



Radio Dealers Find Wireless Internet to be a Perfect Fit

By J. Sharpe Smith
Editor

It is not hard to find pent-up demand for high-speed wireless Internet these days. The popularity of the Internet has led businesses and consumers to reject the plodding data speeds of dialup telephone lines and opt for high-speed Internet paths. But, in many instances, rural communities and industrial parks, for example, wireline technologies that provide increased data speeds, are not readily available. Even in cases where companies have high-speed Internet access through leased T1 lines, wireless Internet technology provides an economically sound replacement

Dealers across America have added wireless Internet capabilities and are beginning to satisfy that demand. But is the wireless Internet for you? For the radio dealer that is looking to diversify its product line, one of the first questions is, "What is the target market?" Many users in a dealer's current customer list are a perfect fit for this low-cost, high-speed, wireless information technology. These companies, government agencies and public safety entities, which use dispatch, also need access to great amounts of information on a timely basis for a low price.

After the target market is established, the next question is how do you approach these markets? There are several different methods to taking advantage of the wireless Internet market opportunities:

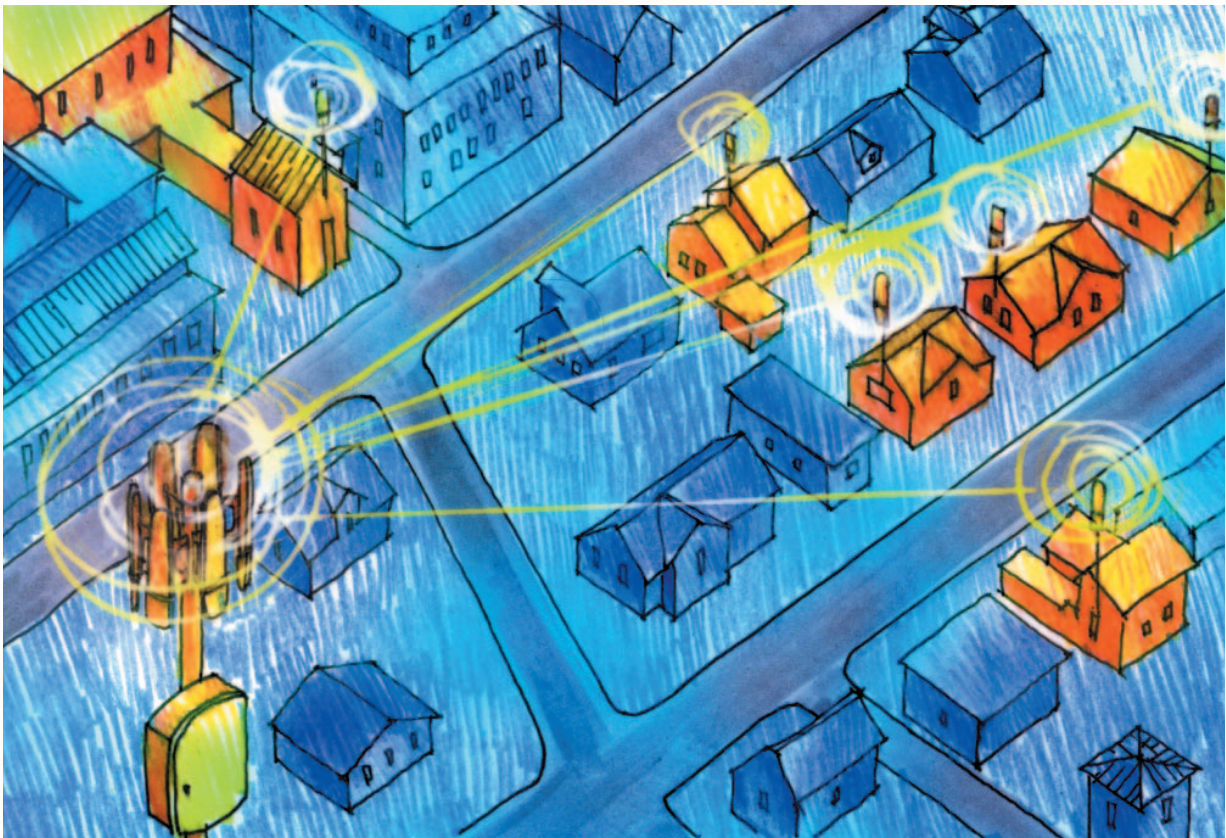


photo courtesy of Motorola

- Become a Wireless Internet Service Provider (WISP) — using wireless equipment to market and sell the service to both business and residential users.
- Supply equipment, installation and technical expertise to an established Internet Service Provider or partner with the firm and remain involved by selling service.
- Sell wireless Internet system technology to municipalities or others who desire their own system.

