

COMMUNITY VIEW



A device controlled by a puff of air was designed by Lon Safko to aid individuals who don't have use of their hands.

At your command

Computer system allows disabled to regain some abilities in a breath

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One of Lon Safko's fondest memories is "how I got my guts ripped out" displaying his new computer system at Children's Hospital in New York City.

Safko had his system set up for a group of hospital administrators. Behind him, they wheeled in a 12-year-old girl who was born without arms or legs and who was duct-taped into a wheelchair.

"She had a brighter smile than I ever had on the best day of my life," Safko recalls.

Safko attached the child to his system, which allows the disabled to operate a standard Apple computer without using their hands. Then he went back to his sales pitch.

He heard the girl giggling and turned around to see her flicking a lamp off and on by using the computer. It was the first time in her life she had ever turned on a light.

"She was so excited, she started jumping up and down in her wheelchair. I don't know how you jump up and down without any legs, but she was doing it.

"Then the nurses started crying and I had to excuse myself and I went out in the parking lot and cried for 15 minutes," he said.

Safko, 38, never intended to design computer equipment for the handicapped.

He is, by education, a civil engineer, trained to build roads and bridges. He doesn't have any disabled relatives, nor does he have any friends who are handicapped.

Safko had been managing two Apple computer stores when he founded Safko International Inc. in Kennewick, Wash., in 1986.

He moved the company to Chandler in 1992 and relocated to Tempe last year.

His involvement in computer systems for the disabled began in 1985 when he was asked by a customer to help a man who had been paralyzed from the neck down in a freak fall.

The man had lost his job, his wife had left him, he refused to eat or accept medicine and doctors believed he would die within weeks unless he could be brought out of his deep depression.

Safko devised a voice activation system that would allow anyone to use a computer without ever touching it. He had the prototype delivered to the man and a short time later went to check up on him.

"I went into his room and saw his bed was all neatly made up and I thought he must have died," Safko said. "Then I saw him in a corner seated at the computer."

The man said, "I can work again." And Safko's new career began.

Safko abandoned voice activation in 1988 as too unreliable, which he still believes, despite the introduction of a new voice activated product line by IBM.

His system is electrical and mechanical. It is built around an Apple Macintosh computer which is controlled by users through a "server" that translates puffs of air into commands.

At its simplest, the system — called SenSei (Japanese for "teacher" or "master") — allows the

user to control up to 256 home appliances.

At its most complex, SenSei allows a disabled user to hold a job without ever leaving the house. Safko has designed 80 software packages.

"The concept was to make it so simple even the cognitively disabled could use it. At the other end, I wanted a system with capabilities that are virtually unlimited."

The main menu is a picture of a room. Place the cursor on a lamp in the picture and give the computer a command and a real lamp switches on.

The difference is in how the system is operated. A person with use of his or her hands would use a standard mouse or the keyboard.

A person without use of his or her hands moves with a device attached to the head and then blows into a tube to give the computer a command.

A person who cannot see the screen can move the cursor around and a synthetic voice will identify each object as it is pointed to.

"I can take someone with no training, put him in a room with this system, tell him to dial a telephone number and within three minutes he'll figure it out," Safko said. After five years of testing at hospitals and rehabilitation institutions throughout the country, the SenSei went on the market earlier this year.

"One of my major concerns was to keep it affordable," Safko said.

People who already own a Macintosh can buy a system that will operate all the household appliances for \$1,500.

A package that includes every piece of hardware and software Safko makes, a computer system, installation and training tops out at \$15,000 — about the price of a very modest car, or an electric wheelchair.

