Web Publishers Group

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Responsive Web Design
Mobilising the Internet

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Responsive web design…

• Designing a website in a manner that helps the layout to change according to the user’s screen resolution – regardless of the device

• The auto simplification of advanced multi-column layouts on wide screens to a minimum of one or two column layouts on narrow screens
Planning for the future…

We’re now faced with a browser landscape that’s become increasingly untethered from the desktop, with devices becoming smaller and larger simultaneously. Small-screen devices are estimated to become the dominant form of web access in a matter of years.

The future is now…

Mobile phones will overtake PCs as the most common Web access devices worldwide by 2013, according to a new forecast by research firm Gartner. That's an even more aggressive outlook than Morgan Stanley's projection that the mobile Web will outstrip the desktop Web in five years.

Mark Walsh, “Gartner: Mobile To Outpace Desktop Web By 2013”
http://www.mediapost.com/publications/article/120590
Smartphones overtake PCs 2011

• Total annual global shipments of smart phones exceeded those of client PCs (including pads) for the first time in 2011
• 158.5 million smartphones in Q4 2011
• 120.2 million PCs in Q4 2011

• 2012?
  488 million smartphones
  415 million PCs

Smartphones

- 13.2% of the world’s 6.1 billion cellphones are smartphones. 30% in the Germany, UK and United States. Over 50% in Sweden and Finland
- 55% of Twitter’s traffic comes from mobile devices
- 33% of Facebook updates come from mobile devices


http://lukew.com/ff/entry.asp?1450
PayPal

• Payments via mobile:

  - 2009 $141M
  - 2010 $750M

• 2011 $4,000,000,000

http://venturebeat.com/2012/01/10/paypals-mobile-payments-4b-2011/
Old ideas are new again…

Most sites on the web are not built with specific mobile use-cases in mind. However, millions of people access these sites every day through mobile devices. They access a “normal” (whatever that means) website through their “mobile” device… It seems like the Mobile Web allows us to revisit all of the talk of inclusion, progressive enhancement, and accessibility from years ago.

Stephen Hay, “There is no Mobile Web”
http://www.the-haystack.com/2011/01/07/there-is-no-mobile-web/
Design for adaptability…

The continued introduction and adoption of more and more mobile devices is what will make 2012 the year of the responsive web site. Web designers and developers will move to the use of fluid layouts instead fixed width, and media queries will find their way into many more stylesheets – allowing more sites to easily be viewed across multiple screens sizes and devices.

Design for context…

Since mobile devices are (just about) always with their owners, time and location play a big role in defining their context of use. And because mobile devices have the ability to talk, text, IM, and email people (plus an address book!), social rounds out the triumvirate of mobile context. When you design for mobile you are designing something that can be used anywhere, anytime, and be instantly shared/discussed with other people.

Change is inevitable…

We can quarantine the mobile experience on separate subdomains, spaces distinct and separate from “the non-iPhone website.” But what’s next? An iPad website? An N90 website? Can we really continue to commit to supporting each new user agent with its own bespoke experience?

*Ethan Marcotte, “Responsive Web Design”*

http://www.alistapart.com/articles/responsive-web-design/
Embrace individuality…

The control which designers know in the print medium, and often desire in the web medium, is simply a function of the limitation of the printed page. We should embrace the fact that the web doesn’t have the same constraints, and design for this flexibility. But first, we must “accept the ebb and flow of things.”

John Allsopp, “A Dao of Web Design”
http://www.alistapart.com/articles/dao/
Throw off the yoke…

When a new medium borrows from an existing one, some of what it borrows makes sense, but much of the borrowing is thoughtless, “ritual”, and often constrains the new medium.

John Allsopp, “A Dao of Web Design”
http://www.alistapart.com/articles/dao/
Design responsively…

Web design is about asking the right questions. And really, that’s what responsive web design is: a possible solution, a way to more fully design for the web’s inherent flexibility… If we’re willing to research the needs of our users, and apply those ingredients carefully, then responsive web design is a powerful approach indeed.

Ethan Marcotte, “Responsive Web Design”
http://www.alistapart.com/articles/responsive-web-design/
Responsive web design… (reprise)

• Designing a website in a manner that helps the layout to change according to the user’s screen resolution – regardless of the device

• The auto simplification of advanced multi-column layouts on wide screens to a minimum of one or two column layouts on narrow screens
50 Examples and Best Practices

http://designmodo.com/responsive-design-examples/
http://seesparkbox.com/
http://earthhour.fr/
http://www.bostonglobe.com/
http://asuonline.asu.edu/
How does it work?

- A flexible grid
- Flexible images and media
- CSS3 media queries
Flexible grid

• A flexible grid-based layout is one of the cornerstones of responsive design.

• The term “grid” is used rather freely

• Stop using pixel-based layouts and start using percentages or the *em* for sizing

• By basing text sizes, widths and margins on percentages or on the *em* you can turn a fixed size into a relative size.

