On Accessibility, by Katriel Paige

What This Ebook Is

This is meant as an overview on web and software accessibility. For people with disabilities this might be lived experience or it may not be- even among people with the same general condition, such as autism or even migraines, there are different symptoms and I hope you find use of this book. For people who are developers, or managers: I hope you find use of this book too.
I am writing this so people who are hearing about accessibility or afraid recent cases in US courts will be a great burden on their small business can get introduced to what web accessibility entails. It is complex and requires manual judgment and testing, but does not have to be expensive.

However, lawsuits can be expensive, as well as “lost” business. More on this in a bit, under “Why Accessibility”.

What This Ebook Is Not

Accessibility is not a checklist - it is an approach that may incorporate tests and standards and checklists. Likewise, this book may reference standards such as WCAG 2.1, or the (at time of writing) developing ATAG normative standard for authoring tools, or laws such as the US-based Section 508 of the Rehabilitation Act- but I am not a lawyer, this is not legal advice or a checklist, nor is this a guide to technical conformance reports.

If accessibility implementation in a specific web programming language is your concern, please refer to said language’s documentation or GitHub repository/developers community first.

However, there is a section (How Accessibility?) that you may want to look at, as it does refer to balancing things like Materials Design documents with accessibility, the role of automated tools regarding accessibility, and more.

Why Accessibility?

There are at least three reasons to include accessibility in your web-based projects: the legal, the financial (which can be related), and the just.

Legal

In the United States of America, website accessibility is currently in an odd area. For private businesses and organizations, there is no legal mandate for accessibility compliance, even though there have been cases filed under the Americans with Disabilities Act regarding website accessibility. Many of these cases were settled outside of court and only recently were there court decisions: the most recent of this writing, the case involving the Domino's Pizza company/franchise, which did result in the Supreme Court remanding and letting a lower court's decision (that the inaccessibility did violate the ADA) stand.

On the federal level, there is Section 508 of the Rehabilitation Act as amended, which means that federal agencies are mandated to have their sites accessible (not only to public users but also for federal workers who are disabled).

Complicating this, universities and libraries may have their own systems or be aligned with Section 508. It's a patchwork of a couple laws, state laws may be more stringent or cover more, but here's the thing:

Just as the Americans with Disabilities Act doesn't stop places of business from having stairs, doesn't stop people with disabilities from seeing cars parked in disabled-marked spaces or in walkway spaces for wheelchairs, and in practice the burden of complaint and "a fix" is on the person bringing suit... it means that just because there are a couple of relevant laws on accessibility doesn't mean every website is accessible. In fact, far from it.

In other countries, the laws and regulations may vary, but ostensibly there is the industry standard of WCAG - the Web Content Accessibility Guidelines - which were designed in working groups spun off from the World Wide Web Consortium (W3C). As of this writing, the most recent of the normative guidelines is WCAG 2.1, and there is information and tips as to understanding what is meant by the statements and phrases included in WCAG 2.1. The language may seem vague at first, but combined with the understanding and guidance the W3C also provides, the statements are written in such a way to include different web frameworks and languages. Basically, if someone was using a website builder to create a website or was coding it themselves in HTML, CSS, JavaScript, REST endpoints, or was coding up a web-based mobile app, the exact tools you are building with should not matter - the accessibility statements would be the same, though authoring platforms may have some alternate ways to meet the statements.

Lawsuits can be expensive for all involved on top of any costs to fix inaccessibility issues, so it's often easier to just design with accessibility in mind when possible. This brings me to my second point.

Users and Numbers

Another reason as to “why accessibility” is numbers.

Statistics place the general ratio of people with at least one disability at 1 out of every 5 people. Take into account though that design practices for people with disabilities often helps more than just adults with disabilities but also children (with or without identified disabilities), and those who are undergoing age-related issues - differences in telling differences between colors, or needing reading glasses, joint pain, issues with memory or re-focusing attention, etc. - and that 1 out of 5 ratio grows. In addition, due to factors such as stigma or lack of access to healthcare or income, people who might have issues or find certain features helpful (like text-based options or the option to extend a time limit) may not identify as having a disability at all, even though the feature that helps them may be called an accessibility feature.

