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Consumer Technology

At the Sound of Your Voice

Speech-recognition software is improving to the point where it's actually useful

By JEANETTE BORZO

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At long last, speech-recognition technology is finding its voice.

For years, the technology has been dominated by dictation software and telephony applications such as call centers that let you book a flight without talking to an operator. But these applications often frustrated users as much as they helped them. "First-generation speech-recognition technology made you want to put a bullet in your head," says Patrick Knorr, general manager of Sunflower Broadband, a Lawrence, Kan., cable operator.



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Now, improvements in technology have changed all that. Powered by better software, remote computing power and new design principles, speech recognition is rapidly improving in gadgets such as cellphones. And it's spreading into a broad spectrum of other consumer devices, everything from television remotes to car

stereos.

"The technology has progressed so that people can actually use it," says Susan Shapiro, a high-tech marketing manager in Hopkinton, Mass., who has spent a decade trying speech-recognition software and gadgets for her personal use.

"There's been a dramatic increase in viability and quality. Speech-recognition technology has come of age."

Booming Voice

Analysts don't break out the size of the market for these new applications. But the overall market for voice-recognition technology is growing, and these new products and services are expected to benefit from the booming interest.

In part, these new applications are succeeding by limiting what they're trying to accomplish. Instead of trying to understand everything that a speaker might say, as voice-to-text dictation software might do, the new products are designed to recognize only a select number of names or phrases. This means the gadgets don't have to sift through endless possibilities to figure out a user's command -- which in turn brings more reliability and much faster performance.

Take the communications badge from Vocera Communications Inc. of Cupertino, Calif., a wearable device that

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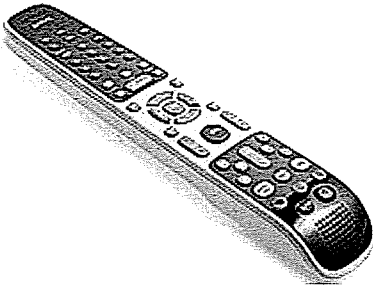
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lets users talk to each other over a Wi-Fi network, something like a two-way radio. The device is designed for only 50 or so voice commands -- such as "Call" or "Find" another user -- and only about 10 are used regularly, says Brent Lang, Vocera's marketing vice president.



TALK TO THE HAND Promptu's voice-activated remote control

Many newer voice-recognition products also eliminate one of the big drawbacks of earlier consumer applications: "training." In the old days, users would have to speak into the gadget extensively to get it to recognize the quirks in their speech patterns. Now many applications work right out of the box.

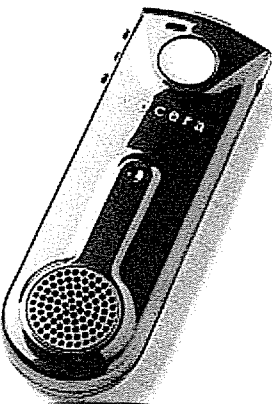
Ms. Shapiro, the marketing manager, tried two phones with built-in speech-recognition features such as voice-activated dialing. But neither phone reliably responded to her commands to dial by number or name, even after repeated attempts at training.

Late last year, she got a Samsung Electronics Inc. phone loaded with VSuite technology from VoiceSignal Technologies Inc. of Woburn, Mass. All Ms. Shapiro had to do was transfer her contact list to the phone from her computer -- and then start talking.

"Ninety percent to 95% of the time, it gets it right," she says. "That's more than good enough for me."

"What VoiceSignal and others are doing is important because they are enabling voice recognition without the user having to do any training," says Jackie Fenn, a vice president at Gartner Inc., a Stamford, Conn., research firm. "That will drive adoption."

Closely held VoiceSignal says it reached profitability in 2004 and more than doubled its revenue from 2004 to 2005. Through early 2006, 50 million phones had shipped with VoiceSignal technology, and the company expects as many as another 50 million to ship this year, according to Chief Executive Officer Rich Geruson.



Vocera's wearable communicator

A New Calling

The improved voice-recognition technologies are helping to power a host of new services, as well. For example, Electronic Learning Products Inc., of Tampa, Fla., has been selling a software application since last year that teaches singing. The software's pitch-recognition technology identifies what notes a person is singing and then provides visual feedback onscreen: A line on a musical staff indicates what notes are actually being sung, next to the notes as written in the song.

