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Responsive Web Design: A Future-Friendly Web Strategy

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Responsive Web Design

A Future-Friendly Web Strategy

Christine Tawatao

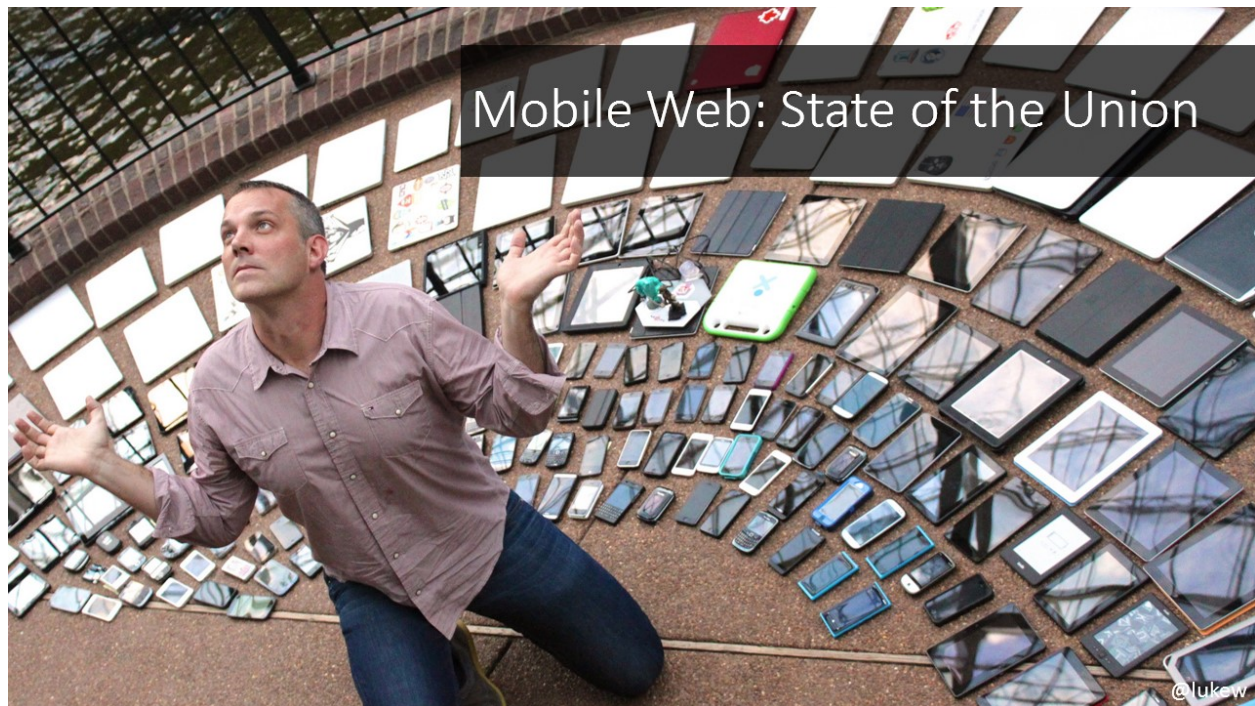
Systems Librarian: Web Development/Support