Next, find the appropriate technology. We spoke with a number of dealers, most of whom were utilizing Motorola's Canopy system, which is based on wireless broadband technology. It provides for high-speed Internet access utilizing the unlicensed UNII bands (5.25-5.35GHz or 5.725-5.825GHz). The basic building blocks of Canopy are: an Access Point to distribute service to the surrounding community, a Backhaul Unit that provides the Internet "feed" from the remote location and a Subscriber Module — Internet access receiver — that is installed in or on the customer's site.

Hungry for High-speed Connectivity, Rural Areas Jump at Wireless Internet

The phone lines in West Texas have been baking in the sun a long time. The copper wire, never designed for high-speed data transfer, is getting old. The small towns in this part of Texas, starved for economic development, need high-speed Internet — partly because it is one of the keys to attracting new businesses.

"We are focused on the small communities around us that are underserved or not served at all by high-speed Internet service providers," says Jay Evans, Texas Communications, a radio dealer based in Abilene, Texas. "They don't have DSL [digital subscriber line] capabilities or cable television. All that is available is dial-up service."

Companies have shown some interest in locating in these smaller cities to reduce their labor costs, but the lack of a telecommunications infrastructure has reportedly been a hindrance. In one town of 2,500 population,

Evans proposed to set up a Canopy system. After approving the proposal, the industrial board for the city handed Evans a list of companies that were ready to sign up for service.

"High-speed Internet allows a rural town to be more competitive with the bigger cities," Evans says. "They are hungry for this service. We had more than 40 contracts before we turned the system on."

The economic formula works, even if the company has access to high-speed T1 telecom lines. One of the towns, which now has Texas Communications' wireless Internet service, had two manufacturing plants, one making prefabricated metal buildings and the other packaging Miracle-Gro® plant food, each paying \$1,500 for T1 high-speed Internet service. Both companies realized significant cost savings by renting service on the Texas Communications' wireless Internet system.

Nalcom Wireless Communications, Palestine, Texas, whose main business is providing UHF LTR dispatch service on over 100 channels at 35 transmitter sites across East Texas, is relatively new to wireless Internet. While some wireline high-speed Internet service is currently available in Palestine, a significant portion of the 30,000 folks in the area does not have access to that service. They make up a target market for Nalcom. Plans are set to deploy at least four six-panel antenna sites across the Palestine area in order to make high-speed Internet service available to retail businesses and consumers.

Local Governments, Industrial Parks Find Wireless Internet Economical

The economics of wireless Internet also work for governmental entities and industrial parks. Generally located in the fringe of America's cities, many industrial parks are not wired for cable service and renting T1 access is cost prohibitive. Some industrial parks are administered by local government bodies.

TFMComm, Inc., based in Topeka, Kansas, has found that government projects evolve as more people

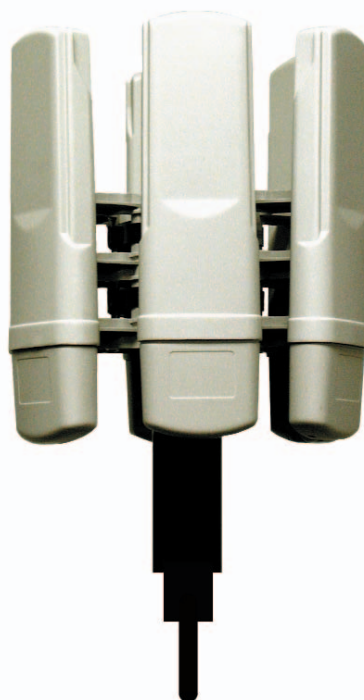


photo courtesy of Motorola



photos courtesy of Motorola

The Access Point (center) sends information to and from the Backhaul Unit (left) and the subscriber module (right) located on the customer's premises.

find out about the advantages of wireless Internet service. For example, the Leavenworth Area Development (LAD) arm of the County of Leavenworth, Kansas, administers two industrial parks, neither of which had cable or high-speed Internet service. LAD officials had decided against the option of wiring the buildings and renting a T1 phone line. As the LAD waited for funding to deploy wireless Internet equipment, others in the County government became aware of the benefits of wireless Internet service. Now, in addition to the LAD, the ambulance service and health department will be added onto the system.

