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Charting the '90s Top LAN Contenders

MBS, Retix, and Articulate Systems are key players to watch

BY LAURA DIDIO

In the second of a three-part series, *LAN TIMES* profiles some of the key LAN companies to watch in 1991. Several of the firms have been on the scene for years and are just now beginning to experience exponential growth. Others are startups that have yet to introduce their first products. But whether they're veterans or newcomers, located on the East or West Coast, they share a number of common attributes.

All are in the sizzling interconnectivity market, all boast corporate managers with impeccable credentials (affiliation with the Massachusetts Institute of Technology [MIT] cropped up often), and despite the current economic recession, all have been courted by venture capitalists who want to get in on the ground floor of these companies on the chance they could be the next Microsoft or Novell. One such company is Microwave Bypass Systems Inc. (MBS).

MBS owes its existence to the ingenuity and ambition of 29-year-old founder and president David Theodore, who took 1950s microwave radio technology and gave it new life in the 1990s as a transmission medium to connect remote 10 megabits per second (Mbps) Ethernet LANs located at distances up to 10 miles apart.

While there are several other microwave companies in the market, Microwave Bypass distinguishes itself from the competition by being the only microwave company that is also a LAN company, offering users full Ethernet/microwave systems as well as service and support, according to Doug Gold, director of local area network communications research at International Data Corp. (IDC), of Framingham, Mass.

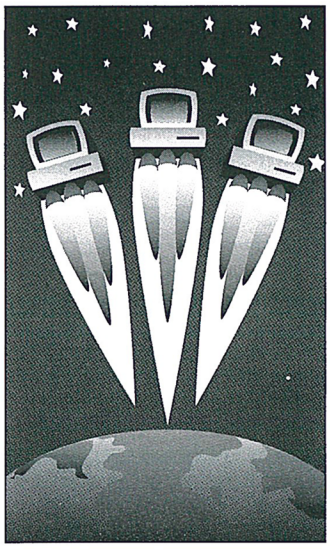
Theodore, a political science major at Boston College, likes to say that his business has been built the old-fashioned way: lots of hard work (he does at least six installations a year himself), a commitment to service (he often gives customers his home phone number, works weekends, and vows to get to an outage site within hours after a report of trouble), and old-world trust (Theodore has been known to consummate deals with just a handshake).

Theodore had no background in engineering and not the slightest notion of getting into the LAN arena. It was in his first job out of college selling leased line services for MCI, that Theodore realized that microwave could often prove to be a technically more feasible and economical way to link remote local area networks over short- and medium-haul distances than telephone lines.

In 1984, Theodore managed to wangle a six-month consulting contract from Macom, which allowed him to start marketing and selling microwave equipment "to anyone who would give me the time of day," Theodore recalls.

"This was just after the AT&T divestiture, and for the first time, telephone company customers had the option to go with alternative, less expensive technologies," Theodore said. "I was basically acting like a vacuum cleaner salesman; I just kept knocking on the doors of prospective customers."

Within a few months he made his first few sales and incorporated Microwave Bypass Systems. Among the fledgling firm's first customers were Massachusetts General Hospital and Harvard and Boston universities.



BLAST OFF. Several LAN companies are poised for stellar growth.

Microwave Bypass Systems Inc.
Braintree, Mass.
Founded: 1985; privately held.

Management:
David Theodore, founder, president and CEO.

Products:
10Mbps Ethernet systems that utilize microwave transmissions, including the Etherwave Transceiver and the LAN Link 1000, a Data Link Layer bridge with network management capabilities.