University of Washington Libraries



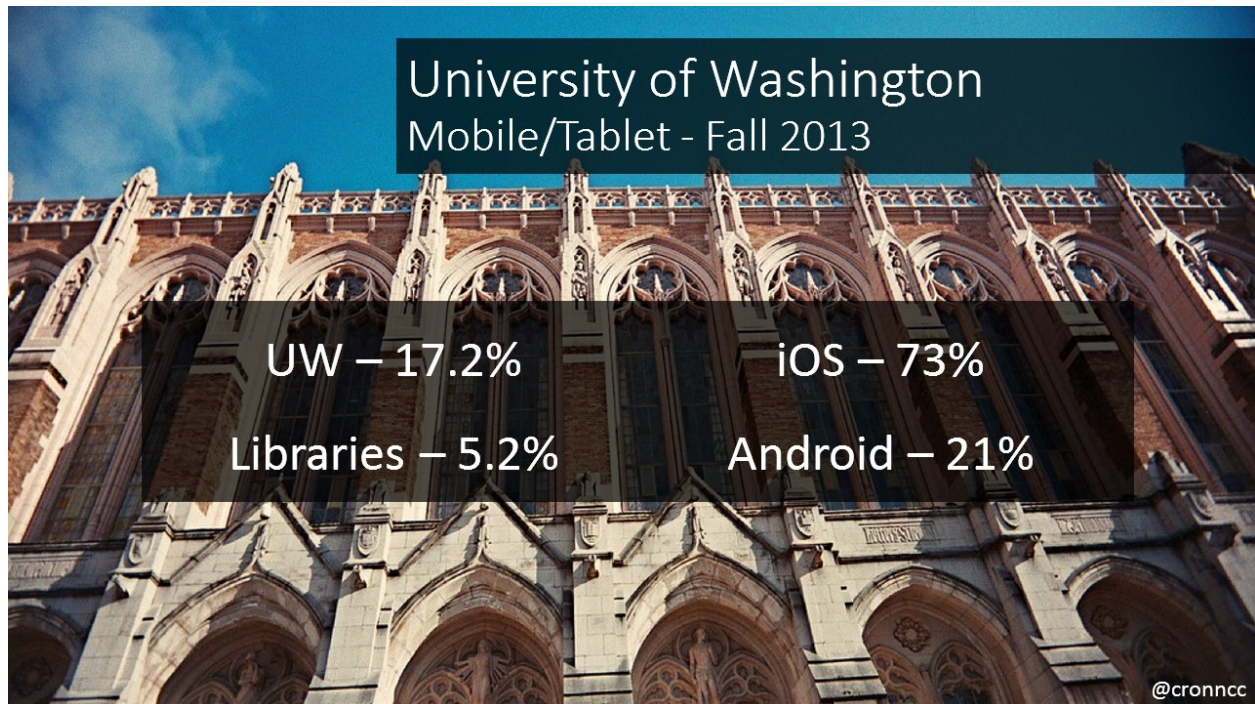
In just a few short years, the range of web-enabled devices on our campuses has exploded. The [University of Washington Libraries](#) has adopted responsive web design (RWD) as a way to provide our content on whatever device comes our way. Learn why this is a good strategy for us, what tradeoffs are involved, why concise content is more important than ever, and strategies for conducting user research/testing to inform every step in the design process.

Mobile Web: State of the Union



Before I jump into RWD, let's fire up the DeLorean and travel back in time. Remember 2004? Outkast was singing that earworm "Hey Ya!" on the radio, John Kerry lost to George W., and laptop computers were on the rise. Lucky for us web designers though, screen resolutions remained a fairly reliable 1024x768 or 800x600. Sure we had to deal with the nightmare that was IE6, but web standards were really starting to gain traction. Things were looking up for web designers and web developers.

But then: the iPhone hit the market in 2007 and the mobile explosion began soon afterward.



This is the breakdown of mobile devices (phone & tablet) hitting our websites at the University of Washington. The percentage of mobile hitting the libraries site may be lower due to a number of reasons that we would like to do more research on, but possibly attributed to the number of Libraries-owned computers that default to the Libraries website on start up. We also know that laptop/desktop are still the preferred device for doing research.

However in the past year the number of mobile devices hitting our site has doubled. [PEW Internet Research](#) shows that teens are adopting mobile and tablet technology at a growing rate.

