Speech-recognition technology is rapidly improving

July 23 2009, By Troy Wolverton

Maybe I watched too much "Star Trek" when I was younger, but I love the idea of being able to command things in my house or in my car by talking to them.

I'd love to be like the Enterprise's Captain Picard and get a cup of tea by walking up to a wall panel and saying "Earl Grey, hot."

I'm not holding out for a voice-activated replicator. I'd settle for simpler stuff, such as being able to set the thermostat, turn on my oven, switch off the lights or record a ballgame by simply speaking my wishes out loud.

Unfortunately, my real-life experience with speech recognition technology -- and I'm guessing yours, too -- has been nothing like "Star Trek." Instead, it's been largely frustrating and sometimes infuriating, what with voice-dialing cell phones that can't understand who you're asking them to call and phone trees that respond to simple voice commands but won't direct you to a live person who can handle more complex questions.

But if speech recognition advocates are to be believed, the science fiction world of widespread and well-functioning voice-controlled devices and appliances is finally just around the corner.

"I think we're seeing a real renaissance here," said Bill Meisel, a longtime follower of speech-recognition technology and editor of

Speech Strategy News, an industry newsletter.

Meisel foresees a not-so-far-off world in which our mobile phones serve as a universal remote that allows us to control and program everything from TiVos to alarm clocks with our voice.

Todd Mozer, CEO of Sensory, a Sunnyvale, Calif.-based speech-recognition company, envisions a soon-to-come world filled with speech-controlled Internet devices, or SCIDs.

One example of such a device might be a clock radio that could not only tell you the current time when asked, but could also, using its Internet connection, tell you the weather in Boston.

Regardless of how the future unfolds, advocates such as Meisel and Mozer say it's nearer than most people might think. Voice recognition is not some pipe dream, but a maturing technology that has improved in recent years and already works well in certain circumstances.

Widespread adoption of speech recognition has been delayed by problems with accuracy, advocates acknowledge. But thanks to Moore's law, computers and microprocessors are getting faster at processing spoken words. They're also able to sort through and compare what's spoken with increasingly large databases of recognized words and ways of saying them.

Developers are also improving accuracy by narrowing the problem.

Some do that by limiting the number of words a device needs to understand. A Bluetooth headset, say, may recognize only a handful of commands. But it will understand those commands so well that it can respond to them, no matter a person's accent and despite having to listen for them over a talk-radio program.

Another way of narrowing the problem is to categorize the information sought, or focus on industry-specific vocabularies. Some speech-to-text programs, for example, are specifically designed for particular medical professions, such as radiology.

But it's more than just improved accuracy that has advocates excited about prospects for speech-recognition. The technology has become a big business, and major corporations, such as Apple, Microsoft and Google, are pushing it. Speech recognition technologies have become commonplace not only in cell phones and phone trees, but also in particular industries, such as transcribing medical records or even for use by workers in larger warehouses.

And two other trends could help move speech technologies into consumers' homes. One is the growing demand for more "natural" ways of interacting with technology products, such as by using gestures on a touch-screen or via motion-sensing controllers. Some analysts think speech works well in tandem with other natural interfaces.

The other trend is the growing number of home networks and Internet-connected devices. Having a network connection allows devices to download updates that would improve their speech recognition capabilities over time. It also can let devices tap into more powerful speech recognizers either on the local network or out on the Internet.

Indeed, getting speech-controlled devices into the mainstream is becoming less an issue of technology than consumer acceptance, advocates say. The more consumers are exposed to speech recognition services and have positive experiences, the more likely they'll seek speech-based interfaces in other areas, argues Meisel.

"People's attitudes have been colored by unpleasant experiences," said Meisel. "(Those) attitudes will change."

Here's hoping he's right. Dreams of "Star Trek" aside, I'd be happy to simply have my phone recognize when I want to dial my sister.

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