Peering Rises, Again

By Hunter Newby

Editor's Note: *The "VoIPeer Me" series demonstrates the marriage of Ethernet and VoIP through actual VoIP peering implementations of network operators within the carrier hotels. Its purpose is to show where VoIP peering currently exists, who provides it, who uses it and how.*

In the evolving world of VoIP peering, the past has returned again to become the present once more. As we have all seen many times before, the lessons learned through natural course in developing business models for the needs of societies and communities can be reapplied to current and future situations to produce near identical benefits and outcomes. It is a pattern, the cycle of life. The inception and constant maturity of VoIP has led straight to VoIP peering, as it is not immune from the cycle, and has produced an environment quite similar to the origins of IP peering itself.

Recently SunRocket, a voice over broadband service provider announced that it had joined the Voice Peering Fabric. Similar to most VoBBs SunRocket offers its customers a flat-rate service offering with unlimited call termination, and as a result the company is motivated to peer as many calls as possible to reduce their per-minute termination fees. Although on-net, "free" calls through the VPF ENUM (electronic numbering) Registry was an initial attraction, and will continue to grow and become more valuable over time, when it came to reducing operating expenses the real value of the VPF for SunRocket came through the ENUM model itself.

As Mark Fedor, chief technology officer of SunRocket, states, "Eliminating per-minute charges is part of the voice peering story, but the point is to simplify the accounting and cost structure of the accounting for voice. The cost of an OSS/BSS (operations/billing support systems) is immense."

Not having to meter, bill, track the calls, queries, minutes or other increments for billing purposes produces substantial savings for this new breed of service provider. Of course, this is not exactly what the legacy model voice carriers want, but since it can't be stopped, the best they can do is try to make sure changes do not happen too quickly.

The contention of the VoIP network operators and the traditional telephone companies is almost a mirror image of the rift between the first commercial ISPs (Internet service providers) and the regional Bell operating companies. Originally, the RBOCs wanted to charge per packet for data over their networks. They wanted to actually meter and bill users of the Internet on a per-packet basis. Just try to imagine what that would have done to the ability to create new applications and the rate of innovation. Glacial movement comes to mind.

Obviously, that never came to be, and what we have today is a direct result of an open, on-net, multi-lateral, "free" architecture and business model.

The period of time during the birth of the commercial, public Internet was very dynamic and possesses many lessons learned about the period we are living in right now. "In 1990 the Bells wanted to bill per packet, so PSINet, UUNet, Sprint and others created the Commercial Internet Exchange (CIX) in the San Francisco Bay Area to bypass the Bell attitude," says Fedor. The process was that the ISPs connected to the CIX router, and then they could send all of the packets they wanted between each other—for free. As Fedor points out, "The VPF model is so similar it is scary."

Fedor should know, he was the senior vice president of engineering at PSINet and was the first technical director of the CIX (which was the first commercial ISP peering point). His role included managing the CIX router, defining and enforcing the multi-lateral routing policies of the CIX and managing the installation of the physical connections to the CIX router for the CIX members.

As if that's not enough credibility, prior to joining PSINet in 1990, Fedor was a member of the technical staff at NYSERNet, where he co-authored the Internet standard simple network management protocol (SNMP). He also was a member of the networking group at the Cornell Theory Center, which developed and operated the first phase of the NSFNET backbone, and he designed and implemented "gated," the first multi-routing protocol process for the NSFNET backbone which is still embedded in many present day routers.

As chief technology officer of SunRocket, Fedor is charged with (amongst other things) determining the best path for the company to take in order to reach its network goals and objectives. This required him to analyze all available VoIP peering options to find the one that was right for them.

"Using VoIP peering is the first step to enabling our future plans," he says. "There are certainly savings achieved through bilateral VoIP Peering and managing our own least-cost routing, but we really want to leverage our IP end points to get more multi-lateral peering partners." For this reason the VPF ENUM Registry and its free exchange policy was the best route for SunRocket.

Through his analysis, one of the biggest challenges Fedor saw was the need for all of the various ENUM-supporting VoIP

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peering points to figure out how to interoperate. The issue here, though, is not in the interoperability on the technical side of the business, but rather the disparity of the economic models. How can one ENUM registry that assesses a fee per number lookup, or some other increment, peer with a registry that has no such fees?

There would certainly be an imbalance at some point, but at the baseline it would require systems and procedures to track calls in many ways and provide for reciprocal compensation, and that is counter to the original benefit of simplistic accounting.

"The problem is that everyone wants to become the new LERG (local exchange routing guide)" says Fedor. Currently, there is only one LERG, operated by Telcordia. Maybe that will

change and there will be more than one, or maybe there will be a complete shift.

In time, a new technology and radically different economic model may emerge moving the data function of calls over to a new type of routing guide. It seems that we are all in the midst of this now, so we'll see.

Using the past experiences of IP as our guide it's probably a safe bet to predict what the outcome will be. History is what it was, and logic doesn't change much over time. **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.

SunRocket VoIP Peering User Case Study

VoIP Peering User	
SunRocket, Inc.	
Contact: Mark S. Fedor, fedor@sunrocket.com	
Type of entity: Consumer VoIP service provider	
VoIP Peering Service Provider	
Stealth Communications	
Contact: Shrihari Pandit; spandit@stealth.net	
Network Architecture and Model	
Does your company currently generate revenue from voice traffic?	Yes*
Were you seeking to reduce monthly opex by reducing the cost of voice minutes?	Yes
Is your current VoIP network all IP end to end?	Yes
Is your current VoIP network actually TDM call switching with an IP interface?	No
Bilateral VoIP Peering	
Are you using a bilateral VoIP peering service?	Yes**
Does the service provider allow you to establish multiple direct bilateral relationships?	Yes
Is there a broker, counter-party or transaction fee associated with the minutes?	No
Do you send calls to only one VoIP service provider for termination?	No
Do you manage least cost routing of multiple VoIP service providers?	Yes
What is the percentage of savings achieved through this service? A=10-30%; B=30-60%; C=60%+	B
Multi-Lateral VoIP Peering	
Are you using a multi-lateral VoIP peering service (ENUM)?	Yes
Is the multi-lateral service easy to use?	Yes
Does the multi-lateral service eliminate the per-minute cost to terminate a call?	Yes
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?	No^
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?	n/a
Provisioning	
Do you interconnect to the VoIP peering service using Ethernet?	Yes
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)?	No
What is the savings from managed conversion services? A=10-30%; B=30-60%; C=60%+	n/a

* Amid other services but not a carrier per se
**Yes, currently they hand SIP calls off to Level 3, Global Crossing and others
^There is a fee to connect to the VPF but no specific fees for the ENUM VoIP peering function
^^Currently, but they are looking at moving toward a Layer 2 Ethernet connection
*^SunRocket was a pure play VoBB out of the box and never had TDM in their network, so there was never a migration

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