In the world of video games, this is exemplified by a finding regarding subtitles: when subtitles were turned on automatically but the user still had the option to disable them, subtitles were used in

Justice

This might also be called the moral argument. I put this last in the list not because I personally think so lightly of justice or ethics but because if you are someone who takes the viewpoint of “the algorithm is neutral and can handle it” or are antagonistic towards users, or that “but people with disabilities don’t use this application” - I can’t force you to care. Nor can empathy be legislated.

Disability also cuts across age, religion, and income: everyone, at any point, may deal with issues from an injury, or eyesight degeneration based on age, or joint pain. People may be dealing with invisible conditions like depression or trauma.

And we do generally notice when businesses try to do right by their clients.

How Accessibility?

This is the section many managers and developers want to skip to, viewing accessibility as a checklist. But first, let me go over some myths I have encountered in various workplaces: some had buy-in on accessibility from management, some did not. All of these statements I have heard at some point or another.

- “If this is required, every website would then be compliant, so we can just use what other websites use without worrying about it.”

- “We use an automated tool. If the tool flags something as a problem just put anything there - as long as the tool doesn’t say it’s a problem, there’s no problem.”

- “We don’t know anyone with disabilities who uses this software.” / “We know exactly who our users are already.”

- “The application is on the intranet only/only used by our employees, do we really have to be accessible?”

- “We just need this to be functional. As long as the application is functional, everything else is gravy.”

Just because standards and norms exist does not mean every agency or programmer uses those norms. Also, accessibility requires manual testing - even though automated tools can help with certain aspects of accessibility, these tools are limited and do not give the full picture.

However, the existing norms are a great place to start. If you are working on a mobile application or the web application has a mobile web version, WCAG 2.1 might be the best place to start for you. The norms are divided up into testable platform/language agnostic statements, and there are documents and tips on possibilities on how these statements may be encountered and met.

Myths about Disability

The quotes above when pointing out myths on disability means that work also must be done dispelling these myths as part of long-term accessibility strategies. If someone does not understand why a guideline is there, or possible issues which the guideline helps with, then the same problems are likely to be made again and again.

Accessibility professionals may be able to use their status in a company or when consulting, to be able to dispel these myths to their coworkers and managers: not only to help coworkers or developers understand the guidelines regarding accessibility and why it is important, but also to clarify any points about discrimination and ableism. Unfortunately, tech industries are still wrestling with biased algorithms baked in by the humans designing the systems, as well as personnel matters such as heavily sexist cultures in many companies. Ableism appears throughout tech companies as well, with only a few now leading accessibility changes (Electronic Arts, Microsoft, and more) in conjunction with various disability groups such as AbleGamers. The Microsoft Adaptive Controller, meant for gaming but also applicable for PC use, is one of these collaborative efforts.

For those learning on their own, #everydayableism on Twitter is a useful hashtag to see just how these statements may seem tiny on their own, but are symptoms of a larger history of discrimination that persists to this day and across many different countries.

Several points about disability follow.

- Disability is not an on/off switch: even if someone is declared “legally blind”, for example, the degree of vision even then may vary greatly from person to person, lighting, and situation.

This also means not all disabilities are immediately visible. Many disabilities -- such as diabetes, endometriosis, Crohn’s, rheumatoid arthritis, fibromyalgia, epilepsy, in addition to other conditions such as depression, autism spectrum, trauma conditions, -- are not immediately apparent. No one owes you their medical history to explain why they are in a disability-reserved seat, have a disability pass, or are using an accessible stall in a bathroom. For digital and web-based accessibility, it is similar: no one should have to declare their medical or psychological history to turn on relevant and informative captions, or to expect that labels and controls of an online login page be accessible when using a keyboard only.

- Tools such as screen readers or captions may be used by people with other disabilities than the apparent link.

Example: a screen reader may be used by someone with autism or dyslexia, to enable better comprehension of the material, than someone who is low vision or blind.

