

DESIGNING FOR THE MOBILE WEB

The mobile phone has incredible reach — users have their phones with them at home, in the car, at work, in the store. Mobile devices are used on the go, are geographically sensitive, and are primarily used to retrieve context-sensitive information quickly: looking up a phone number, checking an address, reading a restaurant review, or finding a map and directions. Because the mobile environment is a profoundly different experience, it does not make sense to simply point mobile users to a traditional website and miss out on the unique capabilities of the mobile environment. Designers must not think of the mobile environment as a poor substitute for desktop sites and applications. Instead, we must consider what works best within the context of real-world mobile browsing, and deliver content and functionality tailored to the platform. In some cases, this means offering a subset of content and functionality. It might also mean offering content and functionality unique to the mobile platform.

Benefits of the Mobile Web

- Portability
- Location awareness (GPS)
- Accelerometer (measures tilt and motion. It is also capable of detecting rotation and motion gestures such as swinging or shaking)
- Proximity sensors (The iPhone screen blacks out when you put it to your face)
- Electronic compass
- Picture & video capabilities
- Phone connection and the ability to move seamlessly from browser to phone
- Multi-touch gesture support & content zooming
- World-wide market penetration

Cameron Moll captures the potential of designing for mobile devices:

The truth of the matter is web content on mobile devices can be every bit as good of an experience, but in its own right. If we treat the mobile web as its own environment rich with possibilities, rather than a crippled extension of the desktop experience with restrictive limitations, we begin to understand how to embrace and even exploit those possibilities.

Mobile Web Design

<http://mobilewebbook.com/>

A Look at Statistics: Why We Should Care About Mobile

In the early 1990's, organizations were struggling with the idea of using the Web for research, marketing and transactions. The idea caught on quickly, though. Broadband access started to become more affordable, content and functionality became more sophisticated, and the number of Websites and the number of Web users grew exponentially.

Internet World Stats reports that from December 1995 to December 1997, the number of users on the Internet jumped from 16 million to 70 million. The numbers increased to 248 million by December 1999 and are now around 1.5 billion. During this time period, IWS also reports that the percentage of the world population on the Internet moved from .4% to a staggering 23.5%.

Internet Growth Statistics

<http://www.internetworldstats.com/emarketing.htm>

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It was often an uphill battle to get organizations to invest in the web, but those efforts were well rewarded as the web went from cutting-edge to indispensable.

Today, organizations are trying to figure out how and when to use social media, grappling with Web 2.0 concepts to make their sites more interactive, and taking a look at making their Web content work on mobile devices.

Mobile phone use has undergone an astonishing increase in the past decade. In September of last year, Secretary-General Hamadoun Touré of the International Telecommunication Union (ITU) announced that worldwide mobile cellular subscriptions were likely to hit the 4 billion mark by the end of 2008. The ITU also noted that between 2000 and 2008 growth in the market averaged 24% a year with an estimated 61% market penetration by the end of 2008. One third of all mobile phone subscriptions included in their estimates were held in China, India, Russia and Brazil.

International Telecommunication Union *Press Release*
http://www.itu.int/newsroom/press_releases/2008/29.html

When considering the impact of these statistics on Web design, it is useful to know what the usage statistics are for mobile phone Internet access.

The Pew Internet & American Life project reported in late 2008:

The mobile device will be the primary connection tool to the Internet for most people in the world in 2020.

The Future of the Internet III http://www.pewinternet.org/PPF/r/270/report_display.asp

In the United States. Nielsen Mobile reported in July of 2008:

In the US, Mobile Internet has become a mass medium. As of May 2008, there were 40 million active users of the Mobile Internet in the US, based on past 30-day usage. And this is just a subset of the 95 million US mobile users who subscribed to the service but do not necessarily use it.

Critical Mass: The Worldwide State of the Mobile Web
<http://www.thumbjockey.com/files/criticalmass.pdf>

Reports that we are reaching critical mass with worldwide mobile phone proliferation and mobile internet access have obvious implications for bridging the digital divide, providing open government, extending e-learning opportunities and for mobile e-commerce. Clearly, it is time to jump on the mobile bandwagon.

Challenges of Designing for the Mobile Web

When designing for the mobile Web, broad usability and accessibility principles for the desktop environment still apply:

- Deliver useful and compelling content
- Provide functionality and design that fit the user's context
- Write standards-compliant XHTML and CSS code
- Follow accessibility guidelines

Andrea Richeson, aricheson@gmail.com

A whitepaper for Introduction to Usability, Professor Randolph Bias, March 2009

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- Use clear and concise language
- Make the site easy to navigate

Some of the challenges we face with the mobile platform include:

- Variation in device usability
- Smaller screen size
- Variety of screen sizes
- Multiple browsers
- Connection speed and reliability
- Lack of peripherals
- Input variation
- One-handed control of devices

One Web or Many?

There is huge debate in Web development community about how to approach the delivery of content to the mobile device. The W3C's suggest best practices document targets the "One Web" as its goal:

One Web means making, as far as is reasonable, the same information and services available to users irrespective of the device they are using. However, it does not mean that exactly the same information is available in exactly the same representation across all devices. The context of mobile use, device capability variations, bandwidth issues and mobile network capabilities all affect the representation. Furthermore, some services and information are more suitable for and targeted at particular user contexts.

