VoIP applications erase boundaries

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Few people live with the technology they promote as closely as Craig Cotton.

Cotton, manager for marketing Internet telephony products for Cisco Systems Inc., sometimes can be found in his office in California and other times in Texas, but his office works from his home in Guernsey.

He picks up his e-mail whenever he is without much difficulty, of course, and his phone calls are equally simple. Cotton has one work number, with a California area code, that rings wherever he's working.

"These products fully eliminate geographic boundaries," said Cotton. "Without them, I could never stay in the Midwest and do my job."

The productivity increases and cost savings that come from combining voice with data networks are driving the popularity of voice over Internet protocol, or VoIP.

Cisco was among the first companies to jump into VoIP, but now has some 10,000 enterprise customers, and it shipped its 2 millionth VoIP phone last year—and that will grow by an additional million sometime soon.

While Internet telephony has been around for several years, most agree this is the year VoIP has achieved the klutz status, as the hat-in-the-ring around.

Because VoIP is delivered over network servers that cost around $10,000 apiece rather than switches that cost orders of magnitude more, it has lowered the entry barriers for newcomers and drawn attention from folks with new application ideas, Cotton said.

Some applications are elegant in their simplicity, he said.

"There's an IP phone where all you do is speak commands into the phone and you get data on a screen," he said. "This is perfect for the executive who's so computer-phobic that he needs his assistant to do his e-mail."

Bringing a computer's flexibility to the world of voice communications means that relatively inexpensive software can provide innovative attractions.

One Cisco customer, a government agency, had to install an emergency notification system for employees to comply with new regulations.

A traditional system with loudspeakers and such would have cost millions, Cotton said, but the agency opted instead for a system that issued emergency messages over some 4,000 speakerphones it already had in operation.

"It cost something like $150,000 instead of $1.5 million," he said.

The next innovation to watch for will be IP phones that work over Wi-Fi, the wireless broadband technology that's been growing in use for years.
VoIP buzz is building as a propitious time for Cisco, Cotton said, because many enterprises last updated communications systems in 1990 to prepare for the Y2K problem.

"Many of them signed five-year leases that are now expiring," he said. "They're ready to migrate to something new."

Water works: The wastewater you flush down the toilet can be used to generate electricity in a fuel cell while the water is being cleaned, environmental engineers at Penn State University demonstrated.

The experiment showed that bacterial action in the wastewater generates electrical current that could be captured in a fuel cell.

In early renditions, the amount of electricity was miniscule—not enough to fire up even one Christmas tree light—but researchers hope to boost the power.

"If power generation in these systems can be increased," said Bruce Logan, director of the project, "this technology may provide a new method to offset wastewater treatment plant operating costs."

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