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**Screen Readers**

A screen reader is a form of assistive technology that allows users to access computers and the web via text-to-speech output or refreshable braille displays. They are commonly used by low-vision users, blind users, or deafblind users but also have application for the illiterate, the learning disabled, or anyone who would prefer to access content in an auditory rather than a textual manner. Screen readers work by the use of keyboard shortcuts, a speech synthesizer or braille display, and the program communicating with the computer’s application programming interface.

There is a multitude of different types of screen readers. The two most widely used of these are JAWS and Window-Eyes. These pieces of software are commercial products and the price for both readers starts at $895. JAWS, which stands for Job Access With Speech, also has a professional version which costs $1,095. Both JAWS and Window-Eyes work on Windows-based platforms and are available in multiple languages. There are many other screen reader options, some of which are free and open source or come bundled with operating systems. Examples of the latter include Microsoft’s Narrator and Apple’s VoiceOver, which now come installed as part of the operating systems on Microsoft and Apple computers.

A list of other screen reading programs includes Emacspeak, Yasr (stands for Yet Another Screen Reader or Your All-purpose Screen Reader), Speakup, Gnopernicus, Orca, Dolphin Supernova by Dolphin, System Access from Serotek, ZoomText Magnifier/Reader from Ai Squared, Linux Screen Reader, and NonVisual Desktop Access. Many of these are Linux/Unix derived and/or open source. However, they are much less popular and well-known than JAWS and Window-Eyes. Historically, screen reading technology has been closely bound up with computing technology. Screen readers were made possible by the development of IBM computers in 1982. Enable Reader, Soft Vert and the Enhanced PC Talking Program were some of the first commercial screen readers.

Despite all of the contemporary choices in programs, the user still experiences significant obstacles to accessibility when using a screen reader. As an initial barrier, the most commonly used readers, JAWS and Window-Eyes, have a prohibitive cost associated with them. Moreover, the prevalence of these two leading programs ensures that more training is given on how to use them as opposed to others. More training translates into more people being familiar with those specific readers and therefore an expensive ‘default’ cost exists for those less willing or able to venture off the beaten path to find viable alternatives. The omnipresence of JAWS and Window-Eyes makes it often more practical to use JAWS and Window-Eyes, despite their high price.

Although the availability of other screen reader options is certainly a positive thing which will likely transform for the better the landscape of screen readers in the future, it is nevertheless not a simple solution to the problem of the high cost of JAWS and Window-Eyes. The open source and free ones are simply not as well publicized or supported which makes them less desirable for conventional use. Additionally, not all of the non JAWS and Window-Eyes options are as comprehensive or complete as them. For example, VoiceOver and Narrator offer increased accessibility when compared to a computer with nothing but reviews of their effectiveness are mixed.

In addition to the high price or relative obscurity of some screen readers, there remain numerous accessibility problems associated with using them. Many websites are not coded to work well with screen readers, often making the user’s experience accessing the website an extremely frustrating one even if they have access to a high quality screen reader and the skills to use it effectively. The best screen reader and the most savvy and technologically skilled user cannot neutralize all the problems that are encountered in using a non-accessible website. A screen reader cannot interpret and relay an image to a blind user so if there is no alt-text on the image or if an image is a link with no provisions made for screen reader users, they will be unable to get any helpful information about it. Problems with screen readers properly navigating non-accessible menus and complicated code are common. A pervasive lack of compliance with ADA and Section 508 and a general lack of interest in accessibility compounds these problems.

Despite the problems with complete accessibility, the existence of screen readers enables visually impaired, learning disabled, and illiterate people to access computers and the Internet. Without such technology, the obstacles disadvantaging these persons would be vastly more significant. With screen readers, these users can better access Information Age technologies that would otherwise be made extremely difficult or impossible for them to use. The software allows for use of computer and the Internet for employment, education, and recreation/personal use -- all functions important for functioning in modern society and for success and satisfaction in life.

The screen reader technology represents one element of the opportunity that information technology offers for improving the inequalities that currently exist for disabled people. Screen readers create the possibility for improved physical and intellectual accessibility. If technology is designed with accessibility and universal usability in mind, we as a society can cease to leave disabled and disadvantaged users behind on the wrong side of the digital divide.

Libraries and other cultural institutions can assist with creating accessibility for the populations discussed above by embracing screen reader technology and making it widely available to all. Many libraries already offer free computer access and training and some even offer screen reader access and/or instruction in its use. However, more technological access in the form of software installed on library computers and more classes in using said technology would greatly improve the availability and feasibility of screen reader technology to those who would benefit from it. The high cost of purchasing JAWS or Window-Eyes for each library computer would be an obstacle to providing access of this sort. However, open source and free options could and should be explored, with the training and courses to match offered. There are great possibilities that can be realized, if libraries and cultural institutions choose to make the effort.

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