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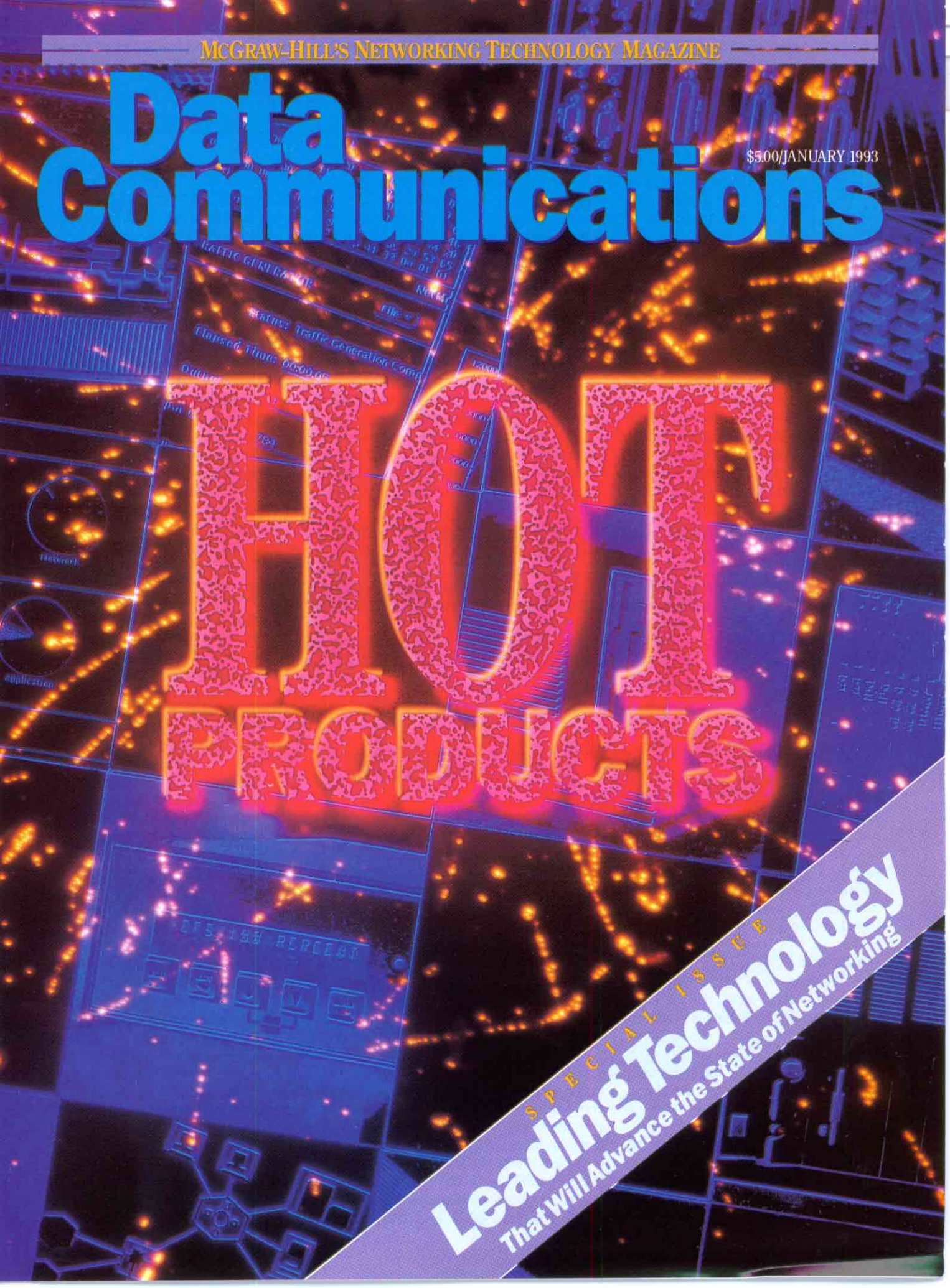

HOT PRODUCTS

SPECIAL ISSUE

Leading Technology That Will Advance the State of Networking

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What constitutes "hot"? It seems like an easy enough question—one that any dictionary or physicist could answer—but this is the second year we found ourselves agonizing over definitions and interpretations that would make a corporate attorney proud.

