



Making Speech Recognition Accessible to All

Compliance with federal disability standards is both right and good business

Every July, America celebrates its independence from British rule. This past July, many Americans also celebrated another type of independence: the 25th anniversary of the Americans with Disabilities Act (ADA). The ADA is but one of several federal laws enacted to prohibit discrimination against people who have disabilities.

While the ADA applies to all areas of public life, Section 508 of the Rehabilitation Act—another federal law that protects people with disabilities—governs the use of electronic and information technology (E&IT) at federal agencies. All such technology has to be accessible to people with disabilities, whether one is a federal employee or a member of the public.

If an E&IT product is not Section 508 compliant, the federal government may not purchase it. Section 508 applies only to the federal government, but many states, universities, and other countries are using Section 508 standards. And while Section 508 is not legally binding for non-federal agencies or the private sector, there are compelling reasons for businesses and software developers to comply.

More than a billion people worldwide are estimated to live with a disability, about 15 percent of the population, according to the World Health Organization. In the United States, roughly 20 percent of the population has some form of disability.

The intent of Section 508 is to avoid creating an environment that discriminates against people with disabilities, who are older, or who have conditions that limit their ability to interact with a computer interface. In short, making software compliant with Section 508 leads to more accessible software. And when software is more accessible, more people can use it.

The standards require that all E&IT products and services—telecommunications products, kiosks, intranet, multimedia, and office equipment—be fully operational without requiring vision or acuity better than 20/70; the ability to hear; the ability to speak; or fine motor control, or more than limited reach or strength. Alternatively, the product or service may be designed to be compatible with assistive technology (AT) used by people with disabilities. All layers of software (firmware, operating system and system shell, application, and programming tool kit) fall under the auspices of Section 508.

The rallying cry of people who use speech recognition because of disability amounts to “keep us in mind.” Frustrated that speech-to-text is incompatible with the programs they use, they generally believe they are not a valued

market segment; that speech recognition was developed for the mainstream population, as a tool for inputting text; and that marketing speech-recognition software to people with disabilities remains an afterthought. Indeed, about one-third of assistive technology is abandoned by users because it does not meet their needs.

“[T]he need for speech technology to be integrated into federal government systems is an underserved area that is vitally needed and rapidly expanding,” says Dawn Dunphy, who uses AT to perform her job at a federal agency.

David Baquis, accessibility specialist at the U.S. Access Board, believes it is imperative for manufacturers to ensure speech recognition is compatible with Web sites, software, and mainstream PC technology that follow Section 508 standards. “Speech recognition manufacturers need to come to the table.”

AT works by eavesdropping on the communications among apps, the operating system, and hardware components, and then acting as translator; thus, AT needs to be able to recognize what other programs are doing. In most cases, AT can retrieve that information if an app uses standard mechanisms such as system tools or APIs. The operating system then gives the AT the ability to recognize buttons, cursor location, and menu commands.

Best practices for developers adhering to Section 508 include ensuring the meaning conveyed by an image label remains consistent throughout an app; providing other means for conveying information besides color coding; eliminating repetitive navigation links to make content more directly accessible; when animation is in use, displaying information in at least one non-animated mode; having redundant text labels for controls and objects; and supplying accessible documentation.

“Accessibility is neither expensive nor difficult,” Baquis says, adding that manufacturers need to understand how serious this issue is. “People may lose their jobs because of incompatibility [between AT and E&IT].”

We can do better. Building E&IT according to Section 508 standards is a good place to start, and should lead to advantages for developers who accept the challenge. ☒

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