

Designing for diverse devices

Dr. Andres Baravalle



Outline

- Web 2.0
- Designing for diverse devices



Web 2.0



Web 2.0

- Web 2.0 is one of neologisms commonly in use in the Web community
- According to Tim O'Reilly, Web 2.0 refers to:
 - "the business revolution in the computer industry caused by the move to the internet as platform, and an attempt to understand the rules for success on that new platform"

(http://radar.oreilly.com/archives/2006/12/web_20_compact.html).



Web 2.0 technologies

- Technologies such as
 - Ajax (Asynchronous JavaScript and XML)
 - RSS (an XML dialect used for content syndication)
 - Atom (another XML dialect used for content syndication)
 - SOAP (an XML dialect used for message exchange)
- are all typically associated with Web 2.0.



Web 2.0 (2)

- The idea of Web 2.0 is as an incremental step from Web 1.0.
 - It is based on Web 1.0, but with something more
- The concept of '**internet as a platform**' implies that Web 2.0 is based on the Web on its own as place where applications run:
 - The browser allows applications to run on any host operating system.
 - In the Web 2.0 strategy, **we move from writing a version of software for every operating system that has to be supported, to writing a Web application that will automatically run on any operating system** where you can run a suitable browser.



Web 2.0: key features

- **User classification** of information (e.g. Flickr)
- **Dynamic content**, responsive to user input (e.g. Ajax interfaces, Google Maps)
- **Long tail** - profit is realized through subscriptions rather than one-time purchase (e.g. Netflix)
- **User Participation** - site users add content for others to see (e.g. Wikipedia, Amazon reviews)
- **Focus on digital resources** and services (Google Apps, iTunes store)
- **Content reuse** – through licenses or APIs (e.g. OpenID)



Designing for diverse devices



Small screen devices

- There is a growing number of people using small screen devices to browse the Internet
- Browsers of these devices have typically been designed to handle websites without (excessive) problems by shrinking a standard website to fit the viewable area (viewport) of the device.
 - The user then zooms in on the area of content they are interested in



- It works – but you can and should develop better interfaces



Mobile version?

- Where the budget allows for it, and the situation necessitates it, a truly "mobile" version of a website could be the preferred option.
 - This could serve up different **content, design, and interaction** based upon the **device, location, connection speed** and other **variables** including the technical capabilities of the device.



Papa Johns

- Let's compare the next two layouts – the first is the standard Papa Johns web site – and the second is a screenshot of the website as seen on a mobile phone



Papa Johns' web site

PAPA JOHNS
Better Ingredients.
Better Pizza.

"We make our pizza with 100% fresh dough, 100% of the time."

John N. Schnatter
'Papa' John Schnatter,
Founder of Papa John's

Home Stores Offers Papa Rewards Welcome back Andrea [edit profile](#) | [sign out](#) Basket: 0 items

NEW PIZZA *Spicy* **ITALIAN**

GO SPICY FOR JUST £10.99*
MEDIUM PIZZA
Code: AAPJLT01

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Mon - Thurs: 11:00 - 01:00
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On: 11st March 2014
From: Wanstead
Value: £0.00

[Order again](#)

*Medium pizzas only. Cannot be used in conjunction with any other offers. Offer code: AAPJLT01. Terms and conditions apply. See online for details.

25% OFF WHEN YOU SPEND £25 OR MORE ONLINE ONLY
Terms and conditions apply. Code PIFES25OFF

NEW EXCLUSIVE DEALS FOR FANS...
BECOME A FAN ON FACEBOOK!

