

Eyes to the Skies

Satellite becomes a more attractive dish for business media

By Steven Klapow



ALTHOUGH IT MAY BE DIFFICULT for some longtime users of satellite services to believe, there are producers out there who have not considered satellite because they think of its implementation as daunting, and its cost, expensive.

However, pricing for one-way satellite transmission has dropped and availability has grown. And you don't necessarily need a behemoth 3.5-meter dish to receive programming, either. Sending content through the skies has become a strong competitor of terrestrial conduits such as frame-relay, ISDN, dial-up, business-class DSL, and T1 lines. It's also an alternative to distributing CD-ROMs, videotapes and print materials.

"If a company wants to send out things intermittently, frequently or quickly, satellite becomes attractive," says Randy Palubiak, president of Enliten Management Group (www.enliten.net), a

satellite services company in Marietta, Georgia. "Fifteen years ago, a typical downlink was \$15,000; now it's under \$3,000. A downlink for a whole office building costs what a good computer system costs."

Applications like business television over satellite let employees receive one consistent message quickly and simultaneously, according to Roy Liemer, president of Vista Satellite Communications (www.vistasat.com), a satellite services company in Sunrise, Florida. They also can shorten a product's time to market, he adds.

However, the cost-effectiveness of satellite services depends on, among other things, the number of sites you need to reach. The minimum number that experts recommend tends to vary. Bill McNamara, general manager for BT North America Broadcast Services (www.btna.com), says satellite can make sense with just a handful of sites. For point-to-point services, fiber may be less expensive than satellite, he says, but for multipoint applications, he recommends satellite. "If you want to do a terrestrial 4 megabit transmission originating in New York and going to London, Paris and Frankfurt, you would have to buy 4 megabits to each one of those cities if you were to go terrestrially. With satellite, one 4 megabit satellite signal can cover all those cities."

Palubiak agrees that satellite may not be best for point-to-point, and he puts the minimum number of sites a bit higher than McNamara does. "At 50, it's a 'let's see' situation. Once you hit 100 or more, it starts to become the most economical and logical way to do it."

Some companies just use satellite services on a per-event basis. According to Jay Leibowitz, vice president of Vista Satellite, if a company satellite-broadcasts just one event, it may be worthwhile to install equipment permanently.

Space Considerations

Some of the benefits of delivering business media via satellite:

- >> Minimal lead time required
- >> Reaches locations that lack broadband-network access
- >> Video can be added easily to existing VSAT data networks
- >> Network TV and proprietary programming can be combined
- >> Can be less expensive than terrestrial networks
- >> Lets you pay for just the bandwidth you need
- >> Speed can be increased quickly

Joe Amor, vice president and general manager of Microspace Communications Corporation (www.microspace.com) says the minimum number of sites to make satellite worthwhile is around 50. Based in Raleigh, North Carolina, Microspace operates a business satellite broadcasting network for clients such as Dean Witter and HyperFeed. "Say you're going with video on demand to 200 sites with over half a megabit of satellite capacity," says Amor. "You can pay \$17,000 per month, no matter how many sites you're delivering to. So, the more sites you have, the more cost-effective it is. Divide the \$17,000 by 200, and you're paying only \$85 per site."

BT's McNamara estimates the up-front cost of installation at remote sites at \$2,000 to \$2,500, including surveying, and the cost of sending programming is around \$1,000 per hour.

The cost of uplinking is, perhaps, even more variable because service providers like those interviewed for this article can set up a pay-as-you-go system for corporations that need the service only occasionally; otherwise, a dedicated facility can be built. Users typically rent all or part of a transponder, says Palubiak, and the cost depends on the amount of bandwidth and number of channels.

Beaming In on Trouble Spots

Although fiber networks have a wider reach than ever, they still do not reach everywhere. Satellite signals, however, can go nearly everywhere, from anywhere. "Anything that can be done on the ground can be done on the sky," says Palubiak. "If you need wide bandwidth, satellite works, especially for multiple locations. Around 40 percent of locations can't get fiber delivery."

Troubleshooting a satellite-transmission problem may not be a cinch, but there are fewer possible points of failure—an uplink, a satellite and a downlink. With a terrestrial network, says McNamara, "every router hop, every amplification, every POP [point of presence] and every piece of equipment represents the possibility of some kind of problem.

"Also," he adds, "there's that first- and last-mile issue. You have to get from a POP to whatever location you need to be at. Getting the terrestrial line dragged in is generally done by a tariffed company and can be expensive, with long lead times. With satellite, you have instant infrastructure: Put up a 90-centimeter dish, plug it into your LAN or WAN, and you should be good to go."

With 6,000 stores selling 4,000 consumable items, Dollar General established a satellite network that has worked very well, according to Bruce Ash, vice president of information systems. "I have more problems with terrestrial locations than with VSATs [very small aperture terminals]. With VSATs, I can get to the heart of the problem. Terrestrial involves the phone company."



Palubiak also sees a coexistence between satellite signals and IP. "IP is becoming more popular. If [satellite users] have an IP network and IP receiver, they'll get the content that way. A number of receivers are now IP based and can work with TVs and LANs."

