Accessibility & Design

One of the top most inquiry that many think about at the beginning of a project is the how and why do we need to consider accessibility? Before we get into the bare essentials of how, it is critical to understand why accessibility guidelines are important for designers and developers. Taking into account every possible user, we should understand the needs of these users, so that we can help create a more accessible and better experience for them. In addition, incorporating accessibility at an early stage in the project will also save us time and money.

WHY?

As designers, we are responsible for readable typography, accessible colors and shaping the central content's behaviour. We must work closely with developers, editorial teams, project managers and other teams that are involved in the project to make sure our decisions are in sync, as it is our decision to make or break the websites accessibility. It is important to note that there is only a subtle difference between accessible design and universal design. Universal design web accessibility will not only benefit people with disabilities, but it considers the requirements of a diverse population and improves the usability and convenience of a website.

Empathy plays a big role when designing with accessibility in mind. In order to make usable products for others who have necessities that vary from our own, we should have similar sentiments so we can create solutions that fit the user's needs. One common misconception people have about accessibility is that people with disabilities rarely use the internet, this is far from true. Investing meaningful time with a diverse group of individuals whose experience vary from our own can help us develop a better understanding of other's needs.

Let's find out how we can incorporate accessibility into design.

HOW?

A website that has good accessibility will always result in good usability. To improve usability of the website, we can focus on four main parameters:

1. Visual
    - Sight challenge: Images should have proper alt text
2. Auditory
    - Videos should have captions and text transcripts.
3. Motor

- Keyboard should be accessible.

4. Cognitive
    - Complex information should be simplified.

Affordance

Affordance shows the possible actions users can take to interact with the object's properties. For instance, when we look at a button, we know it has to be pushed because we are accustomed to the on-off function from a physical input.

Navigation

A website needs to have a strong information architecture so that users can find the content they are looking for and determine where they are, regardless of where there are in the website. Most sites have a navigation bar at the top of the page. It is not just there as a means to go to different pages on the site, it can provide a brief snap-shot of what can the user expect to find. It's hard for a new user to understand what to expect. As Steve Krug's, 'Don't make me think!' suggests, we should make the navigation as descriptive as possible.

Breadcrumbs

Breadcrumbs can very useful during times when the user has difficulty remembering where they have been to get to the current page or what they are trying to do. During times of stress, clear navigation is very valuable for users who have short term memory loss and symptoms of dementia. All types of users benefit from clear way-finding that helps them navigate within the site.

Responsive design

It is hard to come across a site that is not responsive these days. Responsive sites respond to devices with different screens sizers but they are not automatically accessible. Responsive web design and accessibility are very complementary. Working closely with the development team, we must ensure that the website doesn't just have a static and fixed format, we go above and give up that level of control in favour of flexibility which results in good experience for everyone.

Color

Color should not simply be utilized as an enhancing decision; it should be used to draw attention to specific elements on a page. Color is never a haphazard choice. Accessible

color system should be defined and given to the team to reference at the early stages of design. Colorable and Colorsafe are wonderful assets to help test the accessibility of color combinations.

Contrast

When designing for buttons, cards, banners and navigation elements, it is important to check the color contrast to ensure that they meet the W3C's minimum AA rating. This helps people with low vision to read the text or perceive graphics clearly. One of the tools I enjoy using is Colour contrast analyzer to determine the legibility of text and the contrast of visual elements.

Here are some contrast ratios to keep in mind when designing:

- Background to text contrast ratio should be at least 4:5:1.
- Contrast of icons and graphical objects should be at least 3:1 against adjacent colors.
- Large scale text should have a contrast ratio of at least 3:1

Typography

When we look at content on the site, we must think about proper usage of typography to ensure and improve the readability of the text. Some things to keep in mind includes, Font size, Font weight, and line length.

1. Font size: Generally recommended font size is 12-14px or larger depending on the font.
2. Font weight: Lighter type weights introduces negative space and heavier type weights introduces more positive space. Both require the reader to concentrate more. "Normal" or "Regular" font weight is recommended.
3. Line length: Making lines too long or too short can be difficult to read because you have to turn you head side to side too often to read. 45-75 characters per line is acceptable and approximately 66 characters per line is comfortable.

Forms

Our design should make it easier for users to understand various inputs in a form. Interaction with forms should be as stress free as possible.
Some points to keep in mind when designing for Forms:

- Error messages must be read automatically so blind users don't have to go looking for them.
- To give important information to the user, labels should be used instead of a placeholder.

- Help text should be added, if necessary.
- Common elements should be grouped together.
- Users should be able to review before submitting.
- Predictive text in search forms can assist people who have trouble spelling particular terms correctly.

Audio & Video

For pre-recorded audio and pre-recorded video, captions and text transcripts must be available for users. This helps people who are deaf or have hard time hearing can read the text or blind users can convert them to braille using one of the assistive technologies.

Images

Images that are only used for decorative purpose and has no content should not be announced by screen readers. However, alternative text should be read by screen reader to inform the user what the image is about. A detailed description should be provided for alt text.

User research & Testing

Assistive technology: Screen readers, Magnifiers, Braille keyboard, Sticks, switch devices, Sip and puff, and voice recognition

During user research, it is important to cover accessibility and inclusive design issues. Accessibility should be incorporated during user stories and personas as well. Doing so will not only help improve user interaction but it will be beneficial to various kinds of individuals. After all, we are all only temporarily abled.

We must use assistive technology such as a screen reader to manually test our design. Some well know screen reader tools includes JAWS for Windows, NVDA (Nonvisual Desktop access) for Windows, Linus Screen Reader (LSR) and Orca for Linux. For mobile, screen readers have become a core part of the operating system. Apple has inbuilt Voiceover and Android has Talk box. Visually impaired people have the option of using a braille display with a screen reader.

In my previous job, as a QA Analyst, I had the opportunity to perform accessibility browser testing using some of the above-mentioned tools. One of my teams' major task was to use only keyboard to navigate through the site in both English and French on desktop and mobile. When performing common keyboard-based testing, we used Up

and Down cursor keys for scrolling, the Tab key for moving between interactive elements, and Space bar or Enter key for interaction. In mobile, we made sure to use the Accessibility shortcut so that it can easily be turned on and off.

Wrap up

Above listed are just few main pointers to keep in mind for designers and developers. Accessibility is a vast ocean. As designers it is our duty to incorporate accessibility in our design so that we can help create a more accessible and user-friendly experience. To better understand accessibility at a deeper level, reading the accessibility guidelines in detail is recommended.

Thanks for reading!

Resources:

- *https://www.uxmatters.com/mt/archives/2013/04/responsive-web-design-and-accessibility.php*
- *https://developer.paciellogroup.com/resources/contrastanalyser/*
- *http://www.uiaccess.com/accessucd/design.html*
- *https://www.smashingmagazine.com/2018/04/designing-accessibility-inclusion/*
- *https://www.interaction-design.org/literature/topics/accessibility*
- *https://www.w3.org/TR/WCAG21/*
- *Book: Don't make me think by Don Norman*