

Accessibility Audit

By Richard Neves

WHAT IS IT?

First let's cover what is meant by *accessibility*: essentially access to all, regardless of technological and physical means – ranging from people with screen readers to mobile phones or slow modems.



In terms of disability affecting people, there are four main types:

- **Visual** – Complete blindness, poor vision or colour blindness. Also individuals who are intolerant of flashing/strobe effects.
- **Auditory** – Complete deafness or hearing impairment.
- **Physical** – Lack of function, lack of mobility or lack of muscle coordination.
- **Cognitive** – Learning difficulties, e.g. dyslexia, poor memory or attention, impaired speech and poor hand-eye coordination.

An accessibility audit, as with heuristic evaluations, involves an accessibility expert reviewing your website or web application. Through the review process the expert will highlight all issues deemed problematic for users with accessibility needs and provide recommendations for fixing them.

When developing or redesigning a site it is prudent to evaluate accessibility early and throughout the development process, identifying accessibility problems sooner rather than later while it is easier to address them. It's important to note that accessibility audits are only one of three typical methods for assessing website accessibility conformance. Accessibility testing with real disabled users can be undertaken and additionally, automated testing using

one or multiple automated programs to test the site against accessibility guidelines.

WHY DO YOU NEED IT?

There are many reasons why as a creator of products for users you should care about accessibility:

- Universal design means more people can access your site. Not only is inclusivity a good thing, but if you run a business, accessibility can potentially increase sales.
- There is an inevitable increase in the number of people with a registered disability so we must support this need.
- It's illegal not to. Government agencies all over the world have legislated that IT services and products must be accessible to disabled people. In the US there have been several high profile law suits against Amazon and AOL.

WHEN DO YOU NEED IT?

Ideally you'll be building accessibility conformance into your site as you create it. However it is common to review an existing site and report on accessibility issues to be fixed for the next/future iteration.

HOW DO YOU DO IT?

The WCAG (Web Content Accessibility Guidelines) were established in 1999 to improve accessibility for all impaired users, including the elderly. It provides a single shared standard for web content broken down into four inter-related principles: Perceivable, Operable, Understandable and Robust, with high-level guidelines (see Table 1).

Furthermore, each guideline has success criteria (which are testable) and three levels of conformance: A, AA and AAA. Triple A is difficult to achieve as there are conflicting guidelines (and the technology used for the site architecture may impact on the rating). All public websites should conform to level A as a minimum. Generally you should aim for AA.

As with all approaches, it's important to establish a few points before beginning your audit:

- Why are you doing the audit – is it proactive or as a result of complaints?
- What level of accessibility do you need to achieve? Is there an existing corporate accessibility policy?
- How much of the site needs to be tested?

Accessibility is underpinned by three levels of detail:

1. The **coding** of the website i.e. this could mean that the code presents content in a different order to how it appears on the page, also tabbing order and lack of good page titles or skipping content/navigation links.
2. The **presentation** of the information on the website i.e. poor visual contrast, text embedded in images, the need for plugins to view content.
3. The **content** made available through the website i.e. is the content at a good reading age for the audience, is it broken down progressively so users only click-through for more detail if necessary, is it available in your language.

Quick Audit

A quick approach for reviewing a site for accessibility compliance can include the following:

- **Turn off images** – check there is meaningful alternative text or whether the design relies on the images, for example the text is embedded in an image.
- **Turn off sound** – is the site still usable with no sound cues? Also with audio on, what's the sound quality like?
- Use the browser to change the **font size/zoom in** – does text become pixelated? Is there too much white space (can be disorienting)?
- **Test in grayscale/colour/contrast** – does text disappear, are the effects of colour blocking diminished, is there too much white?
- **No mouse** – Using the keyboard only, can you navigate to all parts of the site, has the tab order been preserved when jumping to different sections or fields in a form?
- **Use a screen reader** – the screen reader will help you understand how a visually impaired user navigates the site, and highlight whether it's easy to navigate, skip content, identify page headers, and the site preserves logical structure?

Comprehensive Audit

Typically you will perform a more exhaustive accessibility audit. In this case you will methodically test the site against the complete set of WCAG guidelines, commenting on where the site successfully conforms, but also importantly where it doesn't and provide recommendations on how the owners can make their site more accessible.