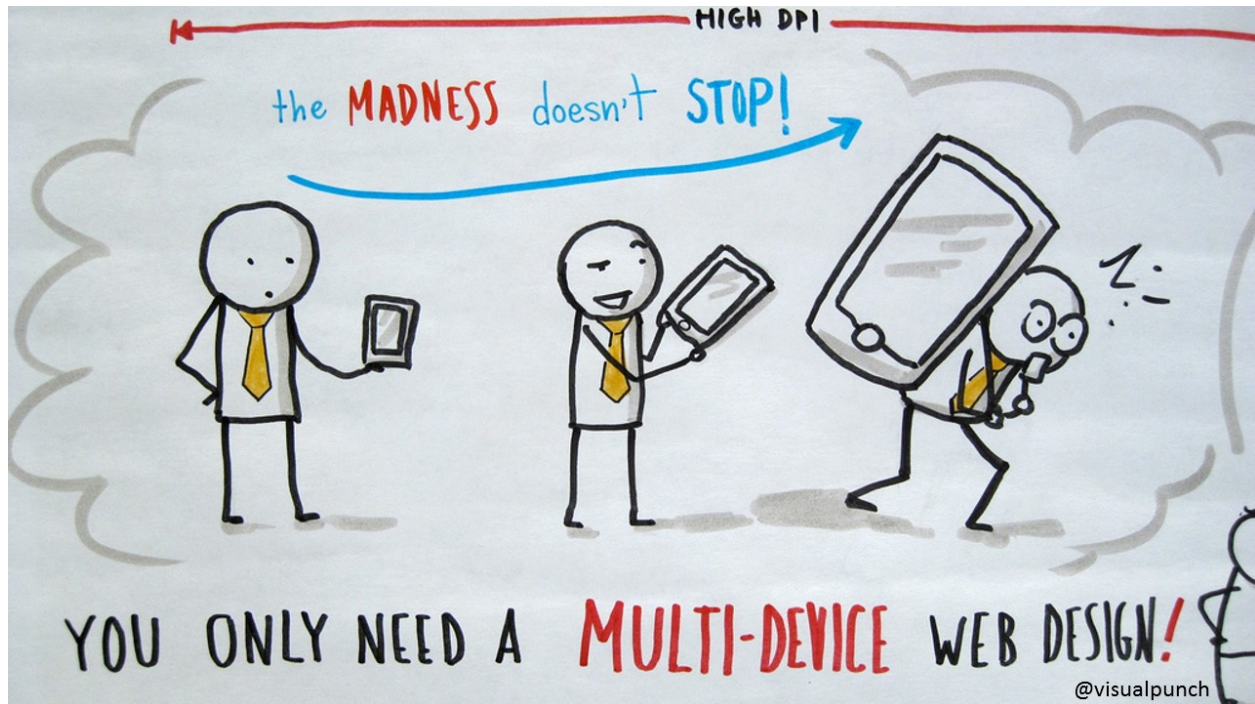
With more and more mobile devices coming to campus everyday, how do we support these users?

RWD: A future-friendly approach



[Leading web developers know](#) and [new research from OSU Libraries](#) shows that we can no longer assume that mobile users have different needs than desktop users, so having a condensed mobile website or app is no longer going to cut it. A website designed for a 1024x800 screen resolution is also not easy to use on a much smaller screen. HTML5/CSS3 + responsive javascript frameworks have made the move to RWD easier.

At the [University of Washington](#), our campus has been moving over to responsive web design across most departments for the past 2 years. Most departments are run independently, so this is not a requirement, but staff are adopting the approach as a way of providing consistency across campus as well.



At the Libraries, RWD was appealing for a number of reasons: consistency for users, not wanting to maintain 2 sets of content for a separate mobile site and full website, having a small staff of one librarian/front-end developer and a half-time usability engineer managing the public site, dealing with a lot of content and system changes coming down the pike from our migration to the shared ILS through the Orbis Cascade Alliance.