• You’ll need to do a little math to achieve a flexible grid and text size system. But the formula for calculating the *em* is very simple:
Flexible grid (cont’d)

- Remember… $\text{target \ ÷ context} = \text{result}$

Let’s say the normal context for the body font size is 16 pixels. If the designer specifies that the H1 should be 24 pixels, you can calculate the following:

$(\text{target}) \ 24 \ ÷ (\text{context}) \ 16 = 1.5$

This results in the following CSS style:

```css
h1{ font-size: 1.5em; }
```
Flexible images

• Adapt your images or other media to load differently depending on the device, either by scaling or by using the CSS overflow property

• You can set the media element’s max-width to 100 percent, and the browser will make the image shrink and expand depending on its container

```css
img, object { max-width: 100%; }
```

• applying `overflow: hidden` allows you to crop images dynamically
CSS3 media queries

- You can use media queries to scope styles to specific capabilities, applying different styles based on the capabilities that match your query.
- You can even combine queries that test for several features by using semantic operators such as AND and NOT.
- Features include width, height, max-width, max-height, device-height, orientation, aspect-ratio, resolution and more.
- There are three ways to implement media queries.
CSS3 media queries (cont’d)

• 1. Use the @import rule to import styles from other style sheets:

```css
@import url(style600min.css) screen and (min-width: 600px);
```
• 2. Put media queries directly in the style sheet:

```css
#nav { float: right; }
#nav ul { list-style: none; }
@media screen and (min-width: 400px) and (orientation: portrait){
    #nav li { float: right; margin: 0 0 0 .5em; border:1px solid #000000; }
}
@media screen and (min-width: 800px) {
    #nav { width: 200px; }
    #nav li { float: left; margin: 0 0 0 .5em; border: none; }
}
```
CSS3 media queries (cont’d)

3. Include a query in a linked style sheet’s media attribute:

```html
<link rel="stylesheet" type="text/css" media="screen and (max-device-width: 800px)" href="style800.css"/>
```

Because of the (cascading) nature of CSS, default styles are defined at the top with the media query matching rules and styles below. Styles defined at the top will be cascaded to the matching styles in the rule, or even completely overwritten.
Old and busted…

• Legacy browser support?
• Javascript solutions to replace media queries and to refine scaled images

• **STOP** holding back the future…

_Those that cry, “it can’t be done!” should make way for those of us who are busy doing it._
Project Strategy

Discovery
- Establish a focus group
  1. Project schedule
  2. Requirements document
  3. Communications strategy

Design
Development
Deployment
What does all this mean?

- Responsive Web Design + HTML 5 + CSS 3
- Major changes – all behind the scenes
- Some existing styles will change
- Some new styles will be introduced
- Templates will work the same as now (mostly)
- Existing sites will essentially stay the same
- Opportunities for new home page layouts
Status quo…

• In the past we’ve looked at what other universities are doing on the web (ie Oxford, Stanford, Yale, Harvard) and then adopted the best ideas

• The *Web Transformation Project* has been preparing the university’s web presence for a major jump in technology and design

• We can become a leader rather than a follower
Further reading…

• A Dao of Web Design (John Allsopp) http://www.alistapart.com/articles/dao/
• Responsive Web Design (Ethan Marcotte) http://www.alistapart.com/articles/responsive-web-design/
• Responsive Web Design http://www.sitepoint.com/responsive-web-design/#fbid=nmtfiP3zMHv
• There Is No Mobile Web (Jeremy Keith) http://goo.gl/pFCX7
• For a Future-Friendly Web http://goo.gl/BGcHn
• Structured Content First (Stephen Hay) http://goo.gl/HI6RE
• Pragmatic responsive design http://goo.gl/d2daW
• Responsive by default http://goo.gl/lil35
• A Richer Canvas http://goo.gl/WDxC
• Responsive Advertising http://goo.gl/MGhGo
• You Say Responsive, I Say Adaptive http://goo.gl/tA1zJ
• A Responsive Design Approach for Complex, Multicolumn Data Tables http://goo.gl/n8S1q
• Responsive Data Table Roundup http://goo.gl/3GVoX
• Debugging CSS Media Queries http://goo.gl/5eawl
• Convert a Menu to a Dropdown for Small Screens http://goo.gl/KDE9t
• Mobile Content: If in Doubt, Leave It Out http://www.useit.com/alertbox/mobile-writing.html

• The ultimate responsive web design roundup http://www.webdesignerdepot.com/2011/09/the-ultimate-responsive-web-design-roundup/
Questions?

• Remember: Web design and development is an evolving and sometimes experiential process

• We’re implementing these changes based on discoveries from continuous improvement reviews, suggestions from other web developers and the considered opinion of industry best practice

• email webstyle@anu.edu.au
What are you doing?

• Lots of fantastic and interesting stuff goes on in the web space on campus, but does anyone know about it?
Open Q&A

• Got a burning web related question?
• Ask away and see what you can find out
• No question is ever too stupid, but not asking the question is!
<applause>

Thanks for coming!

</applause>