Maybe it's easier to start with what we don't mean. "Hot" isn't code for "best." That's not to say that we haven't chosen 33 terrific products to showcase in our 1993 Hot Products issue. But since the DATA COMM Test Lab has had a chance to evaluate so few of them, and others aren't yet available, claiming they're the best would be less than appropriate.

Simply put, the 33 products featured here signify—by design and specification—ways in which networking is changing. They can be thought of as the advance guard for the technologies of tomorrow.

When products are demonstrably faster, cheaper, or smarter (no small accomplishment in itself), it's relatively easy to spot trendsetters. More often than not, though, determining which products are ahead of their time means first determining where the industry is headed—a judgment that calls for equal parts intuition and intelligence (with a grain of guesswork).

POWER TRIO

This year, we've watched the industry evolve in three significant ways, and many of our Hot Products track this trio of trends.

First, after years of building private networks that carefully separate voice and data, the technology that melds both types of traffic is starting to show. Some of these products are geared to multimedia—certainly the most celebrated applications on the horizon, even if there's no consensus about how big the market will actually be.

Leading off the multimedia offerings is Starlight's Mediaserver, which delivers hardware, software, and a special transport protocol for video. And Lannet Data Communications' LET-36 switching hub is impressive, given its ability to deliver data and multimedia over 10Base-T.

On the WAN side, Videoserver is on the scene with the first multipoint control unit (MCU) that complies with the CCITT's new H.243 recommendation for multipoint conferencing. Thus, the start-up's Model 2000 MCU can work with any codec that conforms to the committee's spec (an impressive first and a good indication of the vital role that standards play in our industry).

Vendors that haven't succumbed to multimedia madness are still looking to combine voice and data in order to cut the cost of leased lines. Cray Communications is a leader here: Its FPX2000 switch is the first to carry voice over frame relay (and there's no compromise to voice quality). Ericsson is another: Its MD 110 Broadband Premises Network is a PBX geared to LAN interconnect and videoconferencing, a sure way to save money on cabling, installation, and management.

THE YEAR OF SATELLITE SITES

Second, now that most corporations have built internetworking backbones, they're eager to link their remote offices into headquarters. Some vendors have given tremendous thought to problems that arise when complex networking gear is shipped out to the hinterlands, where there's no full-time networking manager (and more often than not, no real support staff). Proteon's DNX 300m Bridging Router is a good solution: It was designed from the start to be installed by nonprofessionals and maintained remotely.

Isocor also has its eye on satellite sites. Its X.400 Lite package gives users a long way from the home office a way to dial up an X.400 messaging backbone without going over dedicated X.25 leased lines.

Of course, not everything at remote sites can be handled by personnel with only rudimentary technical skills. But when network managers need to hop on a plane and travel cross-country to solve a problem, they'll be glad for Network General's LM-1 Pocketscope. Sure, this is the first external protocol analyzer for PCs, but users are really going to remember that the 2-pound unit can be popped right into a briefcase. They'll likely find Star-Tek's handheld Framescope 802 Ethernet/Token Ring Performance Analyzer equally memorable. The 1.3-pound packet-filtering device comes loaded with everything needed to filter, capture, and display Ethernet and token ring packets.

BUILT FOR SPEED

Third, 1992 was the year that saw high-speed connectivity come into its own. The first Sonet-capable broadband switch arrived courtesy of T3plus Networking. And Fore Systems delivered Forerunner, an ATM switch that comes complete with the adapter cards needed to build an entire ATM LAN. And any discussion of ATM activity must include the Routerxchange 7000 from Retix, the industry's first asynchronous transfer mode router. Finally, the carriers made their own sizable contributions to high-speed services. MCI's VPDS Hyperstream extends the reach of SMDS from coast to coast. And MFS Datanet uses ATM technology in its High-Speed LAN Interconnect (HLI) to support native LAN transmission rates over thousands of miles—at a fraction of the cost of leased lines.