If you have not been given any particular instructions over the conformance level or which pages to look at, aim for level 2 (AA) and start by looking at the main destinations from the homepage, i.e. the primary and global navigation. In addition, find out, or determine the most common journeys for the site, i.e. if it's a travel site, test the accessibility of the search-selection-booking journey.

In addition to the WCAG review, a comprehensive evaluation of a website may include a review using one or more of the following:

- **Assistive technologies/screen readers**
As with the quick audit, to determine how the site performs for visual and cognitively impaired users.
- **Code review**
To identify the use of skip links, headers, form labels, image alternative text and table use for layout.
- **Automated testing**
While this method cannot be fully relied upon, it complements the code review, spotting any broken html tags, non-adherence to document header structure, as well as missing form labels and alternative text.
- **Colour blindness**
A colour blindness simulation application can be used to determine whether pages remain effective for people with common colour vision impairments.
- **Fleishman test**
This allows you to review a sample of the content for ease of reading – important when considering users with cognitive impairment.

If your client is concerned about accessibility for particular audiences, e.g. the elderly or children, then seek out guidelines for these groups too and assess the site against the recommendations.

1. PERCEIVABLE

Information and UI components must be presentable to users – it cannot be invisible to all user senses – at least perceivable to one sense.

- 1.1 Provide text alternatives for any non-text content, e.g. alt tags, field labels, button value, page title, decorative alt=""
- 1.2 Provide alternatives to time-based media, e.g. transcript for video/audio, sign language and captions.
- 1.3 Create content that can be presented in different ways, e.g. semantic mark-up <H>, , , labels, meaningful sequence, Scope use on tables.
- 1.4 Make it easier for users to see/hear content, e.g. don't rely on colour alone, luminance ratio 3:1, don't only underline links on hover, resize text, simple background, avoid text in images, audio control, maximum of 80 characters per column, satisfactory line spacing and avoid horizontal scrolling.

2. OPERABLE

UI components and navigation operable – user can perform all interactions.

- 2.1 Make all functionality available from keyboard, e.g. all functionality (except drawing) shortcuts/AccessKeys don't conflict with browser shortcuts: no trapping.
- 2.2 Provide users enough time to read/use content, e.g. allow user to turn-off, pause time limit (except for auctions), control ticker tapes/blinking, suppress alerts and re-authentication without losing data.
- 2.3 Do not design content in a way known to cause seizures, e.g. no content flashes more than three times per second (unless small and low contrast).
- 2.4 Provide ways to help users navigate, find content, determine where they are, e.g. skip navigation, use <H>, <Title>, preserve form tabbing order, ensure links have context, labels, table of contents, site map, search, breadcrumbs, step indicator (step 1 of 3).
- 2.5 Input Modalities – Make it easier for users to operate functionality through various inputs beyond keyboard. This includes pointer gestures, pointer cancellation, labels, motion actuation, target size and concurrent input mechanisms.

3. UNDERSTANDABLE

Information and UI operation must be understandable not beyond user level comprehension.

- 3.1 Make text content readable and understandable, e.g. <html lang="en">, different language use and selection clear, glossary for unusual terms <abbr> and a Fleishman reading level of 14 years.
- 3.2 Make web pages appear and operate in predictable ways, e.g. onFocus tabbing as expected, no unexpected pop-ups, consistent navigation, and search box inclusion.
- 3.3 Help users avoid and correct mistakes, e.g. accessible/intuitive error handling, labels and instructions, prevent errors, provide Help and confirmation steps, especially where effect is destructive.

4. ROBUST

Catchall – robust enough to be interpreted reliably by range of current and new assistive technology.

- 4.1 Maximise compatibility with current and future user agents, e.g. parsing valid html/xhtml, form labels, frame titles marked-up correctly.

WCAG 2.1 (2018) has added a new section:

5. CONFORMANCE

This section lists requirements for conformance to WCAG 2.1. It provides information on how to make conformance claims, which are optional.

WANT TO KNOW MORE?

More detail on accessibility:

<https://www.w3.org/WAI/>

<https://www.webcredible.com/blog/accessibility-audit-vs-accessibility-testing/>

<https://www.guru99.com/accessibility-testing.html>

For accessibility testing tools:

<https://www.w3.org/WAI/ER/tools/>

<https://www.webcredible.com/blog/using-web-accessibility-toolbar/>

<http://www.colororacle.org/>

<http://wave.webaim.org/>

<https://www.webpagefx.com/tools/read-able/>