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5 ways to improve UC voice quality

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I participated in a recent podcast with my fellow UCStrategies experts, discussing our thoughts and opinions about the growing degradation of overall voice quality that we are hearing from our enterprise customers who have migrated to VoIP solutions.

Many of the UCStrategies experts work in the carrier/manufacturer space and provided good insight and opinions from the provider's viewpoint. Others like myself work primarily with end users, provided opinions based on a different perspective, mainly revolved around the telephony systems areas.

What I found interesting listening to my peers, was their diverse viewpoints and perspectives based on their individual expertise, experience and understanding of technology, networking, contact center and UC solutions.

They discussed the usual suspect areas including bandwidth (or lack thereof), latency, crossing from TDM/PSTN networks to IP/SIP network, and the impact of traffic flowing back and forth across different topologies and protocols.

They did not comment on a few areas. I will focus this article on these areas, from a network/IT hands-on installation, design and troubleshooting background.

Believe it or not, I spent the first 12 years of my technology career physically installing wiring, data switches, statistical multiplexers and routers all over the world, before being pulled into the world of telecom…(that's a different story on convergence though!)

Reviewing my thoughts with the rest of the FOX team, we thought we would share with you the other areas of technology that we have identified as having the capability to effect voice, and now video, communications and why.

These comments are based on our real world experience working with VoIP clients across most vendors since 1997.

We call this our **VoIP A – E List.**

We put the items in order of priority so that if you could choose to pick only one or two areas, and then you will know which ones to work on first as a business. As we all know, IT budgets keep being squeezed and we never have enough money to go around for all the things we need and want to invest in.

A = Headsets, yes they make a big different

One of your most important technology investments should be business-class headsets (disregarding device you are presently communicating on). Most people use consumer grade headsets connected to their PC, tablet or smartphone or just depend on the built-in speaker and microphone. Even worse than that, they use separate consumer-grade low cost microphones and speakers to try to communicate using VoIP technologies on their PCs, smartphone or tablets.

Make sure that you provide business-class wired or wireless headsets that have echo cancellation, volume control and sound masking to ensure best sound quality for both the listener and the person speaking. As a quick aside, most of us prefer to use wired headsets internally at FOX GROUP and have found them significantly better performers, from our regular testing in our labs. (Plus, we don't have to worry about battery life, wireless health and safety concerns, etc.)

B = Family Area Network or "FAN" for short

More and more business professionals are working from their home, whether after hours, or 1-2 days per week. We are also seeing more and more contact center agents being moved to full-time teleworkers. Some organizations consider the home office to be their responsibility to design and support, while others take no responsibility for this technology environment.

As more and more organizations deploy UC-type collaboration applications including desktop sharing and video, the LAN bandwidth required increases dramatically for the corporate remote worker. If they are trying to work in a household where there are multiple computers, IP-based devices such as gaming systems, and now more and more IP-based entertainment such as Netflix, Crave, etc., this stresses not just the public Internet part of the network, but also the FAN within the family household.

A quick aside, the last two network performance audits we did had the FAN as the major pain point affecting remote workers. This area affects voice quality, response times and even device failures (due to lack of proper electrical protection for technology devices).

C = Network/Performance Management Tools and Processes

As mentioned above, many IT organizations only monitor and manage the voice and data traffic to and from their corporate locations. Most do not monitor and manage the various at-home or mobile devices that people use daily to do their jobs.

Many of you are thinking, “Are the FOX folks nuts? We can’t afford to do that!” or… “We don’t have the time or people to do that!” etc. We are here to say that yes you do.

There are simple practices that can be implemented to help check and monitor bandwidth and performance availability regularly. The first thing to do is to set up an icon on each PC to run one of the free network speed test applications. (One of the ones we use is http://activo.speedtest.net/). All of the speed test sites will calculate different Internet performance numbers, and that’s ok because the important information is any change in performance, based on the same tools calculations.

The suggested process is to have each person run the same network speed test at least once a month (around the same time each month) and enter the results in their calendars. This includes the latency (ping test), as well as download and upload speed in Mbps.

That way, if there is ever a problem, they can provide IT with accurate information about Internet performance trends over time.

Our guidance to business in this area is that if you are expecting people to work from home or another remote office, then IT should have the tools, technology skills and processes to install and support these end points to the same quality and concern that they do between corporate offices.

If you feel that your IT organization is not prepared or able to do this, then you should seriously reconsider whether your staff should be able to support remote locations as part of your business strategy. We also strongly recommend that senior leadership include providing sufficient investment for IT to develop the resources, skills, support and processes to provide effective technology support for remote and mobile workers.

D = PC Characteristics and Configurations

Most people do not consider the fact that the type of PC and its inner workings can make a difference and impact voice quality. This includes the CPU processor, amount of system memory, video memory, audio card quality and even the type of USB ports and their speeds. The more applications that are used at one time, that are processor and memory intensive, the more likely real time voice and video performance will be impacted. High-end equipment will be better able to maintain a high level of voice/video quality while running several applications at the same time.

E = Smart Phone/Tablet device Characteristics

Last, but certainly not least, is the smart phone or tablet mobile device. The same areas apply as above related to the PC CPU, memory and storage, with the obvious addition of the wireless coverage and quality (whether Wi-Fi or cellular).

As you load the IP VoIP or collaboration applications onto mobile devices, it becomes more important to have enterprise class, robust mobile devices AND good headsets to ensure the likelihood of high quality communications.

Obviously, you can't control the wireless carrier network availability since it depends on where you are, but you can improve the other areas that are in your control.

Summary

Next time you are complaining about VoIP quality, take a look at the areas above and work on improving them one at a time. VoIP technology is mature and can work reliably, and with excellent quality on properly designed and managed voice and data networks.

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