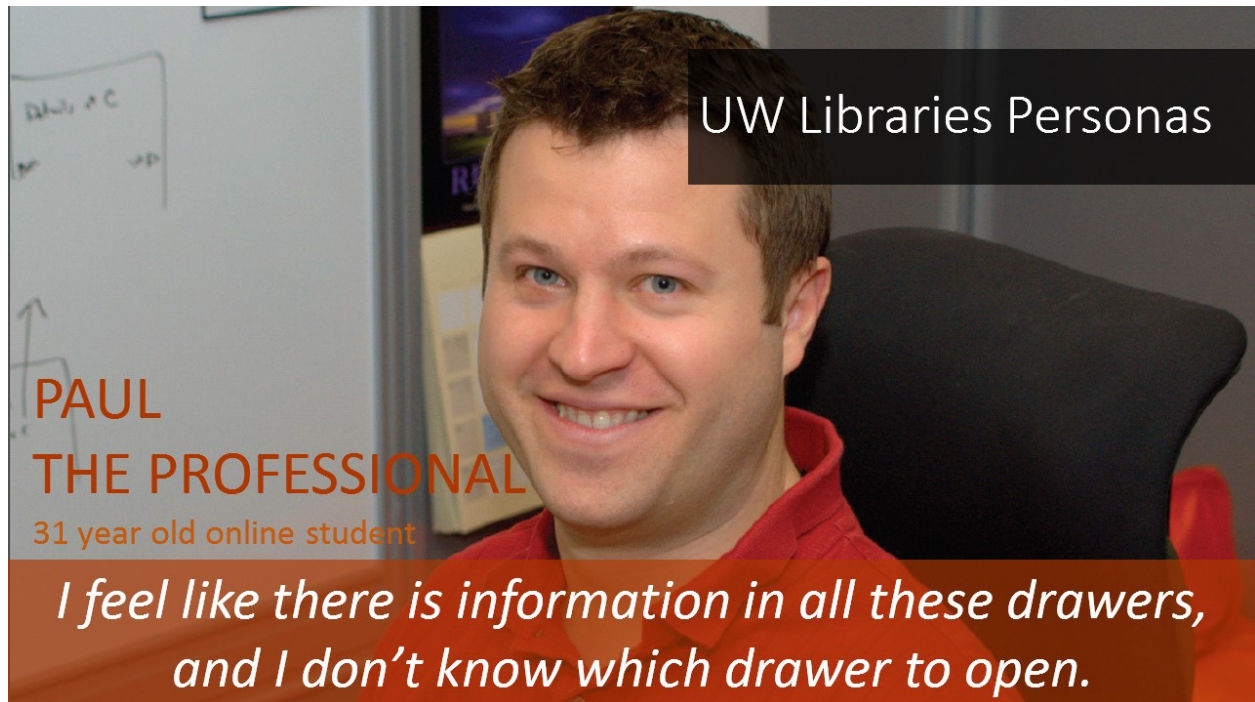
Why is responsive web design a [future friendly](#) approach? Even if Apple decides to come out with an iPhone Gargantuan, or Facebook decides to launch it's own operating system, our websites are not dependent on a specific size or OS or device-sniffing techniques. They flow within the sizes available and will condense content or menus when necessary.

While the actual implementation is not future-*proof* (we're always going to have to adjust as new techniques and browser support changes--and hopefully streamlines--how we build things), the thinking behind it is trying to be. We're not there yet, but here's what we're striving for:

- to approach our website as a fluid collection of content that can be structured enough to be repurposed within an intelligent CMS:
read more about [COPE: Create Once, Publish Everywhere](#)--an approach they use at National Public Radio
- written from [a mobile-first approach](#), [a strategy that helps users on all devices](#)
- [be organized and understand what kind of info blobs](#) we're handing our users
- adapt content to the thing (or user) that is trying to use it
- be willing to let go of control and be flexible for the next new thing

This is the future friendly way of thinking. Note that these things require us to begin with a new philosophy to how we build our website, and most it has nothing to do with the kind of platform or framework we use to build it, it's more about the content and the users. We have long approached our website as the end result that we see when we sit at our desks. We now need to approach it as content that goes into a system that is designed to help our users.