*Mobile Web Best Practices 1.0
Basic Guidelines*

W3C Recommendation 29 July 2008

<http://www.w3.org/TR/mobile-bp/#OneWeb>

On one end of the "One Web" debate is Jakob Nielsen, who advocates building specific mobile applications or websites for general classes of mobile devices:

For the best user performance, you should design different websites for each mobile device class — the smaller the screen, the fewer features, and the more scaled back your design. The very best option is to go beyond browsing and offer a specialized downloadable mobile application for your most devoted users. In practice, however, only the biggest and richest sites can afford all this extra work on top of their desktop-optimized website.

Mobile Web 2009 = Desktop Web 1998

<http://www.useit.com/alertbox/mobile-usability.html>

Advocating a pure "One Web" method, Bruce Lawson frames the argument in terms of the debate the design community has had about providing separate websites for disabled users. Lawson suggests that one website can deliver content to all platforms:

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Access to the web is a human right, says Bruce Lawson. It should not matter if you browse using a mobile phone, or with an assistive technology because of a disability. You should still have access to the same website a desktop user enjoys.

Forget the mobile web: One site should work for all.
<http://resources.zdnet.co.uk/articles/comment/0,1000002985,39621546-1,00.htm>

Both of these arguments have their place, but neither extreme seems to be a practical solution. A middle ground is perhaps providing mobile-optimized content while still offering a path back to the full site content. Cameron Moll advocates this path:

Reducing images and styling seems an unnecessary development endeavor. And I might say it's debatable whether handheld CSS will ever be of any value to developers and users, despite its promising aspirations. On the other hand, I just might say doing nothing and mobile-optimized content are emerging as the two most viable approaches. I see the two co-existing for the next couple years as new devices and browsers enter the market offering great content zooming experiences but also leveraging mobile-exclusive technology such as location awareness and camera/video capabilities.

Mobile Web Design
<http://mobilewebbook.com/>

The Washington Post offers the best of both approaches — a full site available to mobile users with a clear link to a version designed for the mobile context:



www.washingtonpost.com



mobile.washingtonpost.com

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A Look at Standards

The World Wide Consortium (W3C) is the international standards body organization for the World Wide Web. The W3C standards are implemented to a varying degree of accuracy across all modern browsers. Standards put out by the W3C are seen widely as the gold standard for accessible, standards-based Web development.

The W3C formed the Mobile Web Initiative, which includes participants from content providers, authoring tool vendors, device manufacturers, browser vendors and telecommunications operators. The Mobile Web Initiative includes the Mobile Web Best Practices Working Group, the Test Suites Working Group, the Mobile Web for Social Development Interest Group and a Steering Council. These groups have published standards, best practices and testing tools that we can use to develop and test mobile sites. See the Mobile Web Initiative online at: <http://www.w3.org/Mobile/>

Testing Resources

Testing mobile sites can be a huge burden because of the proliferation of devices and browsers. That said there are several online tools and sites that can simulate the mobile experience.

- W3C mobileOK Checker determines the level of mobile-friendliness of a page. <http://validator.w3.org/mobile/>
- ready.mobi is a testing tool that evaluates mobile-readiness and offers emulators to display a site on different devices. <http://ready.mobi/>
- dotMobi Emulator shows your choice of site on the Nokia N70 and Sony K750 <http://mtld.mobi/emulator.php>
- Browsercam – a fee-based emulator. <http://www.browsercam.com/default2.aspx>
- Google Mobilizer converts traditional pages to mobile-friendly pages. <http://www.google.com/gwt/n>
- The Web Developer Toolbar on Firefox can be used to disable CSS and images. <https://addons.mozilla.org/en-US/firefox/addon/60>
- Opera browser settings can be changed for “View” to “Small Screen” to display the website in a very narrow window. <http://www.opera.com/>
- The Opera WebDev Toolbar can be used to view an unstyled page by clicking on “Display.” <http://dev.opera.com/tools/>
- The Opera Mini Bookmarklet – Use it to show your site in the Opera Mini Emulator. <http://www.opera.com/mini/developer/#bookmarklet>

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A Development Checklist

When developing a new site or maintaining an existing one, it can be helpful to have a checklist to keep track of all the business, technical and policy requirements. The W3C offers an exhaustive Best Practices list at <http://www.w3.org/TR/mobile-bp/summary>. Included below is a summary of concerns.

1. Know your users: Prioritize your content and functionality.
2. Survey your user base and review site analytics to determine what mobile devices and settings you might want to target
3. Determine what content and functionality can be delivered to the mobile platform.
4. Offer your users the choice of a full site or a mobile-specific site.
5. Use properly-formatted, standards-based code.
6. Simplify your navigation
7. Size images for the mobile environment
8. Validate your code
9. Test your code across multiple devices, with multiple personas and scenarios.

Gallery

There are so many wonderful sites and applications that are optimized for mobile. The Mobile Awesomeness site showcases examples and gives screenshots. See: <http://www.mobileawesomeness.com/>

Some particularly effective designs include:



Each of these sites optimizes the content for the mobile environment, offers consistent, clear, and minimal navigation, sizes images appropriately, and offers the opportunity to view the full site content.

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Don't Be a Norbert



The Web has always been a fast-paced environment with rapidly changing demographics, browser requirements, network speed and device capabilities. The mobile Web is just another phase in the Web's evolution. While there are some astonishing new opportunities offered by the mobile environment, the basic requirements for crafting usable sites remain the same. Know your users, stick with standards, design for the appropriate context. Many organizations rely on the Web to communicate with new and existing customers. Those who don't keep pace in the evolution of the Web risk becoming obsolete. Don't be a Norbert. Design for the mobile Web.

Resources Online

A complete list of resources reviewed for this project are available on the Mobile Design page at: http://andrearicheson.org/wordpress/?page_id=115