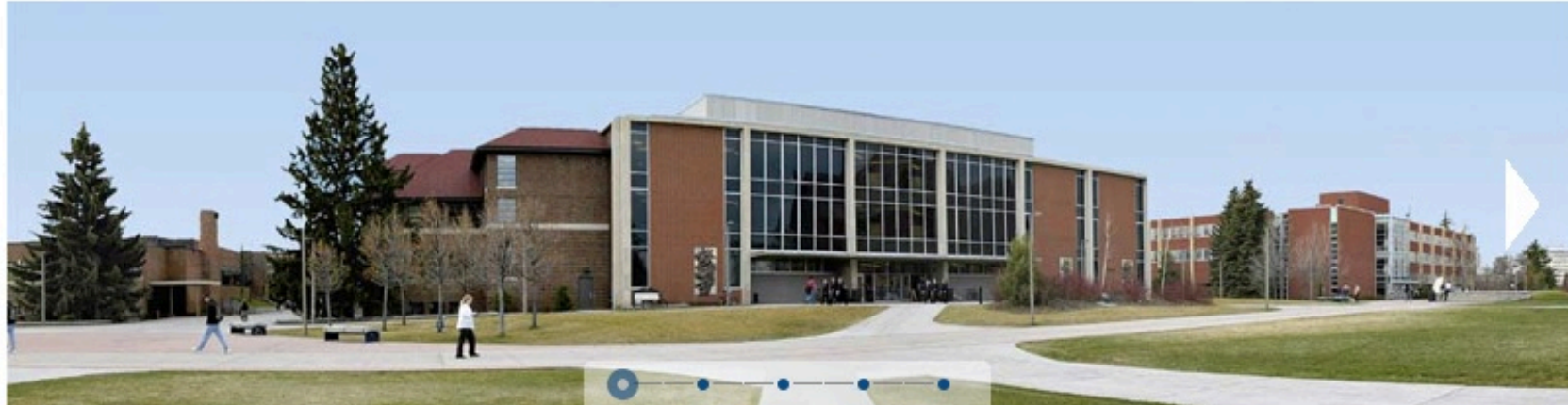


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Find research materials, including articles, books, databases, journals, and course reserves

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Request resources and services, including group study rooms, laptops, documents, and books

## INTERACT

Learn about the library and meet with us for research assistance, writing help, and tech support

Events Hours Twitter

10/15 Library Workshop: Google Search Secrets

10/16 Library Workshop: Word 2010 Tips & Tricks

10/23 Library Workshop: Keyboard Shortcuts: Let your f

Database trial: IBISWorld Industry Research Reports



# 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 essential

core

simple

# Exercise

- Pick a web site
- Define primary mobile actions
- Choose mobile entry points (links)
- What do library patrons want to do with library services in the mobile setting?

# Mobile Analytics

- Web metrics and statistics
- Mobile search logs

“Data is your friend. Take out the guesswork.”

Grolsch

grolsch.com

SHARE

Tweet 8 Like 140

No one's ever changed the world by being boring

This isn't just a story about beer  
This is our story of interesting choices

Schroll Down

**WTF?!!!**

Name	Method	Status	Type	Initiator	Size	Time	Timeline
f2.png	GET	200	image/png	jQuery-1.7.1.min...	72.07KB	58.02s	
f3.png	GET	200	image/png	jQuery-1.7.1.min...	70.66KB	58.96s	
f4.png	GET	200	image/png	jQuery-1.7.1.min...	68.74KB	59.05s	
f5.png	GET	200	image/png	jQuery-1.7.1.min...	63.82KB	59.11s	
f6.png	GET	200	image/png	jQuery-1.7.1.min...	27.56KB	59.21s	
facebook.png	GET	200	image/png	jQuery-1.7.1.min...	22.06KB	59.30s	

388 requests | 24.29MB transferred | 2.1min (onload: 49.60s, DOMContentLoaded: 1.23s)

Documents Stylesheets Images Scripts XHR Fonts WebSockets Other

"All sizes | Enough of this silliness | Flickr - Photo Sharing!" Last modified 10/15/2012 12:45:55. <http://www.flickr.com/photos/philhawksworth/7562460356/sizes//in/photostream/> (accessed 10/15/2012).

# Mobile Optimization

- Minify scripts, html, css ...
- Reduce HTTP requests
- Compress files with gzip
- Cache static resources

“Speed matters.”

<https://developers.google.com/speed/pagespeed/insights>

# 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](http://m.flickr.com)
- "Be Mobile" with User Agent Switcher
  - <https://addons.mozilla.org/en-US/firefox/addon/59/>

<http://woorkup.com/2010/01/10/best-practices-to-develop-perfect-websites-for-iphone-and-mobile-devices/>

# 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
  - Limit HTML pages to 25KB to allow for cacheing
- "Minify" your scripts and CSS
  - JSLint, CleanCSS
- Take Advantage of HTML5, CSS3
  - `<!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
  - geolocation
  - offline storage
  - 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:**

Responsive Design Template (custom)

[www.lib.montana.edu/~jason/files/responsive-design/](http://www.lib.montana.edu/~jason/files/responsive-design/)

Mobile Template (jQuery Mobile)

[www.lib.montana.edu/~jason/files/touch-jquery/](http://www.lib.montana.edu/~jason/files/touch-jquery/)

## **Code Samples and Downloads:**

[www.lib.montana.edu/~jason/files.php](http://www.lib.montana.edu/~jason/files.php)

# Mobile Validators

- W3C Mobile Site Validator
  - <http://validator.w3.org/mobile>
- Mobile App Validator from mobiforge
  - [http://mobiready.com/launch.jsp?locale=en\\_EN#fragment-1](http://mobiready.com/launch.jsp?locale=en_EN#fragment-1)

# Mobile Development in Libraries

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

\* See Mobile Development - Library Success Wiki

[http://www.libsuccess.org/index.php?title=M-Libraries#Mobile\\_applications](http://www.libsuccess.org/index.php?title=M-Libraries#Mobile_applications)

# Getting Started, Learning More

- Don't Ignore Frameworks and Libraries
  - jQuery, iUI, Sencha Touch, PhoneGap
- MIT App Inventor
  - <http://appinventor.mit.edu/>
- Mobile Web Apps - Apple
  - <http://developer.apple.com/safari/>
- Mobile Web App Design: Getting Started
  - Michael Doran, Code4Lib 2010
  - <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

<http://www.eweek.com/c/a/Midmarket/Google-CEO-Eric-Schmidt-at-MWC-Mobile-First-694942/>

11 **12** 13 14 15 16 17 18 19 20

**THE TECH SET**

Ellyssa Kroski, Series Editor

#12

# Building Mobile Library Applications



Jason A. Clark

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