

# Paving the Path to Content-Centric and Device-Agnostic Web Design

Maximilian Speicher

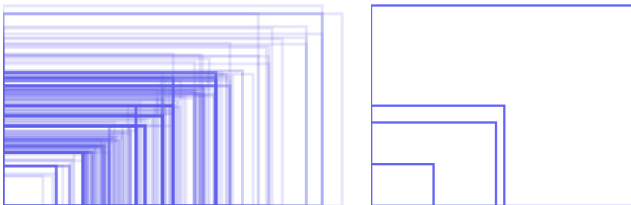
VSR Research Group, Chemnitz University of Technology, 09111 Chemnitz, Germany  
`maximilian.speicher@s2013.tu-chemnitz.de`

**Abstract.** Content-centric and device-agnostic design are crucial parts of modern web design. They are required to cater for the rapidly growing variety of different web-enabled devices and screen resolutions. We review satire site `motherfuckingwebsite.com` as a drastic example for realizing these aspects. Additional enhancements are proposed that pave the path to up-to-date minimalistic web design. A simple example application is described to illustrate the proposed approach.

**Keywords:** Content-centric Web Design, Device-agnostic Web Design, Responsive Web Design, Web Interfaces.

## 1 Introduction

Nowadays, web developers are confronted with a growing amount of novel devices. Thus, also an increasing range of display resolutions has to be addressed (Fig. 1). When the first web-enabled smartphones became popular, it was common practice to provide separately designed versions of the same website. Yet, this approach is highly inefficient considering the range of devices and display resolutions. This calls for the application of responsive web design, i.e., a website flexibly reacts to the device it is accessed with [4]. The usual approach is to combine a fluid grid layout (cf. frameworks like *Bootstrap*<sup>1</sup>) with CSS3 media queries (i.e., breakpoints) to select rules based on the detected device context [4].



**Fig. 1.** Comparison of display resolutions of Android devices (left) and Apple devices (right). The graphics have been taken from [5].

<sup>1</sup> <http://getbootstrap.com/> (2014-03-17).

Besides, websites that are overloaded with, e.g., JavaScript libraries or extensive images, can cause problems with web-enabled mobile devices due to slow loading times. Thus, besides responsiveness, modern web design should strongly focus on delivering content while minimizing user distraction through trivialities. A promising method for realizing this is *mobile first* design [6] since the capabilities of mobile devices are still limited compared to desktop computers.

Still, many websites are developed with only three kinds of devices in mind, i.e., desktop, tablet and smartphone, while neglecting resolutions in between.<sup>2</sup> Moreover, cutting-edge websites—although often mobile-ready—tend to focus on a complex visual appearance that is often graphic- and animation-heavy. In this paper<sup>3</sup>, we present a review of `motherfuckingwebsite.com` (MFW), which denounces these grievances and satirically claims that it is perfect by following the simplest possible approach to web design. That is, the website is radically content-centric and device-agnostic *without using any device- or resolution-specific breakpoints*. We find that, based on established findings from user experience design, MFW would require adjustments to three particular aspects to provide a more perfect user experience. Yet, although intended to be satire, it is a valid step into the direction of up-to-date minimalistic web design.

## 2 Related Work

Two well-known strategies for providing websites for different devices are *progressive enhancement* and *graceful degradation* [4]. These focus on starting from one end of the spectrum of devices and then adding more or less sophisticated variants of the website to cater for other devices [4]. The above depend on specific devices while *responsive design* is more oriented towards device-agnosticism. Still, the majority of responsive approaches depend on breakpoints for devices and/or resolutions. The *Goldilocks* approach [1] strongly focuses on text presentation and using as little breakpoints as possible. Conceptually, it is closer to MFW than other responsive approaches such as Bootstrap.

## 3 Review of `motherfuckingwebsite.com`

MFW is a website following a drastically minimalistic approach to web design (Fig. 2). Although the site is intended to be satire and highly exaggerated, we believe its concept is a valid step into the direction of content-centric and device-agnostic web design. This was underpinned by numerous positive reactions by users on different social media platforms. We provide a review of MFW w.r.t. established findings from user experience design. Particularly, the website makes the following points to underpin its initial statement that “it’s [...] perfect”:

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<sup>2</sup> <http://www.webdesignerdepot.com/2013/05/common-misconceptions-about-responsive-design/> (2014-03-17).

<sup>3</sup> This paper is based on an earlier blog post by the author, see <http://wp.me/p4gilw-I> (2014-03-17).