The County eventually made the funding available and put the wireless Internet service up for bid, and TFMComm, recently won the right to serve as their provider. The dealer will deploy a Canopy wireless Internet system and rent service to subscribers.

“The evolution of the project doesn’t stop there,” says Doug Flair, TFMComm president. “Leavenworth County’s wireless Internet system will continue to grow, tying the telecommunications of multiple buildings together at the courthouse. These additions may also be put up for bid, as well.”

Flair already sees other WISP opportunities in the local government. TFMComm is currently working on a solution with a local government that is citing spotty T1 service and is interested in an economical wireless solution that will tie together the telecom systems of the city police and the local college campus police force.

“In selling to a local government entity, a dealer may benefit by tapping into money already budgeted for T1

lines to pay for wireless Internet service that provides that phone service, plus computer service and even video transmission,” says Flair.

School Systems: A Target Market With Government Funding

TFMComm also has experience selling wireless Internet service to schools that receive funding from the Universal Service Fund for Schools and Libraries, or E-Rate, which provides discounted services on telecommunications, Internet access and internal services for all public and private schools and libraries. The Universal Service Administrative Company (USAC) administers the Universal Service Fund at the direction of the FCC.



photo courtesy of Motorola

The Internet generation is now becoming wireless.

USAC's Schools and Libraries Division administers the E-rate, which provides schools with discounts of 20 percent up to 90 percent of the cost of eligible services. Discounts are paid directly to the companies providing the service.

Not all schools rent the equipment; some purchase the communications system, as well. For example, in one rural community, the athletic department of a school, which is classified as a separate, taxable entity, purchased the equipment and rented it to the school and to other businesses as a way to fund its athletic programs.

The process of selling to a school system could take anywhere from three to six months to complete for the budget of the following school year. "It is not a fast process, but we did have one school that did not want to wait for the grant so they bought the service immediately," Flair says. "It goes both ways."

In one small town, Evans says, the school system wanted the teachers to be able to grade their student's papers on their laptop computers at home and still be able to access the school's intranet, as well as the Internet. Texas Communications provides that service with a Canopy system.

Wireless Internet Aids in Shuttle Disaster

When several federal government agencies converged on Texas to recover debris from the Space Shuttle Columbia disaster, Nalcom was able to quickly assist the effort by deploying a high-speed data access network at the incident command post.

Following this national tragedy, federal agencies — including the National Aeronautics and Space Administration, the Federal Emergency Management Agency (FEMA), the Environmental Protection Agency and the U.S. Forestry Service — set up a command post in Palestine with more than 1,000 personnel with administrative support. The building they selected, however, did not have high-speed Internet connectivity and the major telecom carriers were not able to provide the required bandwidth for the operation.

Within 24 hours, Nalcom responded by setting up a Canopy wireless Internet system providing data circuit speeds of 3.5 megabits per second (Mbps). The experience was an eye-opener for Nalcom President Rick Nally. He now sees a need, working with FEMA, to create a plan for rapidly deploying Canopy systems to aid in communications for relief agencies whenever disasters strike across the nation.



photo courtesy of NASA

A Space Shuttle takes off on a mission in the 1990's.

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To be an ISP or Not? Radio Dealers Answer the Question Differently

A dealer can become a *de facto* "Internet Service Provider" by installing the wireless Internet technology and renting access to multiple entities. Currently, TFMComm serves in that capacity, maintaining ownership of the equipment and charging for access to high-speed Internet service via the Canopy system. "We see this as a community repeater for the Internet," Flair says. TFMComm would sell the system outright, as well, if the customer wants.

Texas Communications had a jump on the wireless Internet business, having spent the last five years as a *wireline* Internet service provider. Last year when Motorola came out with its Canopy product line, Texas Communications dove into wireless Internet as an additional service offering and has deployed it in Abilene and the surrounding rural towns, College Station, and San Angelo. Systems are proposed in Austin and several other rural market areas.

Texas Communications built its Canopy system and markets it to subscribers. It takes advantage of its wireline Internet investment, which includes eight T1s and a fiber switch located in Abilene. "We were already an ISP in Abilene, so we used the Canopy backhaul unit to provide that bandwidth, for which we were already paying, to each of the smaller towns," Evans says. "It vastly increases the return on our telecommunications investment."

If the Internet is new to the dealer, teaming with an established ISP can expedite the company's entry into the wireless Internet industry. Plus, high-speed wireless connectivity may be a complementary service to the ISP's current product offering.