And that's what's hot—at least for this year. No doubt, hot will prove just as elusive a concept when it comes time for 1994's Hot Products issue. ■

Carrier Services

MFS Datanet's HLI

Full Speed Ahead for LAN Interconnect

"High speed" is a relative term when it comes to LAN interconnect services. True, these services run faster than most dedicated WAN lines, but they can't match native LAN rates of up to 100 Mbit/s. Now there's an alternative: a service from MFS Datanet Inc. that uses asynchronous transfer mode (ATM) technology to support native LAN rates, even over thousands of miles.

MFS Datanet (San Jose, Calif.), a subsidiary of MFS Telecom Inc. (Oak Brook Terrace, Ill.), calls its service High-Speed LAN Interconnect (HLI). Using ATM, HLI carries LAN data at 4, 10, 16, and 100 Mbit/s across the country for a fraction of the cost of high-speed leased lines—around $12,500 a month for a 10-Mbit/s connection between New York and Chicago, as opposed to about $50,000 for the T3 link that would normally be needed to support native Ethernet or token ring rates.

MFS Telecom is probably best known for its metropolitan-area LAN interconnect service, which uses a public FDDI network to link customer networks. HLI goes beyond the MAN service in that it connects LANs across the country, not just across town.

The idea behind HLI is to give users transparent, high-speed connectivity, says Bob Barbour, MFS Datanet's director of marketing services. To that end, MFS Datanet simply asks the user to present the carrier with the appropriate LAN attachment interface, such as a token ring multiple access unit (MAU), an Ethernet attachment unit interface (AUI), or an FDDI media interface connector (MIC). HLI then creates a bridged connection between the user's site and the remote location.

To the user, the connection should be as invisible as a local bridged connection, Barbour says. The company doesn't even emphasize the technology it uses to implement the link, stressing that HLI's features are what matter to users.

Maybe—but MFS shouldn't be so modest. That transparent connection could involve T3 lines, dedicated fiber circuits, and equipment ranging from hubs to central office ATM switches.

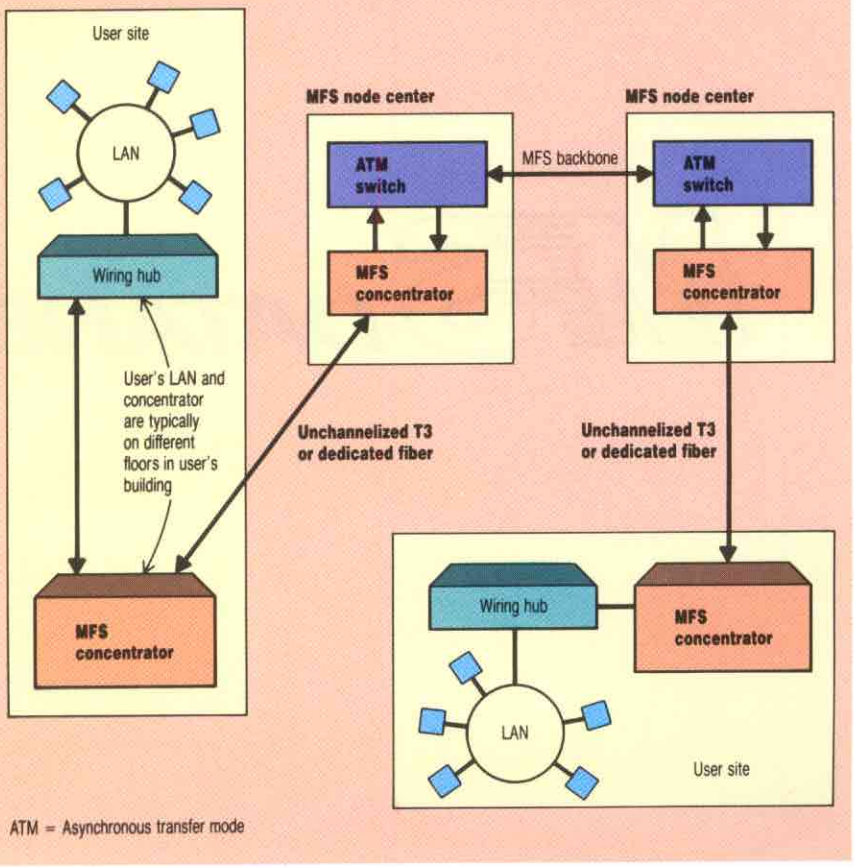
There is a catch to HLI: limited availability. To sign up for the service, users need to be in a building that's already on the MFS cable network. Barbour says there are already more than 1,000 buildings on the network in metropolitan areas around the country. HLI is initially available in New York, Washington, and Chicago; later this year the service is slated to be available in up to 14 other cities. If a user isn't on the network, but wants to subscribe to the service, MFS might be willing to pull the fiber at an additional cost. However, the company says that it's only likely to do so for users that already have other sites on the MFS network.

