

New company's technology lets quadriplegics use the phone without physical assistance

December 20 2017, by Andrea K. Mcdaniels, The Baltimore Sun

A day after Oded Ben Dov appeared on Israeli television to promote his video game technology, which allowed players to control their games by moving their heads, a viewer called him with another suggestion for the software.

"I can't move my arms or legs," the viewer told him. "Can you make a smartphone that I can use?"

That conversation more than four years ago led to the creation of Open Sesame, an app that allows [people](#) to control a touch-screen smartphone or tablet hands-free. Instead of swiping with a finger, the technology lets users control the device with small head movements or voice commands. The technology can help people who are paralyzed or have limited mobility due to neurodegenerative diseases such as MS or ALS.

The technology caught the attention of Maryland government officials during a 2016 trade mission to Israel. As a result of the relationship developed then, Ben Dov moved the headquarters of his technology company, Sesame Enable, from Israel to Bethesda last month.

The state is now covering the cost of tablets with the Open Sesame technology installed for low-income people with certain disabilities, much like it does for text and braille telephones for the deaf and blind through its Maryland Accessible Telecommunications program.

"Adding Open Sesame to the growing number of assistive technology

resources Maryland Relay provides allows us to serve even more Marylanders, connecting them with the technology they need to lead fulfilling and productive lives," said Lance Schine, deputy secretary of the Maryland Department of Information Technology.

Ben Dov said he liked the idea of using his technology to help people. People can use the app using their own devices, or they can buy a bundle from Sesame Enable that includes both the hardware and software.

"The phone call shifted something in my mind and took me on another route in my life," he said. "No more video games."

About 5.4 million people, or 1.7 percent of the U.S. population, lives with some form of paralysis, according to the Reeves Foundation.

The Open Sesame app is one of the latest products in the growing field of technology targeting those living with paralysis and other disabled people. Smart phones and tablets have helped spur development of some of the latest technologies. There are devices, for example, that translate sign language into text messages and alert people in wheelchairs that they need to move to avoid pressure sores.

"We know our smartphones are now basically small computers that can not only help with communication, but allow people to do all sorts of other activities," said Dr. Marlis Gonzalez Fernandez, vice chair of clinical affairs in the department of physical medicine and rehabilitation at Johns Hopkins University School of Medicine. "It is opening up a whole new set of opportunities for people with disabilities who can't use their hands."

The devices are enabling many with disabilities to live more independently and perform basic activities they couldn't do on their own. For some, it has provided a sense of normalcy, independence and,

perhaps most importantly, connectedness.

Severely disabled people sometimes find themselves alone and isolated from others. Ben Dov said some of the [disabled people](#) he has spoken with just want to be able to take a selfie or browse Facebook, something his technology allows them to do.

"Making social connections is such a big problem for people with disabilities," said Dr. Henry S. York, director of the spinal cord injury unit at the University of Maryland Rehabilitation and Orthopaedic Institute. "This allows them to interact with others and not be isolated at home."

Rick Frame, a 54-year-old from Texas, first learned about Open Sesame from a news story a friend forwarded him. Frame became a quadriplegic 15 years ago after he was rear-ended and thrown over a bridge while on his motorcycle. Until he began using the app, Frame said he always needed someone to dial the phone for him and pick it up when it rang.

Now he can use the phone by himself. Frame spends most of his time in bed and now keeps his smart phone on a table that sits on his lap.

"When I am home alone or no one else is around, this makes me feel more secure because I can call someone if I need help," Frame said.

Those who work in rehabilitation said that Open Sesame is one of the more advanced systems they have seen to help the disabled use the phone. Other devices are more limited in what they can do, York said. For instance, some require using a proprietary computer or wearing a sticker on one's forehead for the device to detect.

"We have plenty of devices in our gyms that are costly and not available to many people," York said. "(Open Sesame) is one of the first I have

seen in a while that I think has the potential to impact the masses."

By paying for the costs of tablets the state will help more people access products like Open Sesame, Gonzalez Fernandez said. She said insurance companies or government health programs typically only subsidize products that are solely for a medical purpose. A tablet has many uses.

Eight states, including Kansas, Missouri, Texas and Wisconsin, are subsidizing devices to various degrees, according to Sesame Enable. For instance, Kansas fully funds a tablet or phone with the software installed and Texas offers a \$550 coupon to cover the cost of a tablet or phone.

With its headquarters now in the United States, Ben Dov hopes to bring more states onboard.

Ben Dov said he chose Maryland for his company's headquarters because of the state subsidy program and Bethesda for its proximity to health institutions, including those focused on veterans such as the Walter Reed National Military Medical Center and the VA Medical Center in Washington, D.C.

Being close to Washington has other advantages.

"We know we'll have opportunity to influence change needed to make our technology readily available to all Americans who can benefit from it," he said.

The company currently has five U.S. employees and plans to hire up to five additional Maryland residents who are veterans or have limited mobility disabilities.

Giora Livne, the man who called Ben Dov more than four years ago and helped co-found the company, was involved in the testing of the

[technology](#) and is now Sesame Enable's vice president of accessibility.

Ben Dov said Livne is most happy that he can now order flowers for his wife on his own.

"We are making basic things in life accessible to so many people that need it," Ben Dov said. "I am grateful for that."

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Citation: New company's technology lets quadriplegics use the phone without physical assistance (2017, December 20) retrieved 26 April 2024 from <https://phys.org/news/2017-12-company-technology-quadruplegics-physical.html>

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