Nalcom plans on partnering with a local Internet Service Provider but will continue to be very involved in the sales aspect. "If you have a good relationship with an established local Internet provider, it just makes sense not to reinvent the wheel. They already have the needed e-mail servers, the firewalls and everything worked out with the local telco," Nally says.

Not all radio dealers want to get involved in the sales and marketing of wireless Internet service. Cattron Communications, Inc., of Sharpsville, Pennsylvania, got involved in broadband wireless equipment when an ISP, Infinity Online, Inc., of Sharon, Pennsylvania, approached them to provide high-speed Internet to local businesses.

Infinity had a dilemma. A local health care facility within Cattron's six-county service area had requested enough bandwidth to require a data speed of 3 Mbps or three T1 lines. The health care facility was planning on sending medical information over the Internet to physicians at larger hospitals for after-hours diagnoses.

To avoid the cost-prohibitive and lengthy endeavor of

installing the T1 lines, Infinity looked to Cattron to find a wireless solution.

Cattron presented a business plan to Infinity, which included the dealer's existing towers as a basis for the system and the installation of backbone equipment. Infinity markets the high-speed Internet service and Cattron sells the equipment through Infinity and provides installation and service. Cattron uses a system by Wave Wireless Networking, Sarasota, Florida.

"Infinity had the ISP capabilities but did not have the wireless end," says Ramon Jones, Cattron Service Manager. "We provide the towers and the RF knowledge and they do the networking at the customer's location. It was a nice marriage."

The Sharpesville/Sharon area includes about 25,000 to 30,000 people, and the number one reason these firms, now numbering 22, subscribed to this service was because no high-speed alternative was available in the mostly rural area. Today, the system boasts a variety of business users, including insurance, manufacturing and pharmaceutical companies.



photo courtesy of Motorola

A Business Model

TFMComm's Flair prefers to rent service on its wireless Internet equipment, as opposed to selling the equipment outright. The minimum number of users needed to maintain profitability for a wireless Internet service will depend on the Internet prices the market will bear and the dealer's costs for equipment and the rent for

T1 telecommunications service and tower site rental costs, if applicable. “We are willing to implement a system with as few as five users and then we try to grow it from there, Flair says.

As a WISP, TFMComm requires the user to pay a hook-up fee, a flat monthly service fee and to sign a two-year contract for service, which mirrors the commitment the dealer has to make to the phone company for T1 service. Eventually, when the system is loaded with users, Flair plans to limit bandwidth to maintain optimal performance.

Growing recurring revenue customers by adding wireless Internet is important to dealers, according to Nally so they can “maintain their growth and to survive within our industry.”

Serving as a WISP essentially allows the dealer to spread the cost of the T1 connection across several users. The more users on a system, obviously, the greater the profit margin over T1 and tower rental costs. One dealer sells five tiers of bandwidth users based on how much download speed capability they need: 256 kilobits per second (Kbps), 512 Kbps, 768 Kbps, 1024 Kbps and 1536 Kbps.

Nally notes the tiered bandwidth approach is important to determine the amount of bandwidth the user needs. “You don’t want to take a blanket approach and sell everyone 512 Kbps,” he says. “See what their expectations are.”

Conclusion

The wireless Internet holds enormous potential for the future. In general, the needs lie in businesses or residential areas not served with high-speed Internet or as an economical replacement for T1 lines. Target markets for wireless Internet can be found in each radio dealer’s customer base.

Radio dealers are well known for



Wireless Internet is inspiring some side business, as well. TFMComm manufactures and sells this gold-anodized Canopy Cluster mount.

understanding their customers’ needs and providing solutions to their problems. The solutions that wireless Internet can provide are as varied as the communications needs of the customers.

For example, general contractors could use high-speed Internet in their on-site offices to receive bids and quotes. Any company, utility or agency with security concerns can use this technology for video surveillance. Colleges, such as Notre Dame, are expanding their Internet and intranet networks beyond the campus to provide low-cost access to staff and students in the surrounding community. Public safety agencies can use Internet connectivity direct to emergency response vehicles for mobile data applications. Plus, high-speed wireless Internet equipment is

capable of doubling as intranet technology, tying multiple offices together with computer, voice over IP and video conferencing.

Involvement with wireless Internet technology, no matter in what capacity, is a natural adjunct to a dealer’s business. It simply is a perfect fit. ■

For more information on wireless Internet funding for schools and libraries, visit www.sl.universalservice.org. Or for information on Wave Wireless Networking, call 941.907.2300 or visit www.wavewireless.com.

For more information on Canopy, call 888.605.2552, e-mail technical-support@canopywireless.com or visit www.motorola.com/canopy.