Web Accessibility and Society Impact

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1. Introduction

When websites and web tools are properly designed and coded, people with disabilities can use them. However, currently many sites and tools are developed with accessibility barriers that make them difficult or impossible for some people to use.

Web accessibility is the inclusive practice of ensuring there are no barriers that prevent interaction with, or access to, websites on the World Wide Web by people with physical disabilities, situational disabilities, and sociology-economic restrictions on bandwidth and speed. When sites are correctly designed, developed and edited, more users have equal access to information and functionality.

Web accessibility depends on several components working together, including web technologies, web browsers and other "user agents", authoring tools, and websites. The W3C Web Accessibility Initiative (WAI) develops technical specifications, guidelines, techniques, and supporting resources that describe accessibility solutions.

2. Essential Components Design of Web Accessibility

It is essential that several different components of web development and interaction work together in order for the web to be accessible to people with disabilities. These components include:

- **content** - the information in a web page or web application, including:
    - natural information such as text, images, and sounds
    - code or markup that defines structure, presentation, etc.
- **web browsers, media players**, and other “user agents”
- **assistive technology**, in some cases - screen readers, alternative keyboards, switches, scanning software, etc.
- **users**’ knowledge, experiences, and in some cases, adaptive strategies using the web

- **developers** - designers, coders, authors, etc., including developers with disabilities and users who contribute content
- **authoring tools** - software that creates websites
- **evaluation tools** - web accessibility evaluation tools, HTML validators, CSS validators, etc.

3. Content Component

Content authors need to provide alternative forms of the content. For example, at least some level of human intervention is necessary to create textual descriptions for images and captions for audio content. Sometimes software tools, such as voice and picture recognition, can assist authors in providing such alternatives but the conversion is usually not fully automatable.

There's some Examples of content accessibility features

- **Audio descriptions** – (also referred to as "video descriptions" and "described video") narrations that describe important visual details in a video. These narrations can be during natural pauses in the audio, or in separate audio files or audio tracks in multimedia.
- **Auditory, tactile, and visual notifications** - prompting or alerting the user in different ways such as by blinking or displaying visual dialogs, by using sound, or by vibration.
- **Braille** – a system using six to eight raised dots in various patterns, to represent letters and numbers. These characters are read by scanning over the raised dots using the fingertips. Braille is used by people who are blind but not all individuals who are blind know braille.
- **Captions** – text with a verbatim recording of any speech and with descriptions of relevant auditory information that appears simultaneously with the audio (including audio that accompanies video in multimedia). For real-time captioning typically professional CART writers are necessary.
- **Text-to-speech** (sometimes called "speech synthesis" or "speech output") - automatic conversion of text into a synthesized voice reading the text aloud.
- **Transcripts – text manuscripts containing the correct sequence of verbatim recording of any speech, and descriptions of important auditory or visual information.**

Just as images aren't available to people who can't see, audio files aren't available to people who can't hear. Providing a text transcript makes the audio information accessible to people who are deaf or hard of hearing, as well as to search engines and other technologies that can't hear.

It's easy and relatively inexpensive for websites to provide transcripts. There are also transcription services that create text transcripts in HTML format.

4. stories of web users in Transcripts

Martine is 62 years old and has been hard of hearing since birth. She can hear some sounds, but not enough to understand speech. As a child she learned sign language and during her early school years learned written language. She is currently a student again, taking online college courses.

The university she attends provides sign language interpreters and Communication Access Realtime Translation (CART) writers who provide written verbatim text interpreting of spoken language for her courses. However, Martine has encountered barriers when video and other media content are not captioned. The university became aware of the need and requirement to provide captioned media and transcripts for audio content and is now working with a captioning provider to caption all content posted on university websites, including all course content in learning management systems. In addition to providing access to the content for students who are deaf or hard of hearing, the university has found that the use of captions and transcripts has added benefits. Transcripts facilitate easier production of subtitles in a number of languages and also improve the indexing of online content. Improved indexing provides improved search engine optimization and improved discoverability of the university's online content. The university follows WCAG guidelines in providing the captioned content.

5. Impact of Web Accessibility

The Web is an increasingly important resource in many aspects of life: education, employment, government, commerce, health care, recreation, and more. It is essential that the Web be accessible in order to provide equal access and equal opportunity to people with diverse abilities. Access to information and communications technologies,

including the Web, is defined as a basic human right in the United Nations Convention on the Rights of Persons with Disabilities (UN CRPD).

The Web offers the possibility of unprecedented access to information and interaction for many people with disabilities. That is, the accessibility barriers to print, audio, and visual media can be much more easily overcome through web technologies.

Accessibility supports social inclusion for people with disabilities as well as others, such as:

- older people
- people in rural areas
- people in developing countries

There is also a strong business case for accessibility. As shown in the previous section, accessible design improves overall user experience and satisfaction, especially in a variety of situations, across different devices, and for older users. Accessibility can enhance your brand, drive innovation, and extend your market reach.

[1] https://www.w3.org/WAI/fundamentals/accessibility-intro/
[2] https://en.wikipedia.org/wiki/Web_accessibility