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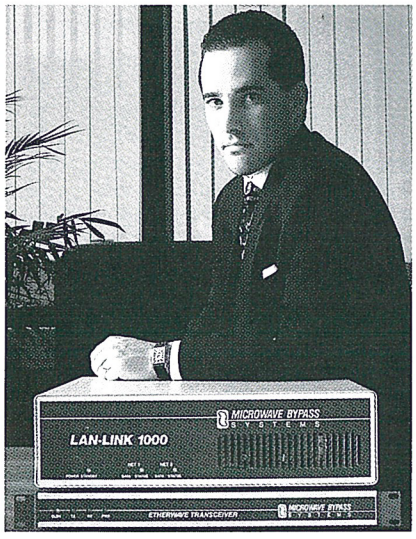
David Murphy, the network and systems manager at Massachusetts General, said the hospital became Microwave Bypass' first customer for very practical reasons.

"We went with microwave technology because we had no other alternative," Murphy said. "We couldn't lay fiber-optic cable between the main hospital facility in Boston and our Cardiac Care and Computer Center in Charleston because the two facilities are separated by water, and the cost would have been prohibitive. The microwave link only cost us $35,000. And at 1.54Mbps, T-1 lines were too slow; we needed the full 10Mbps bandwidth."

Murphy said the hospital was willing to take a chance and give Microwave Bypass its business over a large, established systems vendor because the hospital was confident of the microwave technology and because MBS pledged better service and support.



AMBITIOUS. MBS' Theodore has combined microwave technology with Ethernet LANs.

"The hardest part was doing the interface between Ethernet and radio equipment; and we figured we'd get better service," Murphy said. "Over the past several years, MBS has given us exemplary service and support; the microwave equipment reliability is excellent."

Murphy said that Massachusetts General Hospital has experienced "some weather-related outages due to heavy rain," but he added that "it was partially our own fault in terms of where we installed the microwave dishes; we've since corrected the problem."

Microwave Bypass has come a long way since that first sale to Massachusetts General. It boasts customers in eight countries. In the U.S. its users include MIT; the Smithsonian Institution; Reynolds Aluminum Co.; Smith, Kline & Beecham; and the University of California at Berkeley.

Additionally, it has ongoing relationships with large systems vendors like Data General Corp. and is pursuing strategic relationships "with all of the top router vendors," according to Theodore.

Among MBS' major accomplishments is the fact that it has enhanced the technology to effectively double the maximum distance between Ethernet segments linked by microwave from 4.3 miles to up to 9 miles without having to install a repeater.

Additionally, MBS won the contract to install and service several dozen microwave links to interconnect various universities, businesses, and research facilities on the New England Academic Research Network (Nearnet).

Theodore acknowledged that using microwave signals to transmit Ethernet data "is still a mysterious technology to a lot of users, since they haven't had a lot of experience with it."

Nonetheless, Theodore and IDC's Gold asserted that microwave technology is finding more and more adherents because of its inherent reliability, security, and low cost ($35,000 for a complete system) and maintenance. Theodore also pointed out that microwave is inherently a more secure medium than fiber-optic cable or dial-up modems.

"In order for someone to tap into a high-frequency microwave signal, the would-be data thief would have to physically place an antenna in the transmission path between the two microwave dishes just to intercept the signal, and after that they'd have to find a way to convert the data to Ethernet," he detailed.

Based on these facts, MBS is projecting that its sales will double every year for the next five years. To date, Theodore has eschewed all offers from potential investors in the venture capital (VC) community for funding, although he said he's open to outside financing at the right time.

"VC money would be the easy way to go, but it would have to be the right partnership. For the time being, I'd still prefer to keep fanning the entrepreneurial fires."

Meanwhile, MBS will concentrate on what it does best: putting new networking spins on good old reliable microwave. It recently added support for the Simple Network Management Protocol (SNMP) to its LAN Link 1000 Bridge, which will begin shipping at the end of first quarter 1991. MBS also currently offers 4Mbps token-ring transmissions over microwave via interfaces and LAN gateways. The company has no plans at this time to support 16Mbps token-ring transmissions over microwave, but Theodore said when and if his customers want that capability, Microwave Bypass will provide it.

MICROWAVE BYPASS
SYSTEMS

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