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Responsive Web Design: An Overview of the Key Aspects

Responsive Web Design (RWD) is a popular topic in the web design and development industry as part of conversations about multi-device web strategies.

What is Responsive Web Design?

RWD is a design and development approach that strives to keep a consistent user experience across desktop and mobile devices by designing and building the website to “respond” to the display and performance capabilities of each user’s device. The term RWD was first coined by Ethan Marcotte in May 2010 in A List Apart, "[Responsive Web Design](#)".

Why Responsive Web Design is Important

With the increasing variety of desktop and mobile devices constantly being introduced, interactive designers and developers must contend with the challenge of trying to ensure a consistent and quality user experience across all of them. RWD was developed as an approach to do this without having to design and build a unique version of the site for each device and viewport dimension. The primary objectives of RWD are a consistent user experience across all devices and one design/codebase to build and maintain.

Key Aspects of Implementing a Responsive Web Design

When planning, designing, and implementing RWD there are a host of additional factors to consider, some are:

Wireframing

Planning is crucial for responsive sites because in order to ensure that the same content will be available on all platform viewports (e.g. content parity), the site layout and breakpoints must be properly planned. Breakpoints are the points at which the site responds based on the device viewport.

An example wireframing approach is to divide the site into numbered sections and create a wireframe for the smallest target mobile device first. After creating the simplest layout, the layouts for larger devices are created in sequence. In each layout, the numbered sections are used to reference where each element goes. Another approach is to wireframe in the browser using a crude design and basic HTML. With this approach, the design responsiveness is developed first with the target devices. Once the desired breakpoints are identified in the devices, the site is ready to be designed then built.

Layouts

Multiple fluid grids are used in RWD to scale the layout to the viewport; page elements are sized in relative units (e.g. percentages) rather than absolute units (e.g. pixels/points). Adaptive and mixed layouts are other layout approaches that are being debated within the industry as to their fit under the umbrella of responsive design. An adaptive layout uses multiple fixed layouts which is not truly responsive, but is often desirable when a complex existing desktop site would need to be completely rebuilt to achieve a RWD approach. A mixed layout approach uses a fixed width for larger devices then adjusts to a fluid approach for smaller ones.

Images

Making images responsive can be tricky. Some approaches are to make them flexible by sizing them in relative units, showing and hiding portions, scaling foreground images, and using horizontal sliding features. Infinite scaling of images can introduce compression artifacts, as well as adding cost to the licensing of copyrighted images. For example, an image available as a JPEG at a certain pixel dimension may be more costly as a PNG at a higher dimension. For high resolution displays, such as Apple Retina, a high resolution image may be more effective for scaling on multiple platforms, but may be burdensome on phones with limited data capability. There are many more facets of using images, including the use of raster vs vector based imagery.

Technical Constraints

Each responsive idea for a project must be vetted from a technical point of view to ensure it will work properly or degrade gracefully in every device. Unanticipated technical challenges may arise during the implementation of the designs, so it's important to grant some latitude to the project developers to make minor design and layout modifications in order to unify minor variations between the design comps and device displays.

Budgeting

In most cases, RWD increases the project time and budget because the information architecture, design, layout, and programming tasks become more involved.

Alternative Desktop/Mobile Approaches to Consider

RWD is not right for every website project. In some situations a desktop-only site makes the most sense without a mobile complement, in others a mobile site or mobile app to complement the desktop site is best. There is no one-size-fits-all decision. Some of the considerations are the state of the current website, current or anticipated devices used by the target users, functional requirements for the mobile experience, and budget.

Overview of alternative approaches:

Desktop Websites: Websites Built for Desktop/Laptop Browsers; No Mobile Version

Some websites display and function fine without a responsive approach or mobile version complement. Site visitors can browse the desktop site using their mobile device and adjust their browsing as necessary (e.g. zoom in). Websites that anticipate low levels of traffic from mobile devices, display fine already on mobile devices, or don't have the budget for a mobile strategy may be fine without a mobile strategy.

Mobile Websites: Websites Built to Display in Mobile Browsers

Creating a mobile website complement to a desktop site is a good alternative when an RWD approach would require rebuilding an existing complicated desktop site, especially a design intensive one; RWD techniques can be difficult to retrofit on desktop sites. Mobile sites are typically a simplified version of the design and functionality of the desktop site. The JP Morgan Chase mobile site is an example that focuses on select online banking functionality while content-oriented mobile sites such as the one we built for [Arnold & Porter](#) reduces the content in order to not overwhelm the user and provide a more streamlined experience.

Mobile Apps: Mobile Applications that Download/Install on Mobile Devices

For businesses where the mobile experience is the primary experience (e.g. mobile-first businesses), mobile apps are a requirement; the business can't operate without one. Other businesses that are not mobile-first can offer a mobile app in addition to their desktop/mobile sites to provide a more branded and feature-rich mobile experience and secure icon real estate on the mobile device. The well-known Uber App is a good example of the mobile-first approach while the [SALT Shaker App](#) that we built for Sutherland Asbill & Brennan is an example of a complement to their popular desktop site [SALT Shaker Blog](#).

How We Can Help

We are available to talk further about RWD and other desktop/mobile approaches to assist you in determining and implementing the right strategy for your project objectives.

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