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New Ways to Access the Net, Part II: Exotic Technologies

By Michael Devitt

In our last issue, we discussed some of the more conventional ways users are able to gain faster access to the Internet, such as 56K modems and cable modems. In this issue we'll review some of the more unorthodox methods of connecting to the Net, such as multichannel multipoint distribution service, digital subscriber lines and direct broadcast satellite services.

Digital Subscriber Lines

One new form of technology gaining attention is the digital subscriber line (DSL). This technology holds a lot of potential because of its ability to use existing copper telephone wires to deliver fast Internet connections. With such a wiring structure in place, the use of DSL could expand rapidly, giving it a distinct advantage over cable modems and other forms of access that require fiber optic lines to function. However, current costs and the lack of a universal standard have kept DSL from capturing the public's imagination for the time being.

There are several variations of DSL on the market. Each one is identified by an initial letter: high-bit-rate DSL (HDSL); very high-bit-rate (VDSL); asymmetric (ADSL); symmetric or single-line high-bit-rate (SDSL); and dedicated ISDN DSL (IDSL). Prices for each type of line depend on the time spent on line and the rate at which information is transferred.

The most popular line in use is ADSL, which is available to both businesses and individual consumers. ADSL also has some of the biggest names in the computer industry on its side: Compaq, Intel and Microsoft. These companies have been working with other communication networks to make ADSL the de facto standard for digital subscriber lines. If things go according to plan, ADSL would be able to download information at 1.5 megabits per second and upload data at an average of 512 kilobits per second.

All of the new forms of high-speed Internet access have their Achilles' heel. To obtain the maximum quality of service, DSL subscribers must live within 3.5 kilometers of a local phone switching station. Prices rise and performance drops significantly the farther a user lives away from a switching station, which could become a real aggravation for people in less-populated areas of the country.

Price is another factor. One service provider in California offers a 128 Kbps ADSL line for an eye-popping \$3,500 start-up fee, with monthly charges varying from \$800 to \$1,000 depending on the amount of Internet usage. Another business in Chicago charges \$850 for an ADSL modem and installation plus \$150 to \$170 monthly. Still, when it comes to the ability to send and receive information, it's hard to beat the options available with a digital subscriber line.

Once ADSL is more widely available, monthly costs are expected to drop into a range that the average consumer can afford. Regional phone companies are also urging a lower price for ADSL so that the technology will be able to compete financially with the cable modem market. Until then, however, most computer users might want to opt for a satellite modem or ISDN line and then wait for the price of a digital subscriber line to fall to a more acceptable level.

Multichannel Multipoint Distribution Service (MMDS)

Multichannel multipoint distribution service is perhaps the most interesting type of high-speed access available. MMDS sends its information not over telephone lines or coaxial cables, but by microwave transmission. The system uses a large base transmitter and a group of multiple line-of-sight repeaters to send microwave signals to a small antenna stationed at an individual user's site.

MMDS does have some advantages to its microwave system, especially when compared with the current version of the digital subscriber line. For instance, MMDS transmitters have a range of 35 miles -- 10 times the range of DSL. And MMDS can send information at speeds of up to 800 Kbps, compared with only 200-400 Kbps for digital subscriber lines. It's also much less expensive, with an average of \$100-\$150 for cabling and installation and monthly fees between \$50-\$65 for unlimited use.

This is not to say that the service is not without its faults, however. Like most of the methods of access reviewed here, MMDS is an asymmetrical technology, meaning that it can receive large amounts of data at once, but still needs to use a conventional modem and phone line to send information. MMDS isn't yet available nationwide, either. Currently, the service is limited to locations in New York City, Boston,

Rochester, Washington, D.C., and New York state. If you live in a rural part of the country, it's virtually impossible to get multichannel multipoint distribution service.

With limited availability and download service only, MMDS isn't ideal for the casual Internet user.

However, if your forte is heavy downloading and you live in the northeastern part of the country, MMDS is a viable alternative, especially to its slower, more expensive rivals.

Direct Broadcast Satellite

Direct broadcast satellite (DBS) service broadcasts information to smaller reception dishes, much like conventional satellite television transmissions. Users can subscribe to a DBS service provider in the same one subscribes to a regular Internet service provider, but you must first purchase a small satellite dish and have it installed before they can begin using the system.

Buying a DBS system and having it installed can be done for less than \$500 in most cases. Hughes Network Systems charges \$299 for its DirecPC Personal Edition, plus a \$49.95 activation fee. Users can purchase monthly access plans at different rates depending on the speed of transmission and the amount of time they spend on line. Current plans range from \$19.95 for unlimited off-peak hour service at 200 Kbps to \$129.95 a month for unlimited service at 400 Kbps.

One advantage of the DBS system is that it is available nationwide. Because DBS doesn't rely on telephone or television wiring to receive information, people across the country can receive the same type of access and service. A computer operator in Anchorage, Alaska would be able to purchase and use a DBS system as easily as one in Tampa Bay or Indianapolis. And because satellite systems are more reliable than conventional phone lines, they need fewer signal checks, resulting in the higher download rates mentioned above.

One disadvantage of DBS is that the system can only receive information. To send data, you'll still need a conventional telephone and modem. This means that uploading files will take considerably more time than downloading them. Another problem to consider is that for a DBS system to function properly, its satellite dish must have a clear line of sight to the south -- the same type of problem that plagues most of today's mini-dish satellite systems.

Since DBS requires a conventional modem for uploading, it isn't the best choice for users who need to send huge amounts of data. And because there are some physical burdens involved with positioning a satellite dish correctly, many potential users could find DBS impractical (or impossible) to set up and maintain. However, if you're more concerned about download speeds than anything else, and if you've got a clear view to the south for a satellite dish, DBS is an intriguing option.

Making the Right Choice

With so many options available for computer users, it's difficult trying to decide which method of Internet access is best. There are a lot of factors to consider before spending what could amount to several hundred dollars in hardware, installation and setup fees. Ask yourself what type of information you want to download off the Internet. If you're interested in grabbing large programs and movie-length videos, a cable modem or DSL system is in order. If your interest is more along the lines of smaller images and text files, a 56K modem or ISDN line might be a better choice.

You should also remember that the availability of some of these products depends on where you live and the types of services your local telephone and cable television companies support. Satellite modems may come in handy for a user who lives in a sparsely populated area, while someone living in a large city could opt for an ADSL line or MMDS service. Whatever your choice, make sure to do your homework and look at all the options before deciding on a type of access that meets your wants and needs.

As always, we welcome your comments. If you have any questions about the types of Internet access mentioned in this article, feel free to contact me by phone or at the e-mail address below.

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