Online service lets blind surf the Internet from any computer, anywhere

June 25 2008

Visions of future technology don't involve being chained to a desktop machine. People move from home computers to work computers to mobile devices; public kiosks pop up in libraries, schools and hotels; and people increasingly store everything from e-mail to spreadsheets on the Web.

But for the roughly 10 million people in the United States who are blind or visually impaired, using a computer has, so far, required special screen-reading software typically installed only on their own machines.

New software, called WebAnywhere lets blind and visually impaired people surf the Web on the go. The tool developed at the University of Washington turns screen-reading into an Internet service that reads aloud Web text on any computer with speakers or a headphone connection.

"This is for situations where someone who's blind can't use their own computer but still wants access to the Internet. At a museum, at a library, at a public kiosk, at a friend's house, at the airport," said Richard Ladner, a UW professor of computer science and engineering. The free program and both audio and video demonstrations are at webanywhere.cs.washington.edu.

Ladner will demonstrate the tool next week in Dallas at the National Federation of the Blind's annual convention. WebAnywhere was developed under Ladner's supervision by Jeffrey Bigham, a UW doctoral student in computer science and engineering. The research was funded

by the National Science Foundation.

Free screen readers already exist, as do sophisticated commercial programs. But all must be installed on a machine before being used. This is the first accessibility tool hosted on the Web, meaning it doesn't have to be downloaded onto a computer. It processes the text on an external server and then sends the audio file to play in the user's Web browser.

"You don't have to install new software. So even if you go to a heavily locked-down computer, say at a library, you can still use it," Bigham said.

In May, Bigham was named the winner of the Accessible Technology Award for Interface Design for the Imagine Cup, a student programming contest sponsored by Microsoft Corp. The prize comes with $8,000 and a trip to Paris in early July.

For the past month WebAnywhere has been available on request. Bigham said he's received inquiries from librarians who would like to make all their machines accessible on a limited budget. He's also had interest from teachers who struggle to find the time to locate free software, get permission to install it on a school computer and then maintain the program so that a single computer is accessible to a visually impaired student. This software would make any computer in the lab instantly accessible for Internet tasks. The Web-based service also eliminates the need for local technical support: there is no software to install or update because each time a person visits the site he or she gets the latest version.

To test the software, researchers had people use the tool to do three things typically done at public machines: check e-mail, look up a bus schedule and search for a restaurant's phone number. People using WebAnywhere were able to successfully complete all three tasks, using a

variety of machines and Internet connections.

Like other screen readers, WebAnywhere converts written text to an electronically generated voice. So far the system works only in English. But the source code was released a few weeks ago and a Web developer in China has expressed interest in developing a Chinese version.

The UW team plans to create updates that will allow users to change the speed at which the text is read aloud and add other popular features found in existing screen readers. The service is currently hosted on a server at the UW campus.

Bigham is also working with Benetech, a Palo Alto, Calif., technology nonprofit that distributes free electronic books, to make its collection of more than 30,000 books accessible to blind users without them having to install any screen-reading software.

He believes this could be the first of many Web-based accessibility tools.

"Traditional desktop tools such as e-mail, word processors and spreadsheets are moving to the Web," Bigham said. "Access technology, which currently runs only on the desktop, needs to follow suit."

Source: University of Washington