Connecting Remote Telecommuters in Cost-Saving Virtual Enterprise With Broadband-on-Demand
A CUSTOMER CASE STUDY
Affineon and Immeon – Virtual Private Network for Small Office, Home Office Operations

The scene is a basement or bedroom turned office. Five people, each with one or more computers, are working away at their daily business. But this isn’t a startup or home-based business. This is a new way of doing business for one of the world’s largest financial services firms. Once a behemoth of brick and mortar, now this company is cutting expenses by decentralizing employees and connecting them with a wireless network into a virtual enterprise. The need for fewer office leases and phone lines are improving the bottom line every day.

Looking at the flip side, the financial advisors can work at home, and save time and effort they used to spend commuting. Each is an independently owned business, but with the backing of a worldwide organization that brings them credibility, marketing, and tremendous back office resources that they couldn’t afford on their own.

To make the virtual company a reality, employees need a data pipe that’s big enough to support multiple PCs at once, and financial transactions can’t be delayed even an instant, or money is out the window. ISDN is too expensive to make this business plan cost-effective, and DSL, if it’s available at all, just isn’t enough capacity. Long waits for terrestrial hookups are typical as well.

Fortunately there is a wireless networking alternative. New on-demand satellite services from Immeon Networks LLC are making this decentralized structure work. Telecommuters are connected to the corporate LAN with a VPN that makes their user experience equal to that of counterparts tapping in directly to servers or backbone connections. Transactions require high-speed, two-way connections, but satellite’s inherent ability for broadcast also enables low-cost multicasting of training or corporate information to remote offices.

“The compatibility of Immeon satellite networking technology with corporate standards for financial SOHO operations is a key component to our success,” said John Callahan, president of technology consultant JC2H Corp. “That covers the full range of system standards and data security from the computers and operating systems through to routers, network interfaces, VPNs, firewalls, and software applications.”
JC²H, through its Affineon division provides all inside wiring and configuration of network components for clients, and a local point of contact with a 7/24 help desk. All customers have to do is make a little room in the backyard for a dish. Typical antenna size for connecting to the service is 1.2-meters.

“Together with Immeon we provide a full-service, turnkey network where we get them set up inside, then call Immeon for the satellite terminal installation and commissioning, and a new location is on the air,” added Callahan. “The customer doesn’t need the pain of setting up and operating their own network.”

The service becomes economical because of a technique called Dynamic Bandwidth Allocation in the satellite terminal, which enables users to get broadband speeds, but to pay only for the capacity they use. Users avoid the expense of over-sizing connections to fit the maximum throughput they need, then paying the full price even when circuits are idle.

Dynamic bandwidth allocation is one of the features of the LinkStar satellite network that powers this virtual office network. The system uses adaptive bandwidth-on-demand and turbo coding techniques to increase data speeds and bandwidth efficiency. LinkStar automatically detects the need for more data speed and pulls from unused bandwidth to create higher capacity circuits. Remote sites in the satellite VPN share a DVB-S compatible broadcast from the hub at rates up to 512 kbps. Each remote terminal can return data to the network hub at speeds up to 128 kbps.

In addition to remote connectivity, the satellite access service can be used to restore IP network connections or bypass terrestrial networks altogether in the case of outages.

“You could have an interesting situation where these remote telecommuters are what keeps a business up and running in a disaster or network interruption at the corporate headquarters,” said Jeff Gross, general manager of Immeon Networks. “The remote locations are out there, under the umbrella of the satellite, with direct connections to the Internet or data center.”

Since satellite beams already cover wide geographic areas (in this case most of North America) service prices are independent of distance between locations, but instead are priced according to the data rate users require. In addition, satellite is ideal for “one-to-many” multicasting of information, another application used by this financial services company. Images, video, training, software, and marketing materials can all be sent as a single broadcast accessible to all remote locations, rather than the bandwidth-intensive process of sending information individually to each location.

Affineon, based in Milwaukee, has offices in the Chicago area and in Atlanta, with plans for adding LA and Washington DC are offices in early 2003. Soon, the company expects to expand the new bandwidth-on-demand services to client operations throughout the U.S., and later in the year outside the U.S. to Canada and Mexico.