Management May Be The Most Important VOIP App Of All

Making IP-telephony work in real-world deployments will require better tools

Thisis my first effort in what will be a standing column here in *BCR* on the subject of VOIP and communications-enabled applications. As I sat down to write this piece, I was eager to dive right into discussing the application development process that needs to be in place for VOIP to show better returns for the business. But then, I caught myself jumping ahead too quickly.

Why? I was reminded of our survey work that showed that VOIP was widely, yet sparsely deployed in the enterprise. We found that 80 percent of enterprises have deployed VOIP, but only a meager 6 percent have done so throughout their enterprise.

It's fair to say that no one is betting the farm on VOIP, but the question is: Does that matter to anyone right now?

It certainly doesn't matter to the business end-users, because if there were demonstrable productivity benefits you would hear them screaming for VOIP just like they did for their BlackBerrys and WiFi access points. Nor is it IT, because frankly that group has not convinced itself that it can deliver high-quality, reliable voice services.

This lack of confidence is actually not a fair reflection of the technology. The VOIP solutions on the market today from Cisco, Avaya, etc. have been around for a number of years, are built on solid code and highly reliable architectures. Any network manager can verify this, because hands-on, in their own labs, they have seen this to be the case—it is just that real-world deployments are a whole different beast. Network managers need to know that the voice system will work not only today but tomorrow, a week from now, a month from now and so on. The quality and reliability need to be sustained in a dynamic environment where voice shares space with a perpetual stream of new bandwidth-hungry applications.

A Little Help, Please?

The problem is that the network managers aren't getting any legitimate help from the traditional management vendors and only a little help from the equipment vendors. The traditional management suite vendors, such as IBM, CA and HP stopped innovating years ago and are focused on delivering large framework systems that provide vanilla management. Most equipment vendors provide management tools for their own systems but not for multivendor environments, leaving most network managers without the tools that would give them the confidence to move forward aggressively.

This is typical for management software, though. Typically, the innovation in the management of "stuff" lags the "stuff" by a couple of years. Distributed computing management tools lagged the PC rollouts, network management (routers, switches, etc.) went through the same phase, and so will VOIP. It's just taken longer with VOIP than with other areas.

As was the case historically, start-ups exist to fill the innovation gap. Solid point solutions have been developed to deal with various aspects of the VOIP lifecycle. There are different tools for: assessing the network in the pre-deployment phase, configuration and change management, planning, call accounting and measuring a real-time mean opinion scoring (MOS, a standard developed by the ITU as a way of measuring call quality). Vendors out there include: Prognosis, Opsware, Clarus, Psytechnics, Voyence, Intelliden and Brix. These tools in aggregate provide a good start, but the reality is that they do not do enough.

Bottoms Up

In addition to being critical of the "suite" vendors on their lack of VOIP management, I have also been very vocal about the bottoms-up model they have of management: Bottoms-up in the sense that their orientation is on the infrastructure elements in their respective silos (just like VOIP), and on aggregating their information, instead of focusing on the business elements such as the IP endpoints (e.g. desktop, server, VOIP phone) and the applications they deliver and/or use.

If from their very basic view of the world, the aggregate infrastructure is running smoothly, then when a problem arises with application performance, they are going to be very inadequate in lending a hand. That is why many application performance issues just get ping-ponged around the different IT silos and end up persisting for days or weeks. I've lived in this environment in a previous life, and such long problem-solving timelines were not tolerable then; I don't see how they could be any more acceptable in a converged environment. I suppose it's what business has come to expect with "Internet"-based applications, but users will not be so patient with VOIP.

That is why management solutions have to be centered around the endpoints and their applications, where the focal point is thus appropriately

directed on the business and its productivity assets, and not on infrastructure. Top-down management is what we at Yankee Group call this business–oriented model. We've termed it "top down" because the management system should give a view of the endpoint devices and the applications which are the productivity tools of the business user and business services. Knowing details about these endpoints and applications, how they normally behave and when they are adversely affected is becoming mandatory information for identifying the complex problems that affect the VOIP silo, especially because the adverse effects can originate from anything leveraging the same infrastructure as the VOIP system.

Problems in the old telephony world were few and far between, so bottoms-up management was adequate. But now, take communication that used to run on a completely independent, highly available and static infrastructure and move it to a combined infrastructure that is much more dynamic, and the results will be fairly challenging.

Looking At The Endpoint

For example, what happens when a VOIP user calls you angrily from their cell phone, telling you that their VOIP connections were dropped three times in a minute (which is why they have to use their cell phone to call you)? Telling them that according to the latest MOS read-out everything is just fine with network quality is not going to make them feel they are getting good support. That's a perfect example of where bottoms-up management will break down: That MOS score is the infrastructure's perspective, not the end-users'.

How *should* things work in the VOIP world? A top-down approach will start by calling out all the component parts.

In a basic VOIP system there will be three types of endpoints: the IP phones, call managers and the IP voice mail system. And although we talk in terms of VOIP services, there are really a number of underlying "applications" including the call signaling, the RTP (Real Time Protocol) voice stream (i.e., the media stream), and voice mail. Understanding how these endpoints and applications normally interact with each other is essential for properly managing this infrastructure.

Let's take the example of the angry end user with their dropped VOIP calls. The top-down approach should have an understanding of the application experience of the VOIP phone and how it differed from its normal state at the exact time that the calls began to drop. Was the call fluctuating with bursty traffic streams? Did it just stop emitting packets? Was the communication interrupted on the way to the other phone?

Being able to answer these questions is a great start to help get at what was really going on at the time. The dropped calls, although clearly problematic from the end user's perspective, are actually just symptomatic of some core problem yet to be determined. And very likely that one VOIP endpoint is not alone in experiencing those issues.

As an example, one top-down management vendor, Xangati, has a concept of establishing profiles for all the endpoints so the management system precisely knows the differences between the normal and real-time so you can be alerted to all the symptoms that are occurring at a given moment. The system lets you see how the symptoms and the endpoints relate to each other, so you can get to the problem source. With the dropped call scenario, one can understand: Were all the endpoints the same phone type? Were they are on the same subnet? Did they share the same call manager? A likely scenario could have been isolating on a switch that was recently reconfigured with the QOS parameters set incorrectly. Without this top-down management model, it might very well have taken a day for the network operations team to get to the heart of the matter.

Start Weighing Management Tools Now

So I end where I began. New productivity-enhancing VOIP-enabled applications have to be a central focus for VOIP to be adopted enthusiastically by users. But even before that, IT has to get assistance in managing their modestly-sized deployments today. To do that, you should begin looking at the VOIP-specific as well as the general top-down management solutions.

As soon as you make those investments, I guarantee you will get a much better perspective on the day-to-day of activities within your VOIP installed base. The workaround today for a bad VOIP service is pretty easy, since everyone has a cell phone glued to their hands. But what is the back-up when those real-time applications are being used by hundreds of employees?□

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Most systems report from the infrastructure's perspective, instead of the end user's

Companies Mentioned In This Article

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Brix (www.brixnet.com)
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