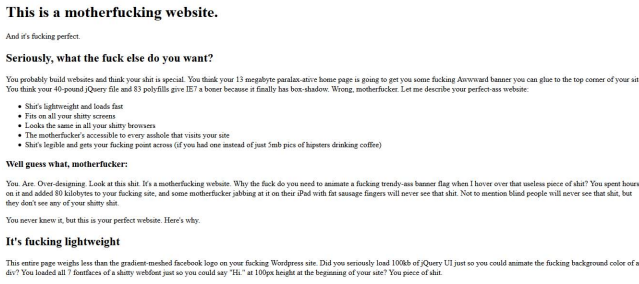


Fig. 2. Screenshot of `motherfuckingwebsite.com`.

1. It is lightweight and loads fast by omitting client-side scripts and graphics.
2. It is completely device-agnostic, i.e., “[the] site doesn’t care if you’re on an iMac or a [...] Tamagotchi”. In fact, it omits any JavaScript- or CSS-based breakpoints and only makes use of the HTML viewport meta tag<sup>4</sup>.
3. It is cross-browser compatible.
4. It is accessible for all users, particularly visually impaired ones.
5. It delivers content instead of overloading the site with trivialities.
6. It uses HTML5 tags to leverage semantics.

The above points are correct and necessary for modern web design. Yet, MFW’s statement about perfectness, if not meant satirically, would not be completely correct. This is because the site’s design follows a rather functional point of view while neglecting important aspects that affect user experience. In this context, we assume that a *perfect user experience*—independent of devices and resolutions—is what makes a website perfect. Particularly, MFW would need adjustments w.r.t. the following three points.

**Line Width.** Text lines on MFW span across the whole width of the viewport. They might exceed the optimal line length of  $\sim 66$  characters [1], particularly in large-screen contexts. More optimal than MFW would be to limit text lines to a width of about 30 characters [1]. Further optimization would include a multicolumn layout<sup>5</sup> and pagination for large screens [3].

**Navigation.** MFW omits statements about navigation. However, a website featuring larger amounts of content requires corresponding means. Optimally, developers should use a navigation bar fixed to the top of the viewport, which currently is common practice in web design (cf. *Ecosia*<sup>6</sup>). Following the approach of device-agnostic design, the navigation bar must react flexibly if the contained links would span more than one line on small screens.

**Visual Aesthetics.** Although technically flawless, MFW does not pay attention to site aesthetics, which strongly affect user satisfaction [2] and thus also user experience. Better aesthetics can be realized by using more sophisticated

<sup>4</sup> [https://developer.mozilla.org/en-US/docs/Mozilla/Mobile/Viewport\\_meta\\_tag](https://developer.mozilla.org/en-US/docs/Mozilla/Mobile/Viewport_meta_tag) (2014-03-17).

<sup>5</sup> <http://www.w3.org/TR/css3-multicol/> (2014-03-17).

<sup>6</sup> <http://www.ecosia.org/what> (2014-03-17).

typography and color schemes, e.g., for better contrast. This does not require the use of extensive graphics, which is a major aspect of MFW.

The above points underpin that MFW cannot be a completely *perfect* approach to web design. Yet, they also show that only little changes to the site can make for a serious approach to up-to-date minimalistic web design. Given the increasing diversity of web-enabled devices, we believe that more content-centric and device-agnostic design—as promoted by MFW—are an integral part of the future of web engineering.

**Example Application.** We have designed a website featuring a fixed navigation bar at the top of the viewport. Established approaches like Bootstrap engage CSS3 media queries to determine whether the standard navigation has to be adapted. Since it is cumbersome to cover all potential resolutions (Fig. 1) using media queries, we leverage a more device-agnostic approach. A script adds a second navigation bar featuring only a single dummy link to the site. This additional navigation is placed outside the viewport. On each window resize event, we compare the height of this navigation bar with the real navigation. If the latter has a greater height than the hidden navigation, we know that the contained links span more than one line and should be adjusted to form a dropdown menu. This approach is in accordance with MFW and the proposed enhancements. A corresponding demo is available at <http://www.maximilianspeicher.tk/DAD/>.

## 4 Conclusion

The increased proliferation of novel devices and growing number of screen resolutions makes it difficult to design websites that can react flexibly to all of them. This requires highly device-agnostic approaches to web design. Also, focusing on content more strongly supports modern, device-independent websites. We provide a review of [motherfuckingwebsite.com](http://motherfuckingwebsite.com), which is a minimalistic satire site drastically addressing current problems in (cross-device) web design. Additional enhancements to this website make for a valid and feasible approach to up-to-date content-centric and device-agnostic webdesign.

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