WIN TICKETS TO THE PLAY-OFFS AT WEMBLEY

MOBILE WEB ORDERING NOW AVAILABLE

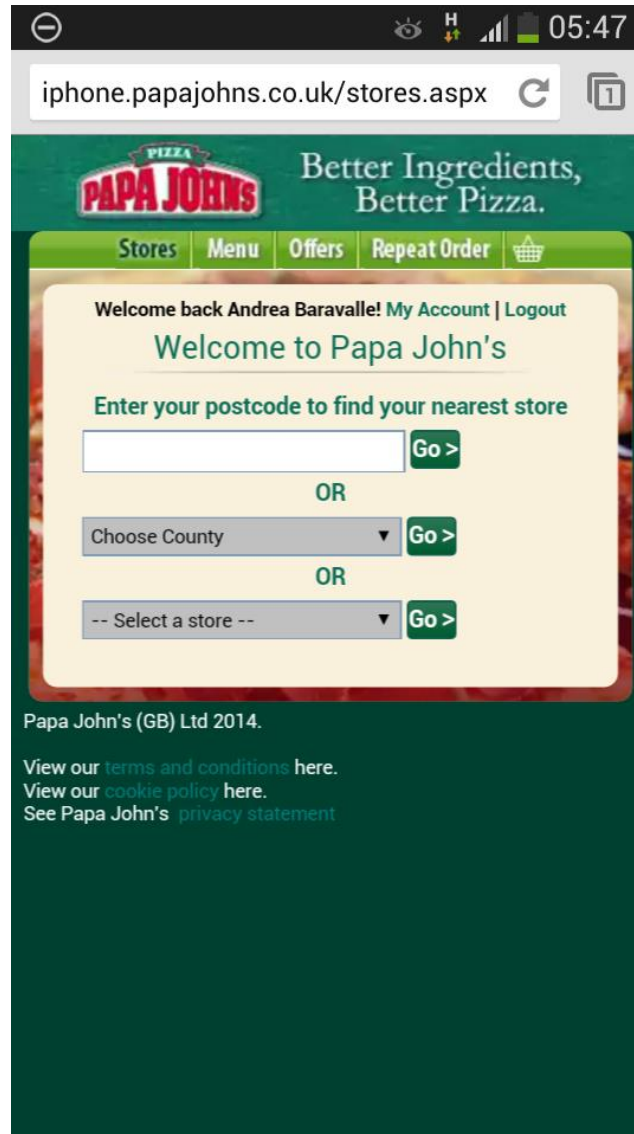
Find us on Facebook

twitter FOLLOW US

Become a Papa John's FRANCHISEE



Papa John's' mobile site



Differences

- Elements of less importance are hidden
- Navigation buttons altered to accommodate finger presses (mouse clicks are more precise)
- The design is task oriented – focused on allowing you to order a pizza, fast



What is RWD?

- Responsive Web Design (RWD) is a Web design approach aimed at providing an **optimal viewing experience across a wide range of devices** (from mobile phones to desktop computer monitors)
 - It enables **easy reading** and navigation with a **minimum of resizing, panning, and scrolling**
- (from http://en.wikipedia.org/wiki/Responsive_web_design)

How do you build responsive web sites?

- By using:
 - Flexible images (and media)
 - Fluid (elastic), proportion-based grids
 - CSS3 media queries



Responsive design approaches

- Begin with a desktop site design and scale/reflow for smaller viewports
- Begin with the smallest viewport progressively enhance the design and content for larger viewports



CSS for fixed layout

- `#container { width:960px; margin:20px auto;}`
- `#sidebar { float:left; width:340px; }`
- `#maincolumn { float:left; width:620px; }`
- `footer { clear:both;}`



CSS for fluid layout

```
#container { width:95%; margin:2% auto; }
```

```
#sidebar { float:left; width:25%; }
```

```
#maincolumn { float:left; width:75%; }
```

```
footer { clear:both;}
```



CSS and Media queries

- Media queries allow you to test for common media properties, including:
 - device-height, max-device-height, min-device-height
 - device-width, max-device-width, min-device-width
 - min-width, max-width (viewport)
 - min-height, max-height (viewport)
 - orientation
 - aspect-ratio
 - color
 - resolution



CSS and Media queries (2)

- Media queries are the code building blocks for responsive designs!
- Documentation available here:
https://developer.mozilla.org/en-US/docs/Web/Guide/CSS/Media_queries



Media types

- You can also customise your CSS by having CSS code that applies only to specific devices

```
@media screen {  
  p {font-family:verdana, sans-serif; font-size:14px;}  
}  
@media print {  
  p {font-family: times,serif; font-size:10px;}  
}
```



Putting it all together

```
body { background-color: grey; }
```

```
@media screen and (max-width: 960px) {  
    body { background-color: red; }  
}
```

```
@media screen and (max-width: 768px) {  
    body {background-color: orange;}  
}
```


Putting it all together (external file)

```
<link rel="stylesheet" media="screen and  
(orientation: portrait) and (min-width: 800px)"  
href="800wide-portrait-screen.css" />
```

- If the device doesn't match all conditions, the style is not loaded.

Device capability

- Media queries are not just about the type of device – they are about the capabilities of the device!
 - The next examples should make it more clear



RWD: desktop



And the winner isn't...

file:///Volumes/MacBF HDD/Users/benfrain/Documents/Storage/articles/packt/respons Google

And the winner isn't...

