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Clear Signals for Internet Phones

Carrying voice calls with Web technology is gaining momentum with customers-and Bells and cable companies

The people of Appleton, Wis., have long been open to new technology. The city of 76,000, about 100 miles north of Milwaukee, was home to the nation's first hydroelectric power plant in 1882 and the first successful electric-cable-car company in 1886. So perhaps it shouldn't surprise anyone that Appleton is a pioneer in telephone technology. About 18 months ago, the city's schools replaced their regular phone network with an optical-fiber system based on Internet technology. Combining voice and data on a single high-speed wire, the school district has reduced telecom expenses by 30% a year. "I can't think of moving back," says Jim Hawbaker, the district's director of technology.

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Now, the rest of the country is beginning to catch on. As consumers and businesses look for lower costs and more innovative services, the phone world is turning to Internet technology. Called IP telephony because it uses Internet protocols, or standards, the technology has started to move into homes, offices, and classrooms. Phone companies that switch to IP can reduce their operating costs by 20% to 30%, which would save the Bells a combined \$7 billion to \$10 billion each year. And saving money, even a few billion, is the least of it. The real benefit is that IP will enable all sorts of innovative services, desperately needed to reverse declining revenues.

Mass deployment of IP telephony is in the works. Telecom companies Verizon Communications Inc. and Sprint ([FON](#)) Corp. plan to convert

their entire networks to IP over the next decade or so. Cable-television operators such as Cablevision Systems ([CVC](#)) Corp. are rolling out IP phone service, too. "With the technology shift to IP, we hold a lot of hope," says Rian Wren, Comcast ([CMCSK](#)) Corp. general manager.

Customers are buying IP because of substantial quality improvements and big cost savings. Forget talking to a microphone on your computer and listening over the hiss of your PC's speakers. The new generation of IP phones are nearly indistinguishable from regular phones. They have a keypad and handset, emit a dial tone, plug into a wall jack, and connect smoothly with any other phone. The technology is legit enough that Merrill Lynch & Co., as well as several other big companies, is using IP phones on its corporate campus in Hopewell, N.J. Customers don't realize it, but some 10% of international calls already are being directed by IP switches, according to researcher TeleGeography ([NSD](#)) Inc., in Washington.

Consider Coast Capital Savings, a credit union in Surrey, B.C. It's installing a high-speed fiber network that includes IP telephony gear from Mitel Networks Corp., in Ottawa, Ont., to connect more than 40 branches. When the installation is complete in December, all 1,800 employees will have Web-enabled phones that are connected to their PCs. That will allow them to dial a phone number by clicking on the address book in their desktop organizer or make conference calls with an unlimited number of people, something the old system wouldn't do. Guy Gondor, an assistant vice-president at Coast Capital, used to travel four times a week from Surrey to the branch office on Vancouver Island, a two-hour ferry ride each way. Now he makes the trip once a week and holds IP conference calls with the 90-member staff the rest of the time. That saves him 12 hours a week in travel time. "And you can believe that travel time was taken from personal time," he says. "IP has been an incredible boost for me, personally."

And for telecom startups. In a May report on IP phone upstart Vonage Holdings Corp. of Edison, N.J., a team of three analysts at Prudential Securities ([PRU](#)) went so far as to describe Internet telephony as a "disruptive technology," a term that was often applied to tech startups during the boom. Such breathless praise rarely has been bestowed upon a new telecom technology since the NASDAQ bubble burst in March, 2000.

Is this hype? The Bells made grandiose promises about high-speed networks back in the 1990s but failed to deliver. Still, there's reason for optimism because equipment costs have come down. When AT&T started offering cable-phone service in 2000, installing the gear cost \$840 a household. Now, with IP, cable companies pay about \$340.

The Bells are fighting back. They are talking about building high-speed IP networks that would allow them to offer voice, data, and video. Verizon plans to start construction in 2004 and spend at least \$1 billion a year to build high-speed IP fiber to all its customers. SBC Communications Inc. is moving toward IP, too. "We will be using it in the local network in a much more robust way," says Ross K. Ireland, chief technology officer. Such plans will enable them to slash operating expenses just like today's pioneers. "No question, IP is the future," says Hawbaker of the Appleton schools. He should know. He's already there.

By Steve Rosenbush in New York, with Peter Burrows in San Mateo, Calif., and Roger O. Crockett in Chicago

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