

No One Needs a Gigabit Today. Here's Why That Doesn't Matter.

Broadband providers must take the long view and build networks that will meet consumers' rapidly rising demand for bandwidth well into the future.

By Trevor Jones / OTELCO

Every broadband provider has had a conversation with someone who just couldn't fathom why internet service needs to improve and why the incremental improvements of the past are no longer enough to keep up. Perhaps it was a neighbor whose support was really needed for a bond issue. Maybe it was an incumbent carrier or a bidder on an RFP who declared that "no one needs a gigabit."

Newsflash: When it comes to building networks for the future, what people need today isn't all that relevant.

Hockey great Wayne Gretzky famously said that what made him different as a player was that he was taught to "skate to where the puck is going, not where it has been." Broadband deployment is a lot like hockey.

CHANGING USAGE PATTERNS

Just like the fast pace of a hockey game, consumer demand for bandwidth is growing so quickly that it's impossible to engineer and build a network that meets today's requirements and will remain relevant tomorrow, except by over-engineering it. Nielsen's Law of Internet Bandwidth states that a high-end user's need for bandwidth grows by 50 percent per year: *The consumer who uses 100 megabits per second today will use 760 megabits in just five years.*

That might sound a little far-fetched, but Jakob Nielsen demonstrated that that growth rate held true from 1983 to 2019. When we consider people's changing usage patterns, there really isn't any reason to suspect that the rate won't hold.

Where does the ever-increasing demand for bandwidth come from? That, too, is changing over time. Traffic on the internet today is mostly video. According to Cisco, 82 percent of all internet traffic will be video by 2022. In 2011, that number was closer to 35 percent. Certainly, much of that video traffic is entertainment, with increasing numbers of customers leaving traditional pay TV models for streaming services and increasing amounts of programming available in HD and 4K online.

It's easy to be dismissive about entertainment – until you're the one missing the big game. Not all video is entertainment, however. Videoconferencing is widely used in business, telemedicine, government and education, and has

become an increasingly valuable tool for collaborating and working over great distances.

INTERNET-ENABLED DEVICES RAMP UP

Another source of increasing traffic is the growing number of internet-enabled devices in homes. Computers aside, the chances are that in the average family of four, every member older than 13 has at least one mobile device; some will have both a phone and a tablet. Each device requires a megabit per second even when not in use, because it still actively receives notifications and downloads updates.

Of course, today's homes don't stop at human-operated computing devices such as phones, tablets and PCs. They also feature internet-enabled security systems, connected thermostats, video surveillance systems and smart speakers such as Alexa and Google Home. Many homes have internet-connected medical devices, including medication dispensers, fall detectors, med-alert devices and CPAP machines. Others even have internet-connected refrigerators.

All these devices use data whenever they are turned on, whether users pay attention to them or not. It's very easy to add them for the extra convenience and sense of security without regard to the volume of information they collect and send to "the cloud" or, for that matter, how much bandwidth they use to do so.

Most people don't have a meter on their internet connections at home, so most don't understand how much bandwidth they really use or how much their usage changes over time. As challenging as it is, these are critical concepts for providers to get across when rallying support for a broadband plan. Without a basic understanding of how much needs are changing, it would be far too easy to take the easy path and build a network that is less costly today and mostly wasted tomorrow. ❖

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