



Innovation. Inspiration. Integration.


Adapting the Technology

BRIDGING THE DIVIDE

When referring to the digital divide, the public only knows it as a gap between developed and developing countries, the wealthy and the poor. It is not widely known that there also exists a technological fissure for people with disabilities.

Consumer technology is constantly changing and improving; each upgrade is more user-friendly for the consumer than the previous version. But most of these technologies are not made with universal accessibility in mind, preventing many people with disabilities from using the technology without assistance. As society increases its dependence on technology, people with disabilities find themselves facing more barriers, especially in schools and places of employment.

Fortunately, with the support of assistive technology (AT), people with various disabilities can have access to mainstream technologies that many of us take for granted. AT includes devices that, when used in conjunction with the technology, allow users to adapt that technology to their needs. AT is the bridge that connects people with disabilities to the digital age; it provides them with access to information and the ability to gain knowledge.



*U*niversal *D*esign is an approach to designing that eliminates all limitations. It allows the product to be usable by everyone, regardless of ability, age or situation.

*A*ssistive *T*echnology is technology that allows for the performing of functions that might otherwise be difficult or impossible for people with disabilities. Among many other devices, assistive technology includes hardware, software, and peripherals that assist people with disabilities in accessing computers or other information technologies.

Reaching Out

CHANGING LIVES

At Open the windows (OtW), we are striving for a world where technology enables everyone to fully use his abilities. OtW is a service center that teaches, trains and promotes assistive technology. Before it became a Macedonian non-profit, non-government organization in 2005, OtW began as a project of Handicap International. The project, called e-Access, created a center for accessible IT, where people with disabilities can come to learn how to use computers with assistive devices and software.

The success of the project led the project managers to form an NGO to continue and expand on this work. These two project managers, an IT specialist and a special educator, believe that by giving people with disabilities access to AT, they will be able to acquire the knowledge and skills needed to integrate into their communities and participate in an e-society.



Since its inception, OtW has created 10 accessible IT computer centers throughout Macedonia and has trained over 80 teachers and special educators on how to adapt the computer. These accessible IT centers have enabled over 200 people with various intellectual and physical disabilities to access information technology.

Some of the benefits users receive from accessible IT include improved motor skills, cognitive functions, creativity, interaction and communication.

Transferring Skills

SHARING KNOWLEDGE

e-Access

The inaugural project e-Access continues to be our main program. Users come to our Center for Accessible IT to learn how to use adapted computers. We assess each user and discuss his/her wants and needs before customizing an individual work program. The work plan incorporates programs that are appropriate for the user's age.

- Pre-school Group (ages 5-6): Focus on educative games such as painting, coloring, and story telling through illustration. The aim is to develop cognitive skills (memory and attention), speech and motor skills.
- Primary and Secondary School Group (ages 7-18): Primarily work with programs for word processing, presentations and illustration. The aim is to support education by developing cognitive, social and communication skills.
- Adolescents and College Students (over 18): Users learn office programs as well as administering and managing networks. The aim is to enhance higher education studies and employment opportunities.

Capacity Building

OtW provides training and consultation on assistive technology to people with disabilities, educational institutions, government ministries, day care centers and businesses. We visit homes and schools to show parents and teachers how to adapt the computers.

We also solicit grants to support the opening of accessible IT centers throughout Macedonia. These centers are equipped with computers, assistive devices and software. Our team trains the centers' staff on how to work with their users and how to adapt the computers according to the users' needs.

e-Innovation Center

AT devices are extremely expensive and not affordable for the target groups. Our team works on the creation and adaptation of assistive devices and software to make it more affordable.

e-Resource Center

Training kits, manuals and other related published literature ensures the knowledge transfer of the collective experience to the target groups. Available resources can be found and downloaded in our Resource Center. These include:

- "How to make...." manuals for the replication of assistive devices;
- Manuals for the application and use of all accessibility options and other options that can support accessibility in Microsoft Windows XP;
- A catalog of existing assistive IT devices and software; and
- Good Practice Guide for using computer with JAWS (screen reader) for blind persons.

Vignette Dimitar

Dimitar has been coming to our Center for over a year. Initially, he had difficulties reading, writing and verbalizing his thoughts and needs. Working with our special educators on the computer, he has learned to break out of his shell and more easily express his wishes and interests. We use educative games to help Dimitar develop his cognitive functions. He happily notes that he feels more comfortable at school. Dimitar can now write stories on his own and proudly shows them to his parents. He also loves drawing on the computer and often surprises his younger brother by creating drawings for him. Every holiday Dimitar makes beautiful greeting cards for his friends and family.



Vignette IGOR

Igor is a fun-loving, tenacious young man who loves technology. Like everyone else, he uses Skype and email to socialize and catch up with friends and family. Igor recently graduated from secondary school and now works at a major Internet company. He enjoys working with his colleagues as much as he enjoys earning his own income. Assistive technology has enabled Igor to break through the confinement of his disability, to work independantly and be part of a community.

Universal Design

Assistive Technology

Contact
US

At our e-Innovation Center, our team researches and develops financially affordable assistive devices for persons with disabilities in order to facilitate their access to technology.

The newly adapted devices allow users to work on a computer at home, school and work.

Three assistive devices that were innovated/adapted include:

- Big Key Pointer Controller, for people with physical disabilities, who cannot use any other devices to control the mouse
- Single click to replace the mouse functions
- Access interface to connect clicks that emulate various keyboard and mouse functions



Hardware for physical disability

- Help shield for keyboard
- Arm/foot rest
- Mounting arm to hold devices
- Alternative keyboards
- Cursor control (TrackBall, Adapted joystick)
- Single switches
- Devices for monitor

Software for visual impairment

- Screen readers and speech synthesizer
- Scanner and text recognition software
- Speech recognition
- Braille translators (printing text on Braille printer)
- Braille display
- Magnifier, a program to enlarge text and images on the screen
- Accessible options in the operating system for visual impairment

Software for physical disability

- Virtual keyboards
- Virtual mouse
- Accessible options in operating system for physical disabilities
- Accessible software (Joymouse)

If you would like to learn more about our services or want to find out how you can support our work, please contact us or visit our Web site.

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