

Nortel Networks

Solution Brief

On-site network solutions *for apartments and* **condominiums**

Technologies for on-site service providers

Today's typical apartment or condominium dweller is a techno-savvy young professional who values reliable, high-speed bundled services as highly as a pool or tennis court when choosing a place to live.

In spite of growing demand for sophisticated network services in multi-dwelling units, this market is still largely under-served. Few service providers focus in earnest on this market, leaving about 95 percent of today's market up for grabs.

The service provider who extends voice, video, and data over a broadband access network to these consumers will gain a foothold in a lucrative niche market—one that the Yankee Group estimates will soon represent \$20 billion a year in service revenues.

Multi-dwelling apartment or condo buildings—20 million of them in the U.S. alone—are emerging as a large and profitable market opportunity for service providers.

The typical resident is primed to buy services that are in short supply. According to our research, about 65 percent of apartment and condominium dwellers own a computer, nearly half are younger than 35, collectively they have \$125 billion a year to spend, and they are hungry for broadband access and services.

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Bundled, broadband services...

These young, moderately affluent tenants expect efficient and convenient delivery of high-quality services to the home. They want enhanced services—such as video and “smart home” services, plus high-speed Internet access—but most of them aren’t getting it. Yet. Many of these end users are unhappy with their current telecommunications and entertainment service options.

This scenario opens up promising opportunities for service providers to expand their role—to become “on-site service providers”—by creating fast access networks that extend bundled broadband services directly to each unit of an apartment or condominium complex.

When you add up local, long-distance, and Internet services to multi-dwelling unit (MDU) subscribers, you’re looking at a \$20 billion potential market for these established services within a few years, according to the Yankee Group.

Looking ahead, add more revenue potential for enhanced services such as hosted applications, eConcierge services, eValet, personalized video services, personalized firewalls, and quality-of-service differentiation. Cahners-In-Stat estimates those incremental services to reap another \$780 million through 2004.

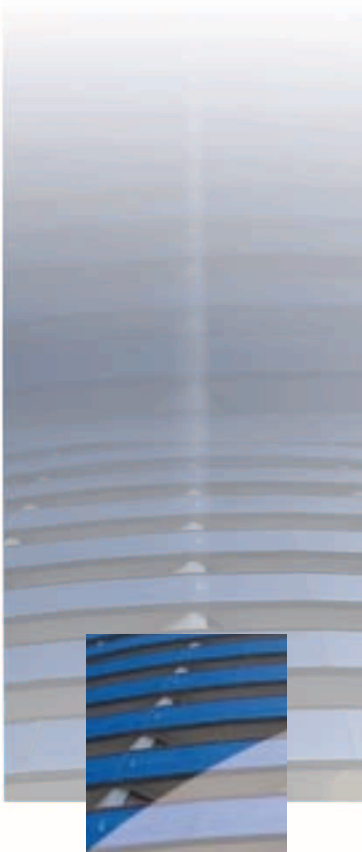
Complete solutions to profit in the MDU market

Nortel Networks has complete solutions to help property owners and service providers increase revenues and capture a strong position in this new and rapidly growing market, no matter which access technology they choose to deploy—using existing in-building wiring or new infrastructure.

Service providers benefit by extending the reach of their brand and voice/data/video service offerings, at relatively low cost, since multi-dwelling units have such a large density of potential customers with similar service requirements.

Property owners/managers increase property values and allure by offering in-building, broadband connectivity, which enables the delivery of the advanced services their target tenant base desires. They can also reduce operations and administration costs by using the new intranet and a custom Web portal for two-way communication with tenants, such as receiving and dispatching maintenance requests.

Subscribers who live in networked buildings can graduate from low-speed dial-up modems or ISDN lines to always-on, high-speed Internet access or remote LAN connectivity. Not only can they access a broader range of services, they can have them with on-demand convenience.



...directly to each unit in apartment and condominium complexes

With our MDU solutions, on-site service providers can offer broadband speed, connectivity, and compelling new applications such as multi-player gaming, virtual CD-ROM, streaming video clips (such as news on demand) and more.

Our MDU solutions will be particularly attractive to work-at-home users who have been frustrated using slow, dial-up connections to download large files or access critical enterprise applications. For many of these telecommuters and “day-extendors,” the employer will pick up the tab for broadband connections, making the service an even more compelling proposition.

Bringing the point of presence home

The basic concept of Nortel Networks on-site service provider solutions for multi-dwelling units is to move the point of presence (PoP) right into the residential building. These mini-PoPs are built with scaled-down versions of the carrier-grade aggregators we deploy in large Internet service provider (ISP) PoPs or central offices.

By having multiple subscribers share the cost of a dedicated, high-speed link to the Internet, a whole new wealth of bandwidth becomes affordable to the average residential user.

From there, the specific architecture for each MDU solution is defined more by business and service attributes than by equipment—reliability, quality of service, service choices, economy, ease of management.