AND THE WINNER ISN'T...

WHY? SYNOPSIS STILL/PHOTOS VIDEOS/CLIPS QUOTES QUIZ

UNsung HEROES...



OVERHYPED NONSENSE...



EVERY YEAR

WHEN I WATCH THE OSCARS I'M ANNOYED...

that films like King Kong, Moulin Rouge and Munich get the statue whilst the real cinematic heroes lose out. Not very Hollywood is it?

We're here to put things right.

[these should have won >](#)

NOTE: OUR OPINION IS ABSOLUTELY CORRECT. YOU ARE WRONG, EVEN IF YOU THINK YOU ARE RIGHT. THAT'S A FACT. DEAL WITH IT.

996x1035

RWD: mobile phone



CSS libraries

- Rather than coding all your CSS, you can use CSS libraries and frameworks
- Popularity of libraries and frameworks varies in time, but some of the most popular ones are:
 - 960 Grid System: 960.gs
 - YAML 4: yaml.de
 - Blueprint: blueprintcss.org



CSS frameworks

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 - 960 Grid System: 960.gs
 - Bootstrap: getbootstrap.com
 - YAMML 4: yaml.de
 - Blueprint: blueprintcss.org
 - Semantic: semantic.gs
 - Skeleton: getskeleton.com



CSS frameworks (2)

- Complex web sites are often based on existing libraries/frameworks
- Using libraries/frameworks can speed up your development (but does have licensing implications)

Semantic.gs in action

- Let's see the design and code at <http://semantic.gs/examples/responsive/responsive.html>
- Columns are defined using the Less pre-processor



What is Ajax?

- Ajax (Asynchronous JavaScript and XML) is considered to be one of the most important building blocks for Web 2.0 applications.
- Both JavaScript and XML existed before Web 2.0 – the innovation of Ajax is to combine these technologies together to create more interactive Web applications.
- Ajax is typically used to allow interactions between client and server without having to reload a Web page.



Ajax libraries

- A number of different libraries have been developed in the last few years to support a faster and more integrated development of Ajax applications.
- The most common are:
 - jQuery (<http://jquery.com>) (included in Dreamweaver)
 - Spry (<http://labs.adobe.com/technologies/spry>) (included in Dreamweaver)
 - Script.aculo.us (<http://script.aculo.us>)
 - Dojo (<http://dojotoolkit.org>)



jQuery

- jQuery is a JavaScript library designed to simplify the development of multi-platform client-side scripts
- jQuery's makes it easy(-ish?) to navigate a document, select DOM elements, create animations, handle events, and develop Ajax applications.
 - and it's free, open source software!



jQuery Mobile in action

- jQuery Mobile is a framework based on jQuery, to build mobile web sites.
- Basic jQuery Mobile pages can be created in minutes in Dreamweaver
- When creating a new page, select a starter template and select "jQuery Mobile with Theme"
 - jQuery Mobile pages are normally contained all in one file
 - See demos of the widgets available here: <http://demos.jquerymobile.com/1.4.2/>
 - Theme using <http://themeroller.jquerymobile.com/>

jQuery Mobile CDN

- You can also use jQuery through a CDN (content delivery network), including the file directly
 - jQuery CDN links are available here:
<http://jquerymobile.com/download/>
- Using the CDN version normally allows a better experience to users – as they might have already the library in cache from a visit to another site also using the same CDN
- You should not use CDN for development – only in production



Adaptive web design

- **Adaptive web design** shares most of the same goals of Responsive Web Design, but the changes are made on the server side rather than the client side.
- With adaptive delivery, the most significant difference is that the backend of the website detects the devices making requests to it and uses this information to deliver different batches of HTML and CSS code based on the characteristics of the device that have been detected.



What about legacy browser support?

- What can you do to support legacy browsers?



Testing tools

- Microsoft Internet Explorer Developer Toolbar:
<http://www.microsoft.com/download/en/details.aspx?id=18359>
- Firesizer (Firefox; <https://addons.mozilla.org/en-US/firefox/addon/firesizer/>)
- Windows Resizer (Chrome;
<https://chrome.google.com/webstore/detail/kkelic-aakdanhinjdeammilcgefonfh>)
- Opera Mobile Phone Emulator (from your VLE)

Readings

- Raash, J. (2010). How To Build A Mobile Website. Available from <http://mobile.smashingmagazine.com/2010/11/03/how-to-build-a-mobile-website/>
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- Frain, B. (2011). Responsive Web Design with HTML5 and CSS3