Valuing MDU Bandwidth

Before you buy an MDU community, examine the low-voltage wiring for four types of problems that may affect video service provision

By Henry Pye ■ *JPI*

After purchasing existing MDU communities, more and more owners are discovering hidden costs and challenges associated with those communities' low-voltage infrastructure and related voice, video and data services. As a result, prospective owners are increasingly inspecting low-voltage infrastructure in great detail, reviewing contracts and services during due diligence, and adjusting the purchase price for shortcomings.

Of the acquisition targets we have inspected over the past two years, over 70 percent had code violations. We are working with the providers to upgrade the wiring or services at 90 percent of the communities we've purchased.

There are four key problem areas:

Problem 1: Multiple System Operators (MSOs) continue to deploy additional services that are taxing the capabilities of existing coaxial infrastructures

Unfortunately, most coaxial infrastructures installed before the late 90s – and many installed afterward, for that matter – are insufficient for the current services provided by MSOs. Put simply, the MSOs are forcing more than three times as much through the pipes.

As with water lines, as pressure is increased imperfections and problems with the pipe are amplified. Moreover, even when quality cable is used, it is often installed incorrectly. How far certain cables can be run given a specific number of splits and amount of video signal is simple to calculate – and the math is unyielding. Unfortunately, many providers and owners fail to do the calculation until it is too late.

Until recently, the cable companies assumed responsibility for the challenges, recabling when necessary as part of a long-term marketing relationship with the property owner. While this often creates other problems (see below), most owners used to be contentedly unaware of the challenges or related costs. However, as the MSOs face greater competition and redefine their revenue projections, they are increasingly reluctant to cure the problems – instead asking the owner to share the burden.

Problem 2: Incumbent Local Exchange Carriers (ILECs) are deploying new delivery systems and products, simultaneously demanding more from traditional unshielded twisted copper infrastructure and demanding additional wiring and pathways

The unshielded twisted copper infrastructure traditionally used by the ILECs is also under pressure, especially onsite infrastructure installed before the late 1990s. AT&T's U-Verse and all xDSL technologies assume a good quality, continuous pair from the demarc to the faceplate in the unit – an assumption that seldom proves to be valid.

Precarious grounding and lightning protection daisy-chained to incoming natural gas meters by MSO's installer.

Ill-fated penetration of 4-hour-rated stairwell ceiling and walls without assembly or fire-resistant seal.

Of the acquisition targets we have inspected over the past two years, over 70 percent had code violations. We are working with the providers to upgrade the wiring or services at 90 percent of the communities we've purchased.

While some problems can be avoided by designing with great care, even perfect phone infrastructures can become confused over time. Unfortunately, good phone installation during construction is rare and most existing properties will face a number of challenges, from daisy-chaining to screw terminals.

When it comes to this regulated copper, the owner or resident can be billed by the ILEC for work on the owner's side of the demarc. However, the ILECs have been willing to absorb some of these expenses in exchange for an exclusive marketing relationship for some services.

Verizon's FiOS networks leapfrog some of the twisted copper challenges by extending fiber to the unit, or to a point no more than a short distance away from the unit. However, the jump to fiber is expensive. The most basic FiOS upgrade demands a new community fiber distribution system

Legacy daisy-chained multiple pair twisted copper cable, unfit for almost any service.

Problematic cable management and organization at demarcation point.

and often a new pathway to the unit.

Depending on the quality of the existing cabling, new home-run and inside wiring may have to be installed. Because it relies on twisted copper and coaxial cable from the point where the fiber ends, FiOS demands more from the inside and home-run wiring than any other service.

For now, Verizon is picking up most of the expense, though Verizon often installs only a pathway to each unit, deferring all other unit costs until a resident orders service. Everyone understands that owners will eventually have to share the burden if they want FiOS services for their residents. As always, these costs will be determined by the quality of the existing low-voltage infrastructure.

Problem 3: ILECs and Private Cable Operators (PCOs) are failing to upgrade existing Direct Broadcast Satellite systems

One of the greatest challenges facing many multifamily owners is the obsolescence of the existing DBS system deployed to their property. Usually deployed by either a PCO or an ILEC, most MDU DBS systems are already outdated or will be within another few years. While new DBS systems are promising and competitive, the cost to upgrade is significant. Wanting to delay or avoid the expense of upgrading the DBS system, many PCOs and ILECs are knowingly providing less than competitive services.

