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# ALL ABOUT ACCESSIBILITY

What, Where, and How



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## Executive Summary

Globally, the disability community represents a formidable demographic of over 1.3 billion people with an estimated \$6.9 trillion in disposable income. Visual, auditory, cognitive, and ambulatory challenges present unique considerations for content developers.

In addition to the legal compliance requirements for content accessibility, which are well documented and becoming more widely enforced, the publishing community can and should lead the charge for meaningful social change in this area. Amnet fully embraces this mandate and looks forward to the day when content worldwide will be accessible to all users. Taking into account the necessity of incorporating accessibility, this document considers the growing statistics of the disabled population worldwide, the various laws that govern the implementation of accessibility, and the existing technology available to bring about accessibility.

## Surge of the Disability Community

In the United States alone, 57 million people are living with a disability, about 21 million of whom have vision loss.

Blind and low-vision users account for the following approximate percentages of the US population:

- 5.5% of 18- to 44-year-olds
- 12.0% of 45- to 64-year-olds
- 12.2% of 65- to 74-year-olds
- 15.2% of 75-year-olds and above

By 2050, nearly 10 million Americans will be dealing with blindness or vision loss.

About 48 million Americans have hearing loss. A recent study from Johns Hopkins University indicated that 40% of people over 50 have hearing loss. The same percentages are true for Europe and the United Kingdom.

Statistics reveal that there are 285 million vision-impaired people worldwide, of whom 39 million are blind and 246 million have low vision. Roughly 82% of people living with blindness are aged 50 and above.

People may also face many cognitive impairments, such as dyslexia, dyscalculia, memory issues, and attention-deficit/hyperactivity disorder.

## Providing Accessibility/Usability

Accessibility/usability entails that digital content should be usable for the visually impaired by making the content consumable to them by means of assistive technology.

Regarding existing audio technology today, some accessible players are available, such as Able Player and OzPlayer. Players such as PayPal's accessible video player, Kaltura, and YouTube are accessible but don't support description. Others, such as JW Player and Brightcove, are improving support.

*This is neither an exhaustive list, nor a specific endorsement.*

## US Accessibility Legislation Overview

Accessibility is often implemented by way of legislation, such as the following:

Rehabilitation Act, Sections 508, 504

- Requirements state vendors seeking to do business with the US federal government must ensure their websites and software tools meet accessibility requirements.
- Assistive Technology Act

Americans with Disabilities Act, Titles II, III

- Applies to all activities of state and local governments.  
Prohibits discrimination on the basis of disability in "places of public accommodation" (businesses and non profit agencies that serve the public) and "commercial facilities" (other businesses).
- Prohibits discrimination and ensures equal opportunity for persons with disabilities in employment, state and local government services, public accommodations, commercial facilities, and transportation. It also mandates the establishment of TDD/telephone relay services.

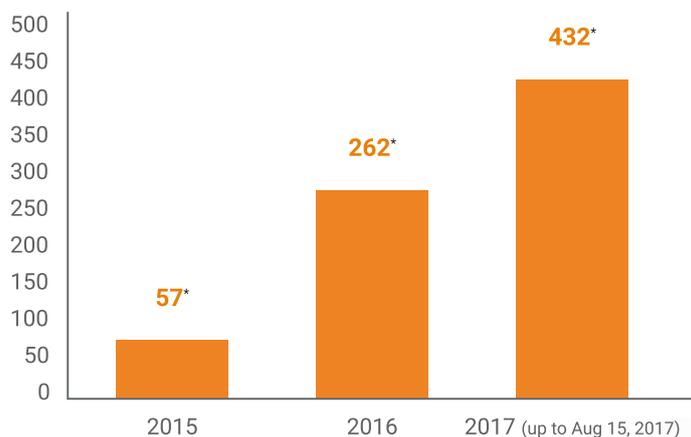
Twenty-First Century Communications and Video Accessibility Act

- Established to ensure all individuals have equal access to new-age technology.
- **Title I: Communication Access:** To make products and services using broadband fully accessible to people with disabilities.  
**Title II: Video Programming:** Makes it easier for people with disabilities to view video programming on television and the internet.

## Noncompliance Is No Longer an Option

Accessibility needs to be addressed in the near term, as companies run the risk of facing lawsuits and negative brand impact. Lawsuits are steadily on the rise.

### Lawsuits increased sevenfold from 2015 to 2017



\*Minimum number of possible lawsuits.

Graphic source: Seyfarth Shaw

## Making Content Accessible Using Technology

Technology—specifically, software—is key in providing greater accessibility to those with visual impairments. The need is to enable the device to “speak” to the user. There are braille note takers, screen readers, and magnifying software that can quickly transform a typical office into an accessible workspace.

Some of the available assistive technology includes screen readers (supporting read-aloud or braille), screen magnifiers (allowing changes in font size, spacing, etc.), text-to-speech software (TTS), and alternative keyboards and pointing devices (head pointers, simulated mouse pointing). Most of these technologies can aid people with learning disabilities as well as the sight and hearing impaired.

Digital assets represent a significant challenge, as only about 10 percent of existing websites are accessible to people with disabilities. Here are some issues and solutions:

1. Blind or low vision: screen readers that enable read-aloud or braille functions
2. Limited mobility or dexterity: functionality does not require a mouse and can be accessed with a keyboard
3. Hearing loss: captions and descriptive transcripts
4. Cognitive disabilities: logical document organization and structure and clear and simple writing

## International Guidelines

### WCAG 2.0

The World Wide Web Consortium (W3C) is the industry-recognized body for setting web accessibility standards. Through the Web Accessibility Initiative (WAI), W3C aims to ensure all users have equal access to information and functionality online. An accessible website is achieved when web pages and processes are validated for compliance to the W3C's Standards, (WCAG 2.0 level AA).