Simon Bull, senior consultant for Comsys (www.comsys.co.uk), a consultancy in St. Albans, England, that specializes in satellite communication, provides an example of satellite's benefits over land-based networks. "Say you're Ford Motor Company and you have 6,500 dealers across the United States, and you decide to put video on the network. Doing it over terrestrial would be phenomenally expensive—not just the cost of running the network, but the cost of installing it. You'd need T1s to every site, or multiple 56k [units], and that would be very expensive." Satellite receivers would be a lot cheaper—maybe \$200 or \$250, he adds.

Potential Satellite Applications

>> Updates for point-of-sale displays

>> Transaction processing

>> Distance learning/training

>> Webcasting

>> Internetworking

>> IP telephony

>> Broadband Internet access

Despite the seemingly high cost of renting space on a satellite, it still can save money. "Say the space segment is 10 times more than a terrestrial line," says Bull. "You have to buy that space segment only once for 6,000 locations, not 6,000 times for those dealers."

Producers can lower the cost even more by paying as they go, renting space on an hourly basis, according to McNamara. "With terrestrial," he says, "the first mile and last mile are permanent recurring costs."

Customers of terrestrial services also pay for bandwidth they may not use. "Say you have 56k frame-relay access, and suddenly you need 57k," says Bull. "You have to buy another 56. You have 55k of bandwidth you don't need but are paying for."

Satellite also allows for speed increases on the fly. In the case of Microspace's Velocity service, the network is controlled by the company's head end. For example, one of its customers recently needed to increase its speed by 50 percent. Microspace faxed a contract amendment and, in less than two hours, the contract was back, and the speed, increased.

BT's own services rely on both satellite and land networks. However, the terrestrial network is the company's own. "We've leased capacity and put our own equipment on it so we know how the signal is flowing at all times. We know if it's a router issue or if it's on the long-haul fiber. There's a difference between just having leased lines and trying to troubleshoot, and having your own managed network."

Not Just for Data Anymore

Many companies already use satellite networks for data applications such as transaction processing. You may have even noticed a satellite dish atop your local gas station. Adding video to such networks, says Bull, is simple. Even if a company decides to move its data to frame-relay, VSAT networks can be kept for video transmission.

Bull knows of a company that used enough video in its communication that it would have cost a fortune to transmit terrestrially, so it chose satellite. If a company suddenly decides it wants to run video over a T1, "suddenly they're going to make a big hole in the line to get the video down it, and maybe they'll have to install two T1s. Someone's going to have a kitten over it when they realize what this costs.

"Even on a terrestrial network," he adds, "you still have to buy the IRD—the receiver. The only added thing in a satellite network is the antenna, and people even have those on their houses now for around \$199."

For companies that mail magnetic or optical media to their various locations, the cost savings of

satellite are even more clear-cut—as are the time savings. One of Enliten's customers, a large retailer, would distribute CDs that were pressed out of house. The pressing required advance planning, and by the time stores received the CDs, one week had passed. Palubiak says this system cost the client \$20,000 per week, which was considerably more expensive than satellite distribution. Furthermore, with satellite, the content can be gathered and finalized the day before it's delivered.

However, as Jack Crutchfield, another vice president at Vista Satellite, points out, programming can be delivered with little lead time, but companies need to market such content in order for it to be successful.

Retail environments with many point-of-sale video displays that require fresh content are ideal for satellite delivery because it can be done so quickly and in so many locations at once. "The advantage is that you can go from your corporate HQ and hit multiple sites with the same amount of bandwidth," says McNamara.

Going Both Ways

Satellite does get more complicated and costly for two-way video applications because it requires all locations to have powerful transmission equipment. "Two-way is not tremendously expensive but it is expensive," Bull says. However, with applications like business television, two-way isn't even necessary. "By and large, you don't see many corporations saying, 'We must have two-way video at this filling station in Huntington Beach.' "

According to Amor, the typical cost of equipment per site can be \$3,500 to \$5,000 for two-way, but those costs are coming down—even to figures as low as \$2,000.

Even with huge content distribution networks, companies are prepared to push content, but not from unusual locations, says McNamara. In the case of BT, the company has trucks that can go to a site to provide a return path. Such two-way applications have niches, he says—a CEO interacting with upper managers, for example. Sometimes the interaction entails video going out one way and responses coming through teleconferenced phone lines.

The cost of one-way transmission also continues to fall, says Amor, because the number of available receiving devices has increased with the international adoption of standards such as DVB, or Digital Video Broadcasting.

One charge against satellite delivery has been latency, however minor it may be. For many applications, however, it isn't often an issue. "Data doesn't mind a half-second delay," says Bull. "With video, the latency only matters if the video is interactive. Do you notice that CNN is coming in a half-second later?"

There's an adage in the satellite industry: You can pay for it on the ground or pay for it in the sky. As Amor explains it, "You either pay for high-quality services with your uplink and the satellite, or you make it up by putting big antennas and costly equipment at the receive sites." If you have only a few dozen sites, it might make sense to spend more money on the receiving ends, he suggests.