Whatever the building/complex configuration, existing in-building wiring, and service provider business case, Nortel Networks can create the most effective MDU architecture to fit.

A typical MDU solution uses a unified, multiservice network, including high speed access, carrier-grade voice, and multi-level Internet access speeds. Solutions can be customized to deliver integrated voice, video, and data services over a single pipe—or a harmonious coexistence between existing in-building voice wiring and a new video or data infrastructure

Broadband subscriber access can be offered through a choice of technologies, including but not limited to the following options:

- **ISDN or xDSL** over traditional copper telephone lines
- **Cable networks** upgraded for two-way communication
- Dedicated copper- or fiber-based **Ethernet connections** (10 BaseT/100 BaseT/100FX)
- **IP (Internet protocol) connections**, including IP virtual private networks
- **Wireless access** from fixed and satellite systems, including our in-building wireless Ethernet systems

Our complete MDU solutions also include high-bandwidth core systems, transport networks that exploit the bandwidth-boosting capabilities of dense wave division multiplexing (DWDM), and powerful data centers for service, network, and content management.

Network operations and service administration can be managed remotely or on-site, using our unified suite of network and service management software. For complexes with multiple buildings, a master building network can provide centralized management for other buildings, to increase efficiency and reduce costs.

Whatever the size and unique requirements of the apartment or condominium complex, Nortel Networks can create the on-site network architecture to fit.

Benefits of our MDU service solutions

Service providers can capture their share of a huge, underserved market, one in which the few focused entrants have garnered only a five percent market share as of 4Q2000. Average revenue per subscriber tends to be higher than typical single-family residential subscribers, because apartment and condo-dwellers are more likely to subscribe to high value convenience services, such as pay per view.

Capture your share of a fast-growing, largely underserved niche that represents a potential \$20 billion market within the next few years.

Upgrading existing networks to offer these services requires relatively low hardware cost, because hundreds or thousands of customers are clustered in one high-density location.

By implementing a highly sought after amenity, building owners and property managers can increase property value, upgrade property classification, attract more potential tenants, and reduce churn.

Agreements with on-site service providers create additional recurring revenues, generally without up-front installation costs.

End users enjoy state-of-the-art network access and applications, an online community targeted to the real-life community, competitively priced service packages, the convenience of one-stop shopping for diverse entertainment and communication services, and 24-hour help desk service.

Work-at-home users especially will appreciate that their local access network has been engineered to meet the stringent reliability expectations of public service provider networks.

A closer look at the service opportunities

With our MDU network solutions, on-site service providers can offer a broad range of profitable services to attract new customers and increase revenue per customer. Here's a sampling of the opportunities:

- More than 100 channels of real-time broadcast TV (HDTV or CATV)
- High-speed local area networks (LANs) and wide area networks (WANs), transported to the network over frame relay, ATM, and optical protocols
- Full-featured local and long-distance telephony, including such popular features as caller ID, call forward, three-way calling, and much more

- Differentiated high-speed Internet access with email, Web hosting, interactive gaming, and more
- IP (Internet Protocol) virtual private networks (VPNs)
- Customized portals to eCommerce applications
- On-line services such as finance, purchasing, and local information
- Home networking of multiple PCs, web-TV units, and peripherals for family or home-office use
- "Smart" home networking to manage appliances, comfort and lighting systems, security, meter reading, etc.
- Feature films and past video programming; video streaming
- Hosted applications

Cahner In-Stat projects the market for these services among apartment and condo-dwellers to grow from less than \$40 million in 2000 to almost \$780 million by 2004.

To find out more about our complete solutions for becoming an on-site service provider and securing your share of this fast-growing MDU market, call us or visit our Web site at: www.nortelnetworks.com

Nortel Networks as your ally

Nortel Networks is your fast track to success. We have the technology, people, and programs to jump-start your entry or expansion in any on-site service provider market.

- Our **complete technology portfolio** includes highly scalable, carrier-grade technologies for access, aggregation, and core. That means you can rely on one source for your end-to-end MDU solutions. If you prefer a multi-vendor solution, you'll appreciate our commitment to open, industry standards for maximum interoperability.
- Our **Global Professional Services team** delivers service solutions for any and all phases of your business and network evolution, from strategic planning to network optimization to ongoing maintenance and support, and everything between.
- Our **alliances** with manufacturers of customer-premises equipment expand your options for customer access devices, no matter which technology you choose to deploy.
- **Financing options and incentives**—including trial programs, where available—can minimize the risk of entry into new markets.
- Our **cooperative marketing and business planning programs** accelerate your market success with a full portfolio of enhanced revenue services.



In the United States:

Nortel Networks
35 Davis Drive
Research Triangle Park,
North Carolina 27709
USA

In Canada:

Nortel Networks
8200 Dixie Road
Suite 100
Brampton, Ontario L6T 5P6
Canada

For more information, contact your Nortel Networks representative, or call 1-800-4 NORTEL or 1-800-466-7835 from anywhere in North America.

<http://www.nortelnetworks.com>

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