## Conversion of EPUB3/PDF/Word/PPT to Accessible Formats

This involves addressing the specific accessibility requirements that need attention and may go beyond publishers' standard workflows. Some of the features that can be achieved include the following:

- Generating accessible metadata
- Ensuring logical reading order
- Semantic structuring
- Screen reader compatibility on target platforms and devices
- Tagging tables
- Generating MathML
- Defining languages
- Making interactive content accessible
- Writing alternate text descriptions
- Ensuring compliance with WCAG and International Digital Publishing Forum (IDPF) accessibility guidelines
- Identifying decorative images

## Alternative Text Descriptions

Adding alt-text descriptions to nontext content is an important guideline within WCAG 2.0. Subject-matter experts provide text alternatives for any nontext content so that it can be changed into other formats, such as braille, speech, and symbols.

## MathML

MathML makes mathematical equations accessible to everyone by eliminating the ambiguity of a verbal description of a picture. IDPF guidelines are usually followed for encoding in MathML.

## Accessibility Metadata

The inclusion of accessibility metadata facilitates informed decisions about the usability of an EPUB publication. Consumers can review the qualities of the content and decide whether a publication is appropriate for their needs, regardless of whether it meets the bar of being certified as broadly accessible. The accessibility metadata contains information such as access mode, accessibility features, accessibility hazards, accessibility controls, and accessibility application program interface.

## Accessibility Testing

Accessibility testing is a subset of usability testing, and it is performed to ensure that the application being tested is usable by people with various disabilities that might otherwise hinder access to content. Accessibility testing includes an accessibility full check, Section 508 and WCAG compliance; screen reader compatibility and read-out loud testing using Acrobat Reader, NVDA, JAWS, and Voice Over on target platforms and devices; adherence to IDPF accessibility guidelines and PAC accessibility checker for PDF/UA compliance.

## Captioning

Captioning plays an important part in improving accessibility for those with hearing impairment; providing better comprehension, retention, and focus to users without hearing impairment; and providing flexibility for viewing in noise-sensitive environments. As search engines access text and not images, captioning improves search engine optimization, thereby bringing more inbound traffic and increasing interactive video search.

It is important to note that 80% of people who use captions don't have a hearing disability, and 97% of users said searchable transcripts enhanced their user experience.

## Description

Description helps in accessibility for users who are blind, have low vision, or have cognitive disabilities. It gives the user flexibility to view videos in eye-free or eyes-busy environments. Besides providing accessibility for blind and low-vision users, descriptions are useful for people with cognitive/learning disabilities. Descriptions may be required by law in the future.

## Social Factors

The world's population is aging, and web usage is increasing across all age groups, making web accessibility an integral part of corporate social responsibility, demonstrating an organization's commitment to providing equal opportunities. When it comes to content delivery, accessibility has become an important and desirable goal. Creating content that is "born accessible" opens new opportunities to expand the reach of your publishing program beyond the page and screen.

The same technologies and guidelines that improve access to materials for people with visual or hearing impairments, limited mobility, perceptual and cognitive differences, or who face other barriers to reading printed materials can also be tremendously useful to the rest of your customers, which can help you win loyalty and trust.

## Benefits of an Accessibility Strategy

Building an accessibility strategy can help a company manage its legal risk and at the same time protect and grow its public-sector revenues, as government purchasing is heavily weighted toward 508 compliance. It also assists in providing access to the global public-sector marketplace. The European Union, Canada, Australia, and Japan have extensive legislation underway or in place. The most tangible benefit would be increasing your company's market share.

## Conclusion

**Toward more accessible publishing:** Publishers need to address accessibility in the near term, as they have good commercial, ethical, and legal reasons for wider reachability. Digital publishing, e-Learning, K-12 portals, higher education, professional journals, e-Commerce sites, and library sales are all significantly impacted by Section 508 of the Americans with Disabilities Act. Responsibilities under Section 504 and Section 508 are intended to protect individuals with disabilities from discrimination based on their disabilities. Agencies must comply with both provisions when they distribute information. The US Department of Education's Office for Civil Rights and the Department of Justice are committed to ensuring equal access to facilities for the disabled. It is important to implement 508 accessibility as soon as possible, as companies run the risk of incurring legal fees, negative brand impact, and lost revenue for noncompliance.

## References

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## Amnet and Accessibility

Amnet is a leading provider of services and solutions, catering to the needs of businesses for content development, design, and accessibility. With deep insight, an obsession with customer satisfaction, and powered by technology, Amnet's offerings help publishers, brands, agencies, and organizations acquire, produce, and deliver content as efficiently as possible.

At Amnet, we enthusiastically pursue digital equality, which makes content accessible to all, and we provide expertise, implementation, scalability, and compliance with federal and international accessibility regulations. We are primed to deliver world-class services that will meet accessibility objectives in creating new accessible content and in transforming existing documents into accessible formats, such as accessible EPUB, PDF, Word, PPT, closed captioning, audio transcription, accessible websites, and much more.

## Accessibility Resource Center

To accelerate our initiative of digital equality, we have created a not-for-profit Accessibility Resource Center.

[www.theaccessibilityresourcecenter.org](http://www.theaccessibilityresourcecenter.org)



Users access this portal to utilize free and valuable “do it yourself” tools and to stay abreast of the latest guidelines.