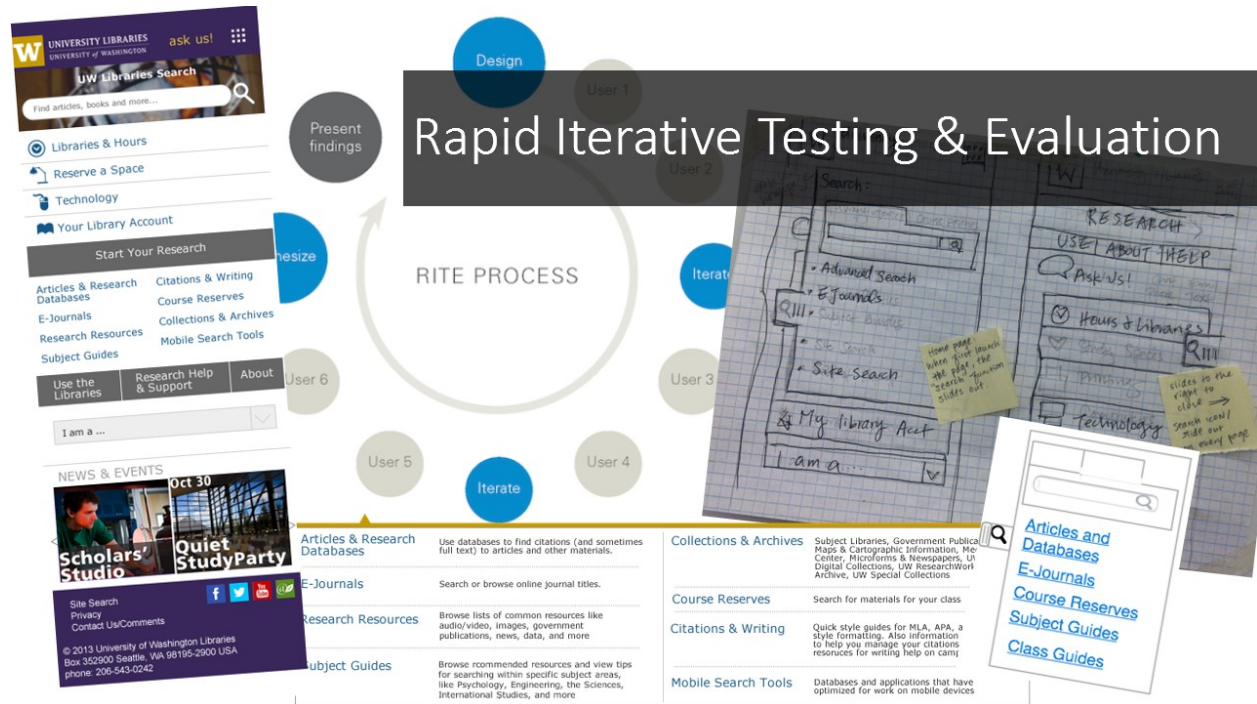
Mobile-First, Iterative Design, & Mobile Usability



And so with the decision to move to responsive design made, we began redesigning our website theme and information architecture. The process was significantly different from the redesign we did in 2008: we did a lot of user research beforehand, we designed with a mobile-first approach, and we used the RITE method to iterate through designs and work out problems before we launched.

Fall 2012 - Winter 2013:

