How to Allocate Bandwidth

To gauge bandwidth for multifamily housing, find out what devices and applications subscribers are using – and what they will use in the future.

By Alexander Chaney ■ *Korcett Holdings Inc.*

Three years ago, shared Internet services in multiple-dwelling units required modest bandwidth. Most subscribers had, at most, a desktop and a laptop. Their needs were essentially limited to emailing, Web surfing and, in some cases, viewing low-resolution video. Today, a typical subscriber has a desktop, a laptop, a smartphone, a streaming video device, a tablet and an online gaming device. New technology that has a significant impact on current bandwidth usage includes

1. Streaming media via Netflix, Amazon, Apple, Pandora and Sirius/XM. Each of these streaming technologies requires massive amounts of bandwidth per device.
2. Smartphones and tablets that can browse the Internet and use the same streaming data technologies that are available on full-size computers. Many media outlets now offer their own streaming media applications (apps) for mobile devices.
3. Game consoles. Modern gaming systems download massive data files for each new game title played. Even more significant are massively multiplayer online games, which require low-latency, high-volume data streams.
4. BitTorrent, a peer-to-peer file-sharing technology that allows users to download and upload media files, such as documents, music files and even full-length feature films.
5. Videoconferencing. As more and more of the workforce telecommutes, bandwidth-hungry applications such as videoconferencing and virtual meetings are becoming pervasive.

These and other trends have direct, appreciable impacts on overall bandwidth use. Infrastructure in many multifamily communities was designed to provide a static amount of bandwidth over the service term. With today's bandwidth-hungry consumer devices and applications, nearly all older networks face oversaturation that will ultimately lead to unhappy and vocal subscribers.

PREDICTING PERFORMANCE

To predict and address Internet access performance issues, multifamily owners and providers do the following:

1. **Profile subscribers.** A typical college student has a significantly different usage pattern and number of devices than, for example, a typical married couple or a retiree household. How many devices does your typical subscriber have? Do you have a mixed-profile site? Are you allowing all types of traffic? The answers to these questions are all critical to understanding and profiling your typical subscriber.
2. **Manage bandwidth intelligently.** Providing a bandwidth pipe that is sized properly for a particular property is more important than offering bandwidth that sounds great in marketing literature. Offering subscribers a 50/50 pipe may seem like a good idea – what subscriber would not want one? In practice, however, providing much more upload capability than most users require may encourage behavior that degrades services for all other residents. For example, subscribers may set up their own torrents and streaming video servers on the network (this can create copyright-infringement problems in addition to degrading the network). What starts as a great marketing gimmick can become a significant negative experience for subscribers.
3. **Review emerging technology.** Keep a vigilant eye on emerging usage trends so you can anticipate bandwidth demand. Changes can happen very quickly; for example, the launch of the video game "Call of Duty" immediately added millions of gamers averaging several hours per day using this new bandwidth-intensive game.

No one can predict the next big, bandwidth-hungry device or application. All that can be predicted is that a constant supply of new devices and applications will drive an unending appetite for bandwidth.

Given the increasing demand for more and faster Internet access, hardwired connections are here to stay for the foreseeable future. Although new wireless technologies such as LTE will suffice for normal, day-to-day administrative usage, they will not replace hardwired Internet connections. Proper bandwidth management is an ongoing and iterative process that begins with understanding and profiling your subscribers. ❖

About the Author

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