Trading TDM for VoIP Peering

By Hunter Newby

Editor's Note: *The "VoIPeer Me" series follows in the footsteps of FAT PIPE's "Meet Me" series, which identified key carrier hotel interconnection points in North America and the Ethernet and VoIP network operators within them. This new series will demonstrate the marriage of Ethernet and VoIP through actual VoIP peering implementations of network operators within the carrier hotels. Our purpose is to show where VoIP peering currently exists, who provides it, who uses it and how.*

VoIP peering is rolling right along, growing and building momentum and awareness with each passing month. Many carriers have come to a clear understanding of the model for VoIP peering, as it is totally logical from a provisioning standpoint and actually a history lesson, as it is a reflection of past Internet service provider peering relationships for multi-lateral traffic. All the voice side of the house needs to do is bring in a couple of the ISP side peering managers to pick their brains a while, and then they will possess the basic foundation required to establish these types of relationships in an on-net voice world.

Well, it might not be that easy, but the pieces are there to be assembled.

On the enterprise side, things have been developing in certain areas at different speeds. Some organizations have a culture of IP and VoIP awareness built in, such as universities or telecom/IP hardware vendors. If these people don't know about the technology and how best to use it, no one does. This is why, to a large extent, they are leading the enterprise VoIP peering push. Others remain in suspended TDMation.

Since technically VoIP peering is possible, the biggest remaining issue is psychological. There are two paths you can go by over this psychological mountain, one network based and the other a simple matter of economics. In the end, you come to the same place. For those organizations with IP experience, the first path comes easy and leads to the second.

For almost every other business out there, it is a slower, individual process of searching, trial and error and hopefully a successful conclusion. Basically, the IT managers have to reinvent the VoIP "wheel" each time they attempt to peer even their own locations. This lack of visibility is being overcome by the distribution of the bread crumbs of knowledge through articles, presentations, whitepapers and new service offerings that help lead the willing, yet unaware, away from the dark side of the mountain.

On the economic side, though, there happens to be a particular business type that is quite familiar with on-net TDM voice calling and has been for well over 15 years. The steps into IP are easier for them to contemplate. Their model, both past and present, is a good example of what the future of enterprise VoIP peering may be.

These on-net voice pioneers are Trader Voice service providers to the financial traders of stocks, bonds, commodities and all things Wall Street and their "trading turrets." These turrets are master voice switchboards that connect one trading desk to every other trading desk – directly. This direct voice connection is established via a clear-channel TDM trunk that carries circuit-switched voice. Although the primary reason for this is to reduce latency, basically a trader pushes a button and the phone on the other end rings immediately, the side benefit to it is that the calls are not metered per-minute. There is no "phone bill" generated. These circuits are sometimes referred to as "Hoot and Holler," which is reminiscent of open pit trading where traders call-out their orders to each other. Much of this has been migrated to computers today, but human interaction is still necessary for many reasons.

KGM Circuit Solutions is in the trader voice business. The company builds voice networks from the hardware to the network for its clients to facilitate the best possible environment for calling between them. Clients include brokerages, banks, broker-dealers, asset managers and hedge funds. Since every millisecond counts when big financial transactions are on the line, KGM would not even have entertained this concept of VoIP peering unless it completely worked.

In addition to the original TDM-based trading platform KGM has begun using a SIP (session initiation protocol)-based service provided by VeriSign through its IP Connect

Suite service offering. It is essentially the same concept as before, on-net calls between various client turrets, but now with SIP redirects acting as the routing intelligence in the middle of the process. Now it is much easier for KGM to add, remove or change numbers, locations and routing details though a simple Web portal rather than having to reprogram each piece of hardware individually.

The turrets themselves are still TDM. This is one of the best kept secrets of VoIP peering that more people need to be aware of. VoIP handsets and IP private branch exchanges are not necessary to have and use VoIP. The turrets are wired into Cisco 7600s at the premises, and through a SIP proxy they query the SIP redirect server for the destination routing information. The signaling to the SIP server is via the public Internet, but the media path is private IP over clear channel TDM circuits. This is a very effective combination of the old and the new.

The economics on the calls themselves are as they were in the circuit-switched environment: free. The only costs are for the underlying transport and the SIP redirect service. In terms of resource costs, KGM invested a decent amount of time and effort getting the service up and running and now is quite happy with it. As a result KGM is not interested in looking at any other VoIP peering methods currently.

As Forrest Gurl, CEO of KGM Circuit Solutions states, "We have been in the Trader Voice business since 2002 and are pleased to now offer a VoIP-based private network flavor of service along with our traditional TDM-based voice private line services." This is truly enterprise peering, and the transition is one that many are looking to follow.

The reasons why enterprises are seeking these types of network architectures are numerous, but security, quality of service and reliability top the list. In the future, we will all see more implementations like this one in the financial services community as well as many others.

The exit ramp of the public switched telephone network has just been repaved. **FAT**

Hunter Newby is chief strategy officer of tel[x]*. If you know of a VoIP peering implementation and would like to suggest it for a future article, please email him at hnewby@telx.com.*

KGM Circuit Solutions VoIP Peering User Case Study

VoIP Peering User	
KGM Circuit Solutions	
Contact: Jim Roberts; jroberts@kgmckts.com	
Type of entity: Enterprise - Trader Voice	
VoIP Peering Service Provider	
VeriSign	
Sean Kent; skent@verisign.com	
Network Architecture and Model	
Does your company currently generate revenue from voice traffic?	No
Were you seeking to reduce monthly opex by reducing the cost of voice minutes?	No*
Is your current VoIP network all IP end to end?	No
Is your current VoIP network actually TDM call switching with an IP interface?	Yes
Bilateral VoIP Peering	
Are you using a bilateral VoIP peering service?	n/a
Does the service provider allow you to establish multiple direct bilateral relationships?	n/a
Is there a broker, counter-party or transaction fee associated with the minutes?	n/a
Do you send calls to only one VoIP service provider for termination?	n/a
Do you manage least cost routing of multiple VoIP service providers?	n/a
What is the percentage of savings achieved through this service? A=10-30%; B=30-60%; C=60%+	n/a
Multi-Lateral VoIP Peering	
Are you using a multi-lateral VoIP peering service (ENUM)?	No
Is the multi-lateral service easy to use?	Yes
Does the multi-lateral service eliminate the per-minute cost to terminate a call?	n/a
Was the motivation to use the service based on multi-lateral peering between your own sites?	No
Are there any fees for the use of the multi-lateral peering service?	Yes
Was the motivation to use the service based on multi-lateral peering between other VoIP networks?	Yes
If you are not currently using a multi-lateral (ENUM) service, do you plan to within the next 12-18 months?	No
Provisioning	
Do you interconnect to the VoIP peering service using Ethernet?	No
Do you interconnect to the VoIP peering service over the public Internet?	Yes
Were there savings realized moving from TDM to Ethernet for provisioning ports?	n/a
What is the percentage savings achieved through this service? A=10-30%; B=30-60%; C=60%+	n/a
Is the VoIP peering service providing protocol conversion (TDM-SIP, H.323-SIP)?	Yes
What is the savings from managed conversion services? A=10-30%; B=30-60%; C=60%+	B

* Already operating an on-net voice network