Free Software Makes Using A Mouse Easier

Designed for people with motor disabilities

04/13/2011 | ConsumerAffairs | **By Mark Huffman**

For most people, using a computer mouse comes second nature, after a little practice. But for those with motor disabilities, it can be a frustrating experience.

The number of people affected by this may be increasing, as the population ages. But a University of Washington team has invented two mouse cursors that make clicking targets a whole lot easier.

Neither requires additional computer hardware - just some free, downloadable software. The researchers hope that in exchange for the software, users offer feedback.

Pointing Magnifier

One set of software, The Pointing Magnifier, combines an area cursor with visual and motor magnification, reducing need for fine, precise pointing. Getting near the target is all that's required.
The UW's AIM Research Group, which invented the Pointing Magnifier, learned that users can much more easily acquire targets, even small ones, 23 percent faster with the Pointing Magnifier. http://depts.washington.edu/aimgroup/
The magnifier runs on Windows-based computer systems and replaces the conventional cursor with a larger, circular cursor that can be made even larger for users who have less motor control. To acquire a target, the user places the large cursor somewhere over the target, and clicks.

The Pointing Magnifier then magnifies everything under that circular area until it fills the screen, making even tiny targets large. The user then clicks with a point cursor inside that magnified area, acquiring the target. Although the Pointing Magnifier requires two clicks, it's much easier to use than a conventional mouse, which can require many clicks to connect with a target.

Angle Mouse

Another AIM technology, the Angle Mouse, also is designed to help people with disabilities. Like the Pointing Magnifier, it may be downloaded, and two videos, one for general audiences and another for academic ones, are available as well.
When the Angle Mouse cursor initially blasts towards a target, the spread of movement angles, even for people with motor impairments, tends to be narrow, so the Angle Mouse keeps the cursor moving fast.

However, when the cursor nears its target and the user tries to land, the angles formed by movements diverge sharply, so the Angle Mouse slows the cursor, enlarges motor space and makes the target easier to get into. The more trouble a user has, the larger the target will be made in motor space.

"It's less expensive to create computer solutions for people who have disabilities if you focus on software rather than specialized hardware, and software is usually easier to procure than hardware," said Jacob O. Wobbrock, an assistant professor in the Information School who leads the AIM Group.

Try them both

Wobbrock suggests that users try both the Pointing Magnifier and the Angle Mouse before deciding which they prefer.

"Our cursors make ubiquitous mice, touchpads, and trackballs more effective for people with motor impairments without requiring new, custom hardware," Wobbrock said. "We're achieving accessibility by improving devices that computer users already have. Making computers friendlier for everyone is the whole point of our work."

The Pointing Magnifier work was funded by the National Science Foundation and the Natural Sciences and Engineering Research Council of Canada.