Electronic Learning Products is adding voice-recognition features to its pitch-recognition technology to improve pronunciation, as a way to boost students' reading and language skills. The first product using the technology, Tune Into Reading, is expected to launch this month.

Meanwhile, Gracenote Inc., Emeryville, Calif., is developing software that will enable users to navigate their music collections with simple voice commands. The new product, called MediaVOCS, will make it easier to locate digital music on car-stereo systems and other products.

Using the system, drivers will be able to say, "Play 'Pinball Wizard,' and boom -- it's playing," says Peter DiMaria, product-management director for Gracenote, which is best known for its vast database of music titles and artist names, used in digital-music applications such as **Apple Computer Inc.**'s iTunes. "Even if music is spread out over five different albums, you can say, 'Play Aretha,' and tunes from Aretha Franklin will start."

The product is expected to come included in car-stereo systems for some 2008 and 2009 models, as well as some after-market car stereos from manufacturers such as Panasonic Automotive Systems America, a division of

Japan's **Matsushita Electric Industrial Co.**

Other companies are giving their speech-recognition products more power by letting remote computers do the heavy lifting. Users still speak into a hand-held gadget, but some elements of the command are beamed to remote computers, where they are processed. VoiceBox Technologies Inc. of Bellevue, Wash., for example, uses this so-called distributed speech recognition to power a variety of speech-enabled mobile phones, cars and digital home applications expected on the market later this year.

Sunflower Broadband, the cable operator, has been testing a voice-enabled remote control that uses this distributed technology. The remote, from **Promptu Corp.** of Menlo Park, Calif., lets users search cable offerings by, for example, saying the name of a show, an actor or a program category. "We distribute the processing between the device and very large servers," explains Brady Bruce, Promptu's telecom-services senior vice president.

For instance, Mr. Knorr, Sunflower's general manager, is a fan of documentaries. When he says, "Scan documentaries," he sees a listing on the TV of all the documentaries that Sunflower will air in the coming two weeks.

Sunflower plans to introduce the technology later this year. In addition, Promptu expects to roll out the remote with other major cable companies sometime in the fourth quarter of this year or the first quarter of 2007, says Dave Hanson, Promptu's co-founder and business-development senior vice president. He wouldn't specify the companies or the markets that will get the remote. But the same Promptu technology will debut in some mobile phones next year, letting users ask their mobile, for example, to download a certain ring tone or popular game.

Nothing to Shout About?

It remains to be seen, of course, if consumers will take to these new products -- particularly if they've had bad experiences with voice recognition in the past. For instance, even though he likes his remote, Mr. Knorr of Sunflower says he has been burned by voice-enabled phones and is in no rush to try another. As Promptu's Mr. Bruce puts it, "Our biggest competitor is people's past disappointments with voice technology."

Still, many users are beginning to find that plenty of today's options are more than good enough for daily use. Bob Walsh, director of emergency services at Riverside Methodist Hospital in Columbus, Ohio, had been looking at speech-recognition technology "for 10 years or more," hoping to improve staff communications in his hectic work.

Two-way radios just didn't do the job. "They were quite heavy, and there were lots of battery issues," he says. Plus, every time you spoke, "55 others would hear" the page.

When he saw a demonstration of the Vocera badge a few years back, "I immediately recognized this as something we needed," he says. Now Riverside uses the badges for communications among doctors, nurses and other hospital staff as they treat some 85,000 patients annually in the emergency department.

To consult with a physician working in another wing, a nurse pushes the badge's button and says, for example, "Call Dr. Howard." Even though Dr. Howard has his hands full, he can answer the call on his badge with a verbal command. Voice traffic is carried over a wireless Wi-Fi network, similar to ones used for mobile Internet access.

Mr. Walsh says the Vocera badges understand what the staff is saying 90% of the time or better. And that, he says, is a "big improvement" over where the technology used to be.

—Ms. Borzo writes about technology and business from California. She can be reached at reports@wsj.com⁵.

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