Website/Web-based and Digital Accessibility Differences

There is a lot of overlap here because so many applications are web-based. But, as I alluded to before, mobile applications (not ones that you access the site through the included browser, but again, may overlap) use different strategies for navigating them. Digital accessibility includes mobile, but can also include electronic documents as well. Have an ebook on that site? A PDF? These can be made accessible too but may require different strategies such as using accessibility strategies (semantic headers, using styles) during the document authoring itself.

Either way, starting from WCAG 2.1 or the current WCAG standard is a great starting point. There is a normative standard for electronic authoring as well, called ATAG, and the relationship between the different standards as constructed by the World Wide Web Consortium is explained via their Essential Components of Web Accessibility resources. For electronic documents, Microsoft (for Office) and Adobe (for PDF) have advice on creating accessible documents, spreadsheets, and presentations.

For video, YouTube currently enables captions. You may have to adjust timing or the auto-generated words, to ensure the information and text in the captions are correct and relevant. Irrelevant captions have been an issue for many user-uploaded videos, and attention has just now been on caption quality thanks to the prevalence of captions on platforms like Netflix, the rise of streaming content, and the disability communities

thanks to hashtags like #NoMoreCRAPtions . There are live captioning services and platforms that you may want to research as well.

Certifications and Qualifications

As of this writing (December-January, 2019-2020), there are no “must have” certifications. In this respect, accessibility is currently facing similar problems as the larger User Interface / User Experience group of fields: many people are still self-trained due to using accessibility tools or techniques themselves, and/or trained by having to learn on the job.

As a personal note:

> Due to the principle of “nothing about us without us”, I personally advocate for people with disabilities to be included in development and testing whenever possible, and to further not rely on one person with disabilities to speak for all possible disabilities or ranges of ability. As someone who has disabilities myself, it is incredibly frustrating to see someone who has no experience at all with captions, or keyboard access due to pain or mobility issues, etc, assume what people like me “should do” or to say that people like me are not worth considering as users. But someone without disabilities, if they are willing to listen and learn, can still be a valuable tester or resource for accessibility.

There does exist a federal certification for the US federal environment (The Trusted Tester program) for testing for accessible websites and web-based applications as per Section 508, but as of this writing, the Trusted Tester program was still revising their materials for the Revised Section 508 (2018 law) and past certificates are held as no longer current. In addition, Trusted Tester testers may not have firsthand experience with some accessibility tools – even though the US federal government employs many people who have a disability, many people who find themselves in positions of checking for accessibility do not identify as disabled at all, and may make basic assumptions or mistakes, or may assume that a group may have more disability advocacy or representation than it actually does.

Resources

These are a few resources to get you started on your accessibility journey, or to point to managers/coworkers as necessary for their use.

Requirements/Guidelines

- WCAG 2.1 (World Wide Web Consortium): https://www.w3.org/TR/WCAG21/
- EN 301 549 Standard (European standard on ICT accessibility): http://mandate376.standards.eu/standard

- Section 508 (US federal-agency standard): https://section508.gov/

- Americans with Disabilities Act re: accessible technology: https://www.ada.gov/access-technology/enforcement.html

Resources/Organizations/Advocacy

This list is not comprehensive nor complete: it is only meant to get people started on exploring disability and accessibility topics.

- AbleGamers Charity: https://ablegamers.org/

- Autistic Self Advocacy Network: https://autisticadvocacy.org/

- Can I Play That? (review/essay site) http://www.caniplaythat.com/about-can-i-play-that/

- Disability Statistics (US-based): http://www.disabilitystatistics.org/

- Dyslexie Font: https://www.dyslexiefont.com/en/typeface/

- Alper, Meryl. Giving Voice: Mobile Communication, Disability, and Inequality. MIT Press, 2017. Available through bookseller sites.

- Tugend, Alina. “Exposing the Bias Embedded in Tech.” New York Times. Published June 2019. https://www.nytimes.com/2019/06/17/business/artificial-intelligence-bias-tech.html