Owners' Checklist for Bulk Services

Decide, detail, communicate and contract for the exact bulk and premium services you want for your community. For many MDU verticals, there are few amenities as critical and expensive as bulk video and data services. Put simply, if the services are not competitive you lose residents. For many MDU verticals like student housing, bulk services account for 3 to 7 percent of a community's intrinsic value.

Nevertheless, services are an afterthought for many owners. Few, if any, complete the requisite financial analysis or truly ask what bulk services they need for a community. Every owner, vertical, submarket, and community is unique. One size seldom fits all. It is critical that an owner determine which bulk services and premium/upgrade services residents want.

While there are a few exceptions, generally the premium services that residents can individually upgrade to are as important as the underlying bulk services. The service contracts and infrastructure should be able to provide all commonly available upgrades such as DVR, HDTV, and static IP addresses.

Here's the checklist:

❑ Include enforceable service-level terms in contracts for bulk and premium services

Having ascertained the services you want, it is critical that you include enforceable service-level terms in your contracts. The contract must unambiguously detail the provider's obligations and what and how many failures result in default. The service-level provisions define the service. Everything else is at the provider's discretion.

The contract should define both major and minor service disruptions and the corresponding response and cure periods. Multiple failures to meet the criteria should result in default.

Over the term of the contract, services and their value will change. It is important that neither the bulk nor premium services become outdated. Providing for competitive premium services in a contract is simple. However, you also need the flexibility to modify the bulk services and related fees over time. The provider should be obliged to sustain competitive bulk and premium services for the life of the contract.

In addition, the contract should clearly require the provider to maintain, upgrade and replace electronics. Onsite staff simply does not have the wherewithal to maintain the electronic equipment and systems related to bulk video and data services. Upgrading and replacing equipment and cabling significantly challenges operating budgets that are often rigidly tied to financing.

Obviously, providers will include the cost of maintaining, upgrading and replacing equipment and sustaining competitive services in the bulk fees. However, it is essential for any long-term contract to cover upgrades. For example, one of the greatest challenges facing many multifamily owners is the obsolescence of the existing Direct Broadcast Satellite (DBS) systems deployed to their communities. This is particularly prevalent at communities with bulk video services. Many owners are now facing costs of over $100,000 to upgrade DBS equipment.

❑ Prudently capitalize the bulk fees

For every dollar of capital cost, a provider will bill an owner two to five dollars in present value over a bulk service contract term. This critical rule is overlooked by many owners, especially those unfamiliar with bulk services.

In the absence of bulk services, owners understandably focus on obtaining door fees, minimizing construction cost and generating ancillary income. However, focusing on these can be devastating to a bulk service contract. Put simply, an owner is throwing money away.

With few exceptions, an owner should decline ancillary income, reimbursements and door fees for contracts

with bulk services. Given the relative cost of capital and return periods, it is nearly impossible for these to be worth the resulting increase in bulk fees.

The owner should install almost the entire low-voltage infrastructure including:

- All of the home-run wiring (building closet to distribution panel in each unit) and inside wiring (distribution panel to the faceplates) related to bulk services; and
- As much of the community distribution as possible, short of creating other problems.

The owner may also consider reimbursing providers for other related capital costs, though the corresponding contract should secure the owner's investment at contract termination. An owner wants to capitalize as much of the bulk fees as is prudent without compromising service quality or creating future budget challenges.

Nevertheless, seeking to minimize bulk service fees, some owners are purchasing and maintaining onsite equipment; consequently they become the provider. In almost every instance, these owners eventually sacrifice service quality or accept operating responsibilities that far exceed the initial financial benefits.

❑ Appraise bids based on total cost – the discounted value of the bulk service contracts plus additional owner construction costs or payments

Value should govern the financial evaluation of bulk service proposals. After verifying that each provider has bid the requested services, the goal should be to minimize the discounted value of the contracts plus construction costs. Generally, the present value of the bulk fees will dominate any model. However, differences in providers' construction costs can be significant.

