

Cloud Computing Promises Hi-Tech Talk in 2011

Women may not always be avid adopters of new technology, but Amy Neustein says cloud computing is something to know about. The emerging technology's voice-recognition applications may soon save lives along with everyday aggravation.

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(WOMENSENEWS)—Women may still be a small fraction of early adopters of new technology but right now we have a hot topic in Internet technology—cloud computing—that is right up our alley.

Its core philosophy is using the Internet to share costly resources such as software and data. How many women over how many eons have stretched a tight budget by sharing?

So, let's take a good look at what's going on.

Computers connected through a network of remote servers form the so-called cloud. They provide individual computers with massive amounts of new capacity—in terms of data storage and software—that is powering a transformation in the area of voice-recognition and voice-activation.

A sign of this came in December, when technical product managers at Google's Mountain View, Calif., headquarters announced a cloud-based improvement to one of its smart-phone applications that lets a user search the Web with a voice command.

The new application will further "personalize" the voice-searching function. It will listen to your voice and learning how you — as a unique individual — speak. It will adapt to your dialect, vocal stress patterns, pitch and inflection.

To do this, programmers tap into the cloud to create an individual account for each speaker that chooses personalized recognition — and begins to associate the smartphone user's unique voice features with those in this special account.

All of this will allow the phone to transmit commands and messages that are more recognizable to speech-activated software.

Less Vexation

The goal is to reduce those vexing errors that arise when we ask voice-activated equipment to perform such chores as giving us driving directions, taking a food-delivery order, dialing a phone number, converting voicemail to text, or even searching the Web for the latest developments in a breaking news story.

This kind of computer "intelligence" wouldn't be possible if each phone had to depend on the limited memory found on such mobile devices. It would overburden the server.

But when the phone taps a network of servers through cloud technology, the boundaries open up considerably.

Cloud technology can improve our interactions with automated call centers, says Daniel O'Sullivan, CEO and founder of New York-based Interactive Digital, a software company that provides adaptive technologies for improving voice user-interface design.

His company is striving to make automated call centers assist callers better by tracking a caller's voice patterns in responding to phone-tree questions or "prompts." Those patterns and vocal features can cue the machine to provide more instructions, fewer instructions, or a slower or faster pace.

"We don't keep logs of calls, nor do we depend on caller profiling or call-in history either," says O'Sullivan.

Instead, the cloud processes attributes of the caller's voice and speech during the call to adapt immediately, even if, for instance, a caller is distracted by outside noise or is tired at that moment.

O'Sullivan says this kind of cloud computing can help businesses by preventing customer burnout. "Frustrated callers can be preemptively transferred to live agents before they give up and hang up," he says. And the cloud makes this possible without expensive customized programming at a company's local server.

Life-Saving Potential

Cloud computing's voice-sensitive applications also have life-saving potential.

In Gujarat, India, a young scientist at the Dhirubhai Ambani Institute of Information and Communication Technology, a 7-year-old old state university, has investigated using them in the treatment of newborns suffering from pulmonary dysfunction or other life-threatening conditions. The process works with a small digital recorder placed within 5-10 centimeters of the infant.

"So much can be learned about a newborn's state of health from the infant's cry alone," says Dr. Hemant Patil. "Due to recent advances in cloud computing technology, healthcare professionals can rely on fully outsourced computer services rather than individual servers, software packages, data-center space or network equipment. In this cloud computing environment we can transmit an infant's cries through a mobile device . . . through a Web interface to servers that are connected to each other."

This means that danger signs in a sick baby's cry will not be missed, even if the infant is in a rural hospital without access to high level monitoring performed at teaching hospitals. A centralized computer system can provide that sophisticated monitoring instead.

This kind of technology could make the brand new year ahead a time of enormous change and discovery. A year from now, an article about the applications of cloud computing will probably have a lot more to say.

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