TECHNICAL COLUMNS

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VOIP SERVICE CALLS

By RON HRANAC

It wasn't that long ago that voice over Internet protocol (VoIP) telephony on cable networks was just "a couple years away." Not so any more. The first large-scale commercial rollout occurred nearly three years ago, and a fair number of cable operators have successfully deployed VoIP since then. Others are involved in trials, and some are getting ready to launch.

How's it going?

I was curious about how VoIP deployments have impacted service calls, so I contacted a few folks and asked for information in this area. Naturally, some of the specifics such as the names of the companies involved, locations and actual numbers of service calls are confidential, but the data I can share are quite interesting.

For instance, the corporate-wide numbers from different cable companies were, for the most part, within a few percentage points of each other. In any given company, the actual percentages in each category tend to vary from market to market, depending on where each system is in its VoIP launch cycle.

Before continuing, it might be useful to define a VoIP-related service call: It's demand maintenance that results in a truck roll and includes voice quality problems, the inability to get a dial tone, dropped calls, certain calling features not working—that sort of thing.

Stats

OK, so how do VoIP-related service calls break down (no pun intended)?

About half fall into what I generically call "subscriber drop." This includes the usual exterior and interior coaxial drop cable problems, splitters, connectors, traps and filters. I've also lumped the cable modem/embedded multimedia terminal adapter (EMTA), in-home copper wiring (telco twisted-pair), phone jack and customer premises equipment (CPE) in my "drop" category. All of the operators with whom I spoke break these out separately, but the numbers were similar from company to company.

In other major categories, outside plant problems came in around the 7 percent to 9 percent range. Customer education varied from 2 percent to 8 percent, and no fault found 10 percent to 15 percent.

Collectively, the previously mentioned service call varieties account for just over three-quarters of all VoIP-related service calls. The remaining roughly one-quarter of VoIP service calls includes everything else: provisioning, router, IP backbone, the connection to the public switched telephone network (PSTN) or some gremlin in the PSTN itself, and so forth.

The drop

If we look at just my lumped-together drop category, it's clearly the largest. That really was no surprise. Heck, when I worked for a major MSO back in the 1980s, we tracked service calls in all of the company's systems.

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Lo and behold, half to three-quarters were drop-related. While the types of services we provide have changed a bunch in the last 20+ years, the majority of our demand maintenance still occurs at the customer premises.

One cable operator provided me with VoIP outage data rather than service call information. The data are for network outages affecting more than 100 voice customers. Unavoidable outages—from the perspective of the cable company—make up just over half of the outages. This category includes the all too familiar "backhoe fade," problems with the PSTN and product defects. The remaining network outages are what can be considered avoidable outages.

Here's an interesting side note to the data I collected. I spoke with an engineer at a system that has been providing circuit-switched voice for several years. The outside plant and drops are in pretty decent shape, and system personnel have a handle on installations and maintenance. During the first couple months after VoIP was launched, some two-thirds of the VoIP-related service calls were related to back-office problems with provisioning and getting features up and running. That has since settled down, but it shows that the back-office stuff is just as important as the outside plant and drops.

What to do

If you're a regular reader of this column, you know that I harp incessantly about the need to ensure the entire cable network—headend, distribution plant and subscriber drops—be DOCSIS-compliant, that the plant be maintained properly, and that drop quality be a top priority.

After reviewing the VoIP service call data, these recommendations are still appropriate. If anything, I'd put a bit more emphasis on the drop side of things, focusing on the need to use high-quality materials, make sure the installation staff is well-trained and equipped with the right tools and test equipment, and have a good quality control program in place. Qualifying the in-home telco wiring, phone jacks and such before activating a customer's VoIP service is especially critical.

I'm not sure what we can do about customer education. We've been dealing with that far longer than the 33+ years I've been in cable. Certainly our own personnel should be properly trained to train the customer, and we need to leave with our subs, instruction brochures for the products we place in the home and maybe also some general troubleshooting guides. This information should be available somewhere online, too.

Network outages

In the network outage arena, there probably isn't much we can do about the unavoidable outages. But we can take appropriate measures to reduce avoidable outages.

This includes paying attention to the distribution network architecture (number of homes passed per node, minimizing cascaded devices and components, etc.); use of uninterruptible power supply (UPS) and generator backup power in the headend and hubs, and standby power in the outside plant—all with suitable backup capacity; outside plant status monitoring in at least the nodes and power supplies; proactive system maintenance practices—preventive vs. corrective maintenance, forward and reverse sweep, leakage/ingress management, and nondisruptive maintenance. ("No one will notice if I quickly swap this amp's pad and equalizer.") We also need to take steps to reduce mean time to repair (MTTR) when outages do occur: trained personnel, proper test equipment, and service and maintenance vehicles stocked with spares and documentation are essential.

The bottom line

It's likely the categories of VoIP-related service calls and maybe even the relative percentages will remain unchanged as the number of cable telephony subs increases. But anything we can do to reduce the actual numbers of service calls and outages will go right to the bottom line in real dollars and customer good will.

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