❑ Recognize that the management of bulk data is critical

The levels of management and support should be unambiguously defined in any bulk data service contract. Without proper management, the bulk service will be unacceptable, regardless of the amount of bandwidth provided to the community.

For many MDU verticals like student housing, bulk services are 3 to 7 percent of a community's intrinsic value.

The management of the service, customer service, and technical support is generally 40 percent of the cost and is by far the most difficult piece. Almost anyone can purchase equipment and acquire bandwidth. Using them to provide competitive data services is far more difficult.

❑ With a few exceptions, only consider bulk wireless Internet as a supplement to wired Internet access

Wireless Internet access is a wonderful and popular amenity. However, wireless Internet is inherently less reliable than wired connections and should not be the primary means of providing bulk Internet access.

There are a few exceptions. In some MDU verticals, wireless can be a fair method of retrofitting Internet access. However, the absence of a wired Internet connection often indicates larger infrastructure challenges that will eventually have to be resolved.

❑ Detail additional costs – taxes, fees and bulk price increases

Any bulk service contract should detail the entire cost of any bulk services including applicable taxes and fees. Additional taxes and fees can be as high as 14 percent. Providers routinely request 9 percent annual increases with only one month's notice.

Fee increases should be limited as a percent per year and as a percent of comparable retail rates. The contract should also provide for an adequate notice period for any fee increases, matching the community's budget cycle.

❑ Include set-top boxes and bulk digital services or specify the later cost

The costs of digital service and set-top boxes are among the most important aspects of any new bulk video contract. Residents are valuing analog television, the principal means of providing bulk video services, less and less.

Critically, most MSOs are also moving to recapture bandwidth from analog channels. Comcast recently announced that by July 1, 2007, it would eliminate 38 channels from the analog expanded-basic lineup to free up bandwidth for new services.

The remaining analog tier will include local broadcast as well as public, educational, government, and a few other channels, but will lack many channels key to any bulk offering including ESPN, TNT, Lifetime and FX.

Thus, at some point in the next three years, most owners will have to provide all digital bulk video services. While some residents will have CableCARD televisions or equivalent PCs, for the near term set-top boxes will be a necessary component of any digital service. With basic set-top boxes retailing for between $6 and $8 per month, digital service can significantly affect a bulk video budget.

Accordingly, any bulk video service contract should either include set-top boxes and bulk digital service or specify the cost for later in the bulk video contract term. Of course, this poses further challenges for bulk DBS infrastructures that often lack a full complement of available digital services or sometimes any digital service.

❑ Appraise how the bulk services relate to triple/quadruple play bundles and bundled/premium pricing

Increasingly, how a bulk service relates to premium services and service bundles is critical to residents' valuation of the bulk service. If a DVR costs $6 for a standard expanded-basic video

services customer, it should cost the same for a bulk expanded-basic video services customer.

Similarly, if an ordinary customer who purchases expanded-basic television and Internet access recieves a discount on VoIP, so should the bulk video and data customer.

❑ Evaluate how you can use the bulk data services infrastructure for community operations

More and more, owners are looking to data services and related infrastructure to network community operations. To date, the examples are few and limited. Additional fiber is used for fire loops and bulk data services are used as messaging systems.

However, as onsite operations increasingly use IP-enabled devices and thin client systems, the use of data services and related infrastructure will increase exponentially. For example, networked IP utility submeters will dramatically change meter reading and reporting.

Recently, one of our third-party partners asked us to calculate probable best- and worst-case bulk services scenarios for an average-sized, recently constructed off-campus student housing acquisitions target.

The eccentric seller was unwilling to share the existing bulk services agreement. The community provided bulk video, data, phone and security.

At 6 percent and 10 years, we believed the discounted cost for wisely negotiated and capitalized contracts for bulk video with set-top boxes, data with wireless Internet access, local phone by unit, and security by unit was approximately $1.8 million.

If the owner negotiated the contracts poorly, capitalized little, and settled for 60 percent of retail, we estimated that the discounted cost of the bulk services contracts would be in excess of $4.1 million. The difference in the present values of the bulk services equaled nearly 6 percent of the property's sales price.

