

MIT'S MAGAZINE OF INNOVATION

# TECHNOLOGY

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# The Invention Issue

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KILLER  
PATENTS  
P.66

**PLUS:**  
Global invention map

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*Compliments of*  
**John E. Curtin, Esq.**

# killer patents

They could save you from surgery, transform your telephone, and provide all the handheld computing wizardry you'll ever want. After scouring corporate and university labs around the world, *Technology Review* found five patents issued in 2003 poised to change computing, medicine, communications, and security.

**ILLUSTRATIONS BY GREG MABLY**

## A GOOD CALL FOR THE INTERNET

Lucent Technologies

**INVENTION:** Method for ensuring that voice data packets get high priority on the Internet

**BENEFIT:** Could give Internet telephony the same reliability and high quality as landline phone calls

# No. 6,529,499

**IN THEORY**, using the Internet to make phone calls could revolutionize telecommunications by enabling cheap links to anywhere in the world, the convenient bundling of voice messages and e-mails, and services that integrate voice and video. But in practice, service quality is still a major stumbling block to widespread implementation. An Internet call—like all other data on the Internet—is broken into packets that travel along myriad pathways where they must compete for bandwidth. The result: Internet calls can become riddled with clicks and short delays.



A patent issued to Lucent Technologies—the company's 30,000th to date—describes technology that could improve Internet telephone service, finally unlocking its full potential. Lucent's innovation is software that behaves like a traffic cop for data packets—but a traffic cop that has some clear preferences. The software receives information about bandwidth capacity and determines whether to allow packets for Internet calls onto a given network path or to direct them to a different, less congested path. The software then ensures that real-time data packets, such as voice data from conversations, are given priority.

While many other approaches to solving the Internet telephony problem simply add more routers or increase bandwidth on local networks, Lucent's method works with existing equipment, says Yung-Terng Wang, one of the inventors. Indeed, "Lucent's proposal seems to be simple enough and does the job," says Steven Low, a computer scientist at Caltech, whose group works on Internet congestion control.

The company will incorporate the technology into systems it sells to telecom companies like Qwest of Denver, CO, and Phonom of Richmond, VA. Of course, Lucent isn't the only player looking to improve Internet telephony. But given its technical background and expertise, a lot of people are listening clearly to what the company has to say. **TRACY STAEDTER**

*We were instrumental in assisting Lucent Technologies, Inc. in obtaining issuance of U.S. Patent No. 6,529,499*

*John E. Curtin*

*Dobson and Pierce, P.L.C.*