

BUSINESS PARTNERS

Ed Prentke, '26 looks back on a career that took him from radio repair to designing assistive technology for the disabled and eventually to a profitable partnership with another Case, Barry Romich '67. "When I first graduated from Case, it was a hard time to get a job," Prentke recalls, "so I went from house to house doing radio repair." He later ran a machine shop that created parts for aircraft, owned a camera store, and taught electrical engineering classes at Case and Fenn College in Cleveland. But his real life's work was still ahead of him.

It was 1964, when Prentke began a new career at MetroHealth hospital in Cleveland at an age when many consider retirement. "My job there was to build things for paralyzed patients," he says. "Whenever they needed something custom made, I did that." The result included "blow and suck" devices that allowed these patients to tune in TV sets, operate speaker phones, and call the nurses in the hospital.

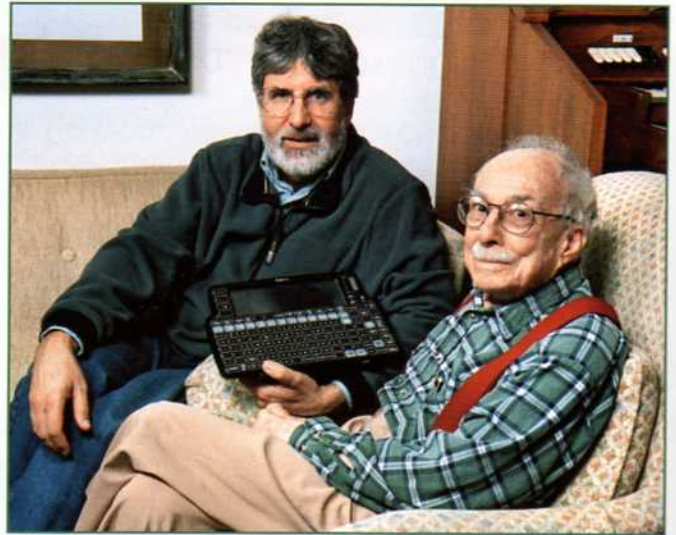
Prentke first met Romich during his partner's student days at Case. At the same time, Prentke had begun his MetroHealth career. Prentke and Romich, both electrical engineers, began working together. Romich recalls, "Some of our original work was as a result of Ed's job at MetroHealth. A federally-funded research project on medical engineering was a joint effort with the hospital and Case. The work was done mostly in the Engineers Design Center in the Bingham Building on campus. I was working there part time in student employment, but the practical side of the work was done at the hospital. The grant did not allow patients to receive practical tools, because it was theoretical research.

So we made them on the side. We designed and built these devices one at a time on evenings and weekends for nine years. One problem we had to solve was that our automatic dialing telephones device used AC power, which made it vulnerable to power failures. We redesigned them with rechargeable batteries."

"We have Case to thank for the existence of our company," says Romich.

The pair incorporated as a business in 1975. Prentke is retired now, and Romich is the chairman and CEO. Today, Prentke Romich Company headquartered in Wooster, Ohio employs 85 people and has international divisions in the UK and Germany. The privately held firm anticipates \$13-14 million in sales this year. PRC offers several primary augmentative communication products and dozens of accessories. The company also offers products that allow access to computers by people with disabilities who are unable to use the standard keyboard and mouse. These customers include people with cerebral palsy, autism, Lou Gehrig's disease, various neurological and brain injuries, and strokes.

Over the years, PRC's products have been based on a wide range of technologies. Early products relied heavily on discrete semiconductors. Then came analog and digital integrated circuits. Romich recalls, "Our first product was a communications system based on a discarded teletype machine. A paraplegic patient at the hospital helped with the design of it." Ed chimes in, "It was a spelling device and



Barry Romich and Ed Prentke show off the Pathfinder device that enables communication for people who cannot speak.

pretty slow." They tackled the problem of the frustrating slowness of using a device where one letter had to be tapped out at a time to spell words. While that first invention was plugged into the wall for power, subsequent units needed to be portable. PRC used some of the first low-power integrated circuit logic. In the 1970s they began using low power CMOS microprocessors in their devices, but that required programming. They brought programmers on board. "After that we offered the Express I, our first battery-powered portable product with a vocabulary that could be customized. Today, virtually every product has one or more microprocessors inside." says Romich.

"The technology enabled something else," Romich continues. "The most important aspect of these communications systems is how language is represented. The technology has to support the language. In 1980 we were approached by a linguist, Bruce Baker, who devised a language representation method based on short sequences of multi-meaning icons. The implementation of this intellectual property was made possible by the microprocessor.

This method can be four times as fast as spelling. This has been a major communication breakthrough for people who cannot speak."

They appreciate that their success is based on the creative side of engineering. "I love to work with my head and my hands. I love building things. My favorite project was the automatic-dialing telephone," says Prentke. "People who go into engineering are problem solvers, and the process of engineering education enhances that. It can be a blessing and a curse. It's common for us to see a situation and always try to find a way to make it better," adds Romich.

Ed Prentke and Barry Romich contribute to the needs of the disabled through the AAC Institute, a charitable organization dedicated to evidence based AAC clinical practice. Learn more about the institute by contacting Romich or through the AAC website: <http://www.aac institute.org>.



"BEING IN CLOSE CONTACT WITH DISABLED PEOPLE AFFECTS ONE'S ATTITUDE ABOUT LIFE. IT'S HARD FOR US TO GET DOWN WHEN WE SEE SO MANY PEOPLE WHO FACE SO MANY CHALLENGES. THIS IS MORE THAN A JOB. IT IS A MISSION."

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