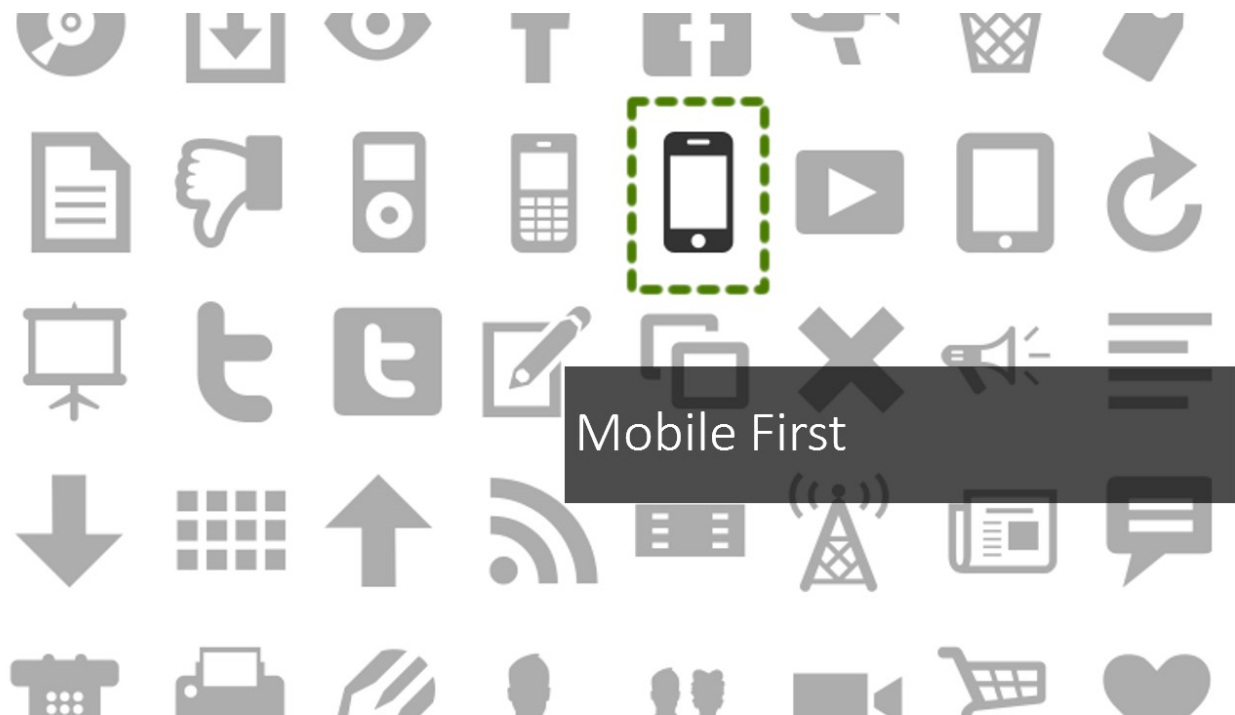
- user research: updated personas to include technology habits as well as info needs/behavior. Did this by reviewing the literature and looking at local and national surveys to piece together habits typical of the various constituents of our user community.
- card sorting of major website content areas
- testing major areas we wanted to change, like our subject guides main page layout
- X/O exercise with the current homepage
- interviews with users on how they use mobile devices and the libraries current website
- mobile usability research - best practices of mobile design, touch device considerations
- took data from the card sort, and asked librarians and users prioritize elements which would then determine relative size and/or placement on the homepage (aka attention map - the more important something is, the bigger it is or the more prominent its placement on a page)
- looked at other library websites and UW websites and noted UI elements we liked



Spring 2013:

We used the RITE method to come up with the design of the homepage and site design. The idea is that you start out with a design that is more user-centered and work out the kinks of your design during your design cycle and not after launch. This was our process:

- We drew sketches of a mobile homepage and a mobile header in whatever medium we felt like using (paper, graphic design software, wireframing software) of various website layouts based on IA & attention map. We ended up with 4 drastically different complete designs of a mobile homepage and a few additional UI elements for various menus.



- We showed these to 2-3 users and asked them to interact with them as if they were on a mobile device, in some cases we put into a mobile device "sleigh" (paper cut out of a mobile phone). With electronically drafted designs, we were able to pull the graphic mockups on an actual mobile device.

