

# Look to the Skies—A Wireless Connection

By Mark Goldstein

About a year and a half ago, I served as an early beta tester for People's Choice TV as they conducted a trial of their wireless high-speed Internet service SpeedChoice (<http://www.speedchoice.com>) to the home market in Phoenix, their second market after their home city of Detroit. DSL had not yet been introduced here, and cable modem hookup was not yet available in my neighborhood. By placing a single transmission tower on a nearby mountain operating at about 2.5GHz on frequencies leased at auction from the FCC, SpeedChoice was able to immediately reach about 90% of the local population without expensive and lengthy upgrades to buried wire systems of the "last mile" data delivery network.

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## Installation

One of the two technicians who came to perform the installation placed a small roof-top antenna (only 8" in diameter) on a support mast, ran a cable into the attic and down inside the wall, and terminated it on a switch plate in my home office. The other technician installed a standard Network Interface Card (NIC) for Ethernet 10Base-T inside my PC, hooked up an external modem to the switch plate, and configured my Windows networking and Internet access features to complete the installation.

However, only the data stream from the Internet to my PC was high-speed wireless, boosting my performance to impressive levels of as much as 1 Mbps downstream. The return path for my data transfers from activities such as typing, mouse clicks, and file uploads had to travel over a phone modem at a maximum of 33.6 Kbps.

Fortunately this uneven mix of speeds works just fine for most people's surfing and work styles.

Most Internet users download an enormous amount of information for page displays and getting files versus their modest data upstream requirements for issuing navigation commands and sending email. Thus this wireless solution still required the availability of a regular phone line to operate, which, if an extra line were needed, would add some \$20 to the average \$50 monthly cost.

Today, DSL and cable modems are available in my neighborhood, and SpeedChoice is busy upgrading to bi-directional equipment, allowing the wireless return of data at high-speeds and without tying up a phone line. They are also rolling out digital cable television, available through that same 8" dish, with 200 channels of video and audio programming.

## Choices

Suddenly, as a consumer, I have communications choices. I can get high speed data access from my telephone company, my cable company, or through the air. And I can get video programming from my cable company, from SpeedChoice's local transmission tower, or from a Direct Broadcast Satellite (DBS) in the sky. Maybe this telecom deregulation stuff is working, at least a bit. Availability of these advanced services certainly still varies by market, but the next few years will see the "build-out" of the necessary infrastructure, both wireless and in the ground.

And other exciting wireless options are on the horizon. A recent Dataquest study predicts that today's 2 million U.S. wireless



data subscribers will grow to some 36 million by 2003 buying \$3 billion in service annually. Point-to-point microwave wireless companies already are providing voice and high-speed data services to medium and large businesses in our urban cores. Third Generation (3G) upgrades to today's cellular and PCS systems will take mobile data rates from today's 19.2 Kbps up to perhaps 384 Kbps. The first global constellation of satellites, Iridium built nearby in Chandler, AZ, has its 66 "birds" circling the globe and is the first of several such systems that will provide truly ubiquitous telecommunications access from anywhere on the planet. Look to the skies! 📡

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## Informative Wireless Data Sites

**Federal Communications Commission (FCC) Wireless Telecommunications Bureau (WTB)**—<http://www.fcc.gov/wtb>

**National Telecommunications and Information Administration (NTIA) Office of Spectrum Management (OSM)**—<http://www.ntia.doc.gov/osmhome/osmhome.html>

**Cellular Telecommunications Industry Association (CTIA)**—<http://www.ctia.org>

**And its affiliated site: World of Wireless Communications (WOW-COM)**—<http://www.wow-com.com>

**Personal Communications Industry Association (PCIA)**—<http://www.pcia.com>

**Wireless Communications Association International (WCAI)**—<http://www.wcai.com>

**Satellite Industry Association (SIA)**—<http://www.sia.org>

**World Wide Web Virtual Library on Mobile & Wireless Computing**—<http://mosquitonet.stanford.edu/mobile>

**A Guide to Evolving Wireless Services available free online from the Telecommunications Industries Analysis Project (TIAP)**—<http://nersp.nerdc.ufl.edu/~tiapro/cgi-bin/tiap.cgi>