To connect to HLI, a user needs to present the carrier with a network interface card that connects to multimode fiber. If the LAN doesn't use fiber, the user needs a hub that can attach to fiber cabling. This multimode fiber connects the LAN to an intelligent concentrator, which is owned and managed by MFS, and is typically located in a secure site in the basement of the user's building (see figure). MFS Datanet uses concentrators from ADC Fibermux Corp. (Chatsworth, Calif.), although Barbour stresses that it may use other vendors' devices if the situation warrants it.

The concentrator is linked to MFS's

Wide-Area Interconnect at LAN Speeds

Users gain access to MFS Datanet's High-Speed LAN Interconnect service via concentrators located on their premises and a T3 or fiber link to an MFS node center. At the node center, another concentrator passes data to an ATM switch, which sends traffic over the MFS backbone.



Carrier Services

nearest "node center" (its term for central office) over an unchannelized T3 circuit or a dedicated fiber link. A T3 line is used for native-speed token ring and Ethernet connections, while a dedicated fiber line connects FDDI LANs. The T3 is unchannelized—that is, not configured as a bundle of 28 T1 (1.544-Mbit/s) circuits—to present the user with a seamless 4-, 10-, or 16-Mbit/s chunk of bandwidth.

At the node center, another Fibermux concentrator acts as a front end to MFS's ATM switches, which were developed by Newbridge Networks Inc. (Kanata, Ontario) and MPR Teltech Ltd. (Burnaby, British Columbia). Data travels over the MFS backbone to the switch at the remote site's nearest node center, and back through the concentrator to the LAN.

MFS Datanet achieves its cost savings by using an ATM network rather than dedicated cross-country lines. Because ATM formats data into cells, MFS can combine traffic from different users on the same backbone, thus making efficient use of the bandwidth and passing that efficiency on to users as cost savings.

The company also takes advantage of the fact that ATM calls for virtual circuit connections to ensure data security. Each user's data travels on its own virtual private network, thus preventing traffic from one user's network from being routed onto another user's network.

The company also offers "fractional rate" service for users who don't need full native LAN speeds. In fractional rate services, the connections are at T1 rather than T3 rates.

Prices for HLI services depend on the locations of the user sites and the data rates involved. MFS Datanet doesn't offer a list of standard prices, but it will put a price on specific configurations. A fractional Ethernet connection between New York and Chicago, for example, would cost $1,800 per month for access charges ($900 at each city) plus $3,000 per month for the circuit, for a total cost of $4,800 per month (excluding a one-time installation fee of $1,000 at each site). A 10-Mbit/s connection between the two cities would cost $2,000 per month for access at each site plus $8,500 for the circuit, for a monthly total of $12,500.

—Johna Till Johnson