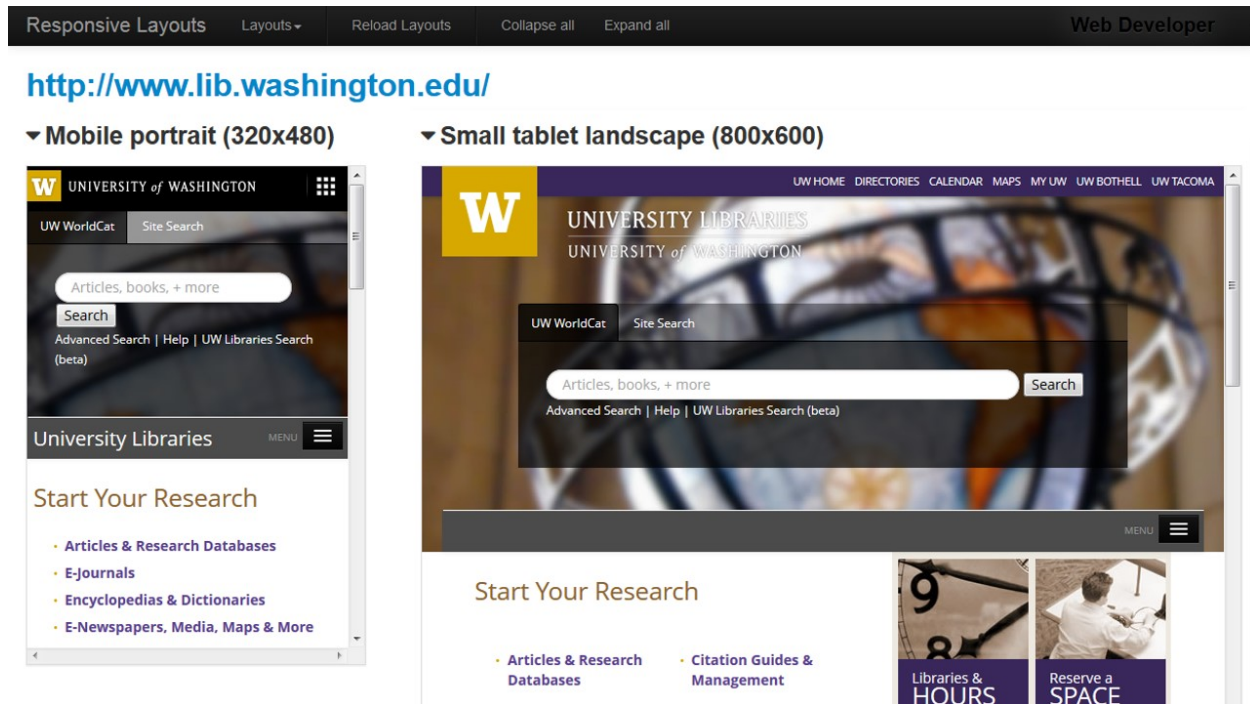


- We recorded these sessions in our usability lab using a document camera connected to a computer running Morae (usability testing software).
- We would discard elements that were clearly problematic for users (for example, in one design we had a global nav bar that would be pulled out from the right side with a small tab that floated on the edge of the screen: users thought this placement was not intuitive).
- Preferred elements were combined until we had a design that combined them all. Then we began to develop what elements would carry to the rest of the site (header/footer), and the style of the rest of the site.