Even though bulk video services are inevitably moving toward all-digital programming, many bulk DBS deployments cannot provide basic digital programming.

This problem is acute for MDU verticals where bulk video programming is prevalent. Even though bulk video services are inevitably moving toward all-digital programming, many bulk DBS deployments cannot provide basic digital programming.

Problem 4: The real estate industry is realizing that many providers and owners have cabled, repaired and upgraded onsite low-voltage infrastructures with reckless disregard for pertinent life-safety codes

Finally, the industry is slowly realizing that providers and owners have cabled, repaired and upgraded onsite low-voltage infrastructures with an imprudent disregard of pertinent codes. The most common low-voltage violations pertain to grounding/lightning protection and fire ratings. Primarily, Article 800 of the National Electrical Code governs the grounding of low-voltage cabling. While grounding is a basic principle that almost everyone understands, it is regularly forgotten.

Cable running in the ceilings, floors and walls of a building can also contribute to the spread of a fire and worsen the damage it causes. The NEC attempts to address these concerns by establishing a fire-rating classification system for communications cables. Most multifamily fire-rating mistakes result from using the wrong classification. The cable rating commonly used in single-family homes does not have the fire-rating classification you need to pass through more than two floors in a multifamily building.

Unfortunately, most upgrades are performed piecemeal during initial service installations. Although this is an understandable practice for single-family homes, it is intrinsically problematic for multifamily communities. While the provider's employees perform some installations, its contractors do most of the onsite work.

Whom can you hire to inspect low-voltage infrastructure?

Whoever inspects the property should have a strong understanding of the current and near-term voice, video, and data technologies as well as relevant codes and standards and multifamily contracts and responsibilities.

Even assuming that they understand the nuances of existing properties, many low-voltage contractors struggle to grasp the contractual relationships that determine responsibility. They also generally provide less refined documentation. Similarly, most consultants lack the technical knowledge to complete the inspection. Thus, I can recommend only a few low-voltage consultants and contractors to inspect an existing community's low-voltage infrastructure:

Richard Holtz, Infinisys, Inc., 482 Fentress Blvd., Suite N, Daytona Beach FL 32114; 386-236-1500; Richard.Holtz@electronicarchitect.com.

Bob Schneider, KCI Technologies, Inc., 14502 Greenview Drive, Suite 100, Laurel MD 20708; 410-309-7902 x206; bschneider@kci.com.

Mike Kolb, Progressive Communications/ANS, 3401 E University Drive, Suite 203, Denton TX 76208; 817-822-8111; mkolb@anscom.com.

Most upgrades are performed piecemeal during initial service installations. An understandable practice for single-family homes, it is intrinsically problematic for multifamily communities.

Generally, the contractors making an installation at a multifamily community are the same ones servicing single-family homes. When faced with inadequate cable to a unit or faceplate, they simply run a new one. Because they have little understanding of the relevant codes, these quick fixes are plagued with code violations. In one quick install, the contractor may make grounding and fire-rating violations while simultaneously breaching fire moisture barriers.

To Sum Up

For many large owners and those backed by professional management companies, acquisition due diligence is routine science. With tremendous combined experience, these companies examine almost everything. Because ancillary income is so significant, thorough contract reviews, service summaries and budgets are standard.

But until recently they overlooked the infrastructure underlying the delivery of these services. Services were evolutionary. Change was relatively gradual. Few repairs and upgrades were required and the providers dutifully made them.

This has all changed. Services are digital. Multiple providers are providing triple play and quadruple play bundles. Owners are responsible for more and more of the low-voltage infrastructure and the lost leases from having less than competitive services surpass any ancillary income.

For MDU verticals where bulk services are prevalent, inspecting the low-voltage infrastructure and reviewing the contracts and services during due diligence are critical. For many MDU verticals like student housing, bulk services equal between 3 and 7 percent of a community's intrinsic value. The design and quality of the existing low-voltage infrastructure can determine the quality and cost of the bulk services. **BBP**

About the Author

Henry Pye handles Resident Services and Technology at JPI. He can be reached at HPye@jpi.com.