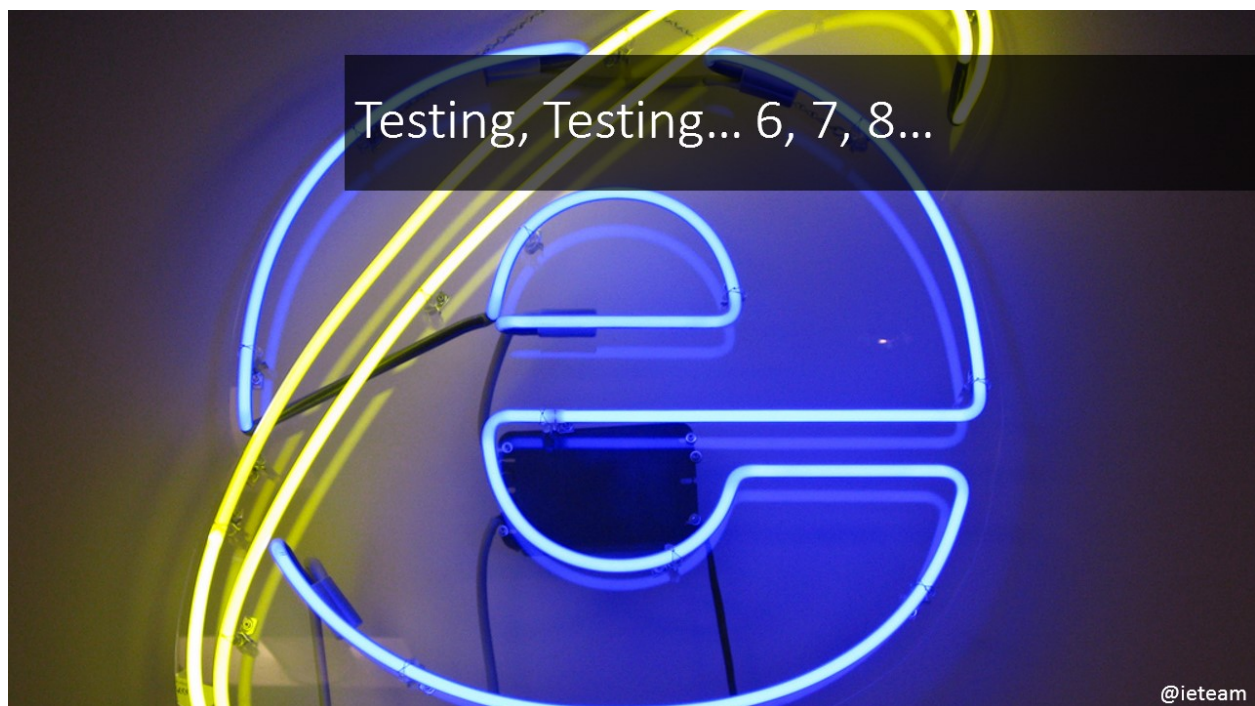


Summer 2013: build it.

Approaching the build cycle, I was confident--I had a site that looked and worked very similarly to our main campus website. I was using Bootstrap, a javascript framework that has been used to build thousands of new responsive websites. I was using HTML5 and CSS3, new web standards! I could build it, squeeze our content into it, and boom: unicorns and rainbows.



What I didn't take into account right away was that I was layering a theme into a CMS (Plone 4.2) with its own set of js/css which would proceed to break a few things. I was also working with a **new** set of standards, but still supporting a whole bunch of **old** browsers that didn't know what to do with CSS3, which meant some additional workarounds to get them to support media queries--the basis of bootstrap and responsive web design.



As I fixed things or added workarounds however, I then ran into issues testing and fixing the display across different browsers and platforms. And I was no longer dealing with just IE vs FF as I had back in 2008. I was dealing with modern IE vs IE8 and older and supporting media queries. I had a slew of browsers, platforms, and screensizes to test on. The lesson to learn: build early, test often--and give yourself enough time to do it.

We launched the site just in time for the beginning of the 2013 academic school year and have received a lot of positive feedback on the new design.



Despite the importance of leading our new web strategy with content and users, we made the decision to go ahead and move our current site content into a responsive design without forcing them to rework it for mobile (mobile first approach). We did not have the luxury of having a preview site available to see content in the new template and then rework. Our approach now is to adjust content to work within the new set up—it helps authors see immediately the context it is being used in, and is more of a motivator to know what problems your content has currently--mostly overly wordy pages. Our goal now is to streamline content and make them more usable across all devices.

Learning to be Flexible



We understand that our website is a work in progress, and always will be.



What Will the Future Bring?

@samsungtomorrow

Further Reading:

- **Why We Shouldn't Make Separate Mobile Websites**
<http://mobile.smashingmagazine.com/2012/04/19/why-we-shouldnt-make-separate-mobile-websites/>
- **Josh Clark: why Jakob Nielsen is wrong on mobile**
<http://www.creativebloq.com/josh-clark-why-jakob-nielsen-wrong-mobile-4124168>
- **That Was Then, This Is Now: Replacing the Mobile-Optimized Site with Responsive Design** - Laurie M. Bridges, Hannah Gashco Rempel – OSU Libraries
<http://napoleon.bc.edu/ojs/index.php/ital/article/view/4636>



These slides are also available at

<http://www.slideshare.net/tawataoc/responsive-web-design-a-future-friendly-web-strategy-online-northwest-2014>