VoIPeer Me

By Hunter Newby

This new series will identify and feature two service provider groups and highlight their respective roles in the VoIP world. One group consists of companies that enable VoIP at the transport layer but don't have a VoIP service per se. The other group includes all VoIP service providers that actually switch calls.

The purpose of the series is to recognize those that are bringing VoIP to market, the different challenges they face and benefits they offer.

Convergence is a word that has been nebulous at best for most up until now and for many it probably still is. Maybe that's because "convergence" is really more a concept than it is a word. And it's easier to define a word without much explanation than it is a concept – especially in the technology industry. For those out there who haven't been able to substantiate what it means, here's the concept: the marriage of the old with the new.

In a broad sense that may sound nice, but it has a hint of something doomed for divorce. How can old and new in technology be combined in any meaningful and beneficial way?

As convergence relates to the voice business, perhaps it is better described as "the same old wine, only in a new bottle." Voice as VoIP is still a full-duplex conversation with someone at a distance greater than ear-shot. That's a helpful explanation for the high-level function, but what about the commercial aspect? Ah, the money. Where does it all go and who gets it?

In this case the wine that used to fetch a nice price in the market is now given away, and instead it is the bottle, or "the transport mechanism," that is charged for and generates the revenue. It seems that the divorcee in the new voice relationship will be known as the ex-business model.

Many forms of technology have evolved from all corners of this great planet to all conveniently fall into place at this one particular moment in evolution. The voice call of the PSTN (public switched telephone network) becomes the audio session of IP that is no longer billed per minute but rather by the megabit or "access port." This is multi-lateral VoIP peering and it is not only a clear definition of convergence but also the ever elusive concrete definition of a paradigm shift.

The "VoIPeer Me Series" also is an evolution in its own right. It began as the "Meet-Me Series" – a quest to establish the distinction between Internet exchanges and

XO VoIP Peering Case Study

VoIP Peering Service Provider	
The Voice Peering Fabric – Stealth Communications	
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%+	A
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?	No
Were there savings realized moving from TDM to Ethernet for provisioning ports?	Yes
What is the percentage savings achieved through this service? A=10-30%; B=30-60%; C=60%+	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

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Extreme Measures - Quantifying Markets & Demand

carrier hotels and then identify the key carrier hotels in North America. This went on for two years, and the end result was a (useful) reference list to the right places to go to get connected to major domestic and international transport and voice networks. In the third year a transition was made to focus on identifying and highlighting two specific and important service provider types within these key sites, Ethernet transport and VoIP service providers. The purpose was to show, by example, that these new protocols on the block were, in fact, the future.

Now we're onto year number four. So let's marry the Ethernet transport providers' services with VoIP network functions and take an inside look in to why certain carriers, enterprises and universities chose to go the VoIP peering route.

The first up on this tour is XO Communications, which has VoIP services offerings for residential, small and mid-sized business, enterprise and carrier customers including origination (direct inward dialing), termination and 8xx (toll free). XO is involved in many networking business lines aside from VoIP including transport (time division multiplex and Ethernet) and public IP transit. XO is using the Voice Peering Fabric (VPF) for both bilateral and multi-lateral VoIP peering. It's a company with more than a billion dollars in annual revenue, so what would motivate them to get into VoIP peering through the VPF?

For one, bilateral VoIP peering in an open exchange drives revenues. In addition, the bilateral VoIP peering community of the VPF also reduces provisioning times, which saves labor costs and decreases time-to-revenue for XO. So motivations would include saving money, making money and making it sooner rather than later.

The ability to establish VoIP connections in a distributed, private and secure non-public Internet environment is very strategic for wholesale carrier sales. XO is also moving ahead with multi-lateral ENUM (telephone number mapping) VoIP peering. This will help the carrier drive on-net calling between itself and other networks and over time significantly reduce their operating expenses.

Bilaterals in the carrier voice business have been around forever. TDM bilaterals are set up using SONET/SDH point-to-point circuits for the carrying of circuit-switched calls. IP bilaterals are set up in a similar fashion to carry IP calls and may in fact use the Internet as the calling medium. The VPF is a community with dedicated connections to it by its users, as well as a set of rules.

In the highly competitive environment of the voice termination business, network-based bilateral VoIP peering is an advantage. It eliminates the need to figure out how you'll get connected to customers and partners. This is particularly beneficial for initial relationships where the traffic volumes may be low. In many cases it is difficult to

justify dedicating a port on a router or gateway for a small customer. It also is just as challenging to dedicate the transport capacity for minimal revenues under a "trial" scenario. Through the VPF this is made easy as it is a simple virtual local area network to the other members' port. This also makes it easy to maintain smaller customers on a going forward basis where low volumes and margins might jeopardize the relationship.

"In what most closely resembles ISP (Internet service provider) peering, which is a free exchange of traffic, the VPF provides multi-lateral VoIP peering through the VPF ENUM Registry which is a free exchange of calls" states Don MacNeil vice president of carrier services for XO. Through one connection to the VPF, multiple customers can be serviced and in multiple markets. This is the "Fabric" aspect of the VPF.

MacNeil adds, "As we see our traffic grow between partners over the VPF, it may justify a dedicated Ethernet connection directly to them. This is also similar to the evolution of ISP peers." The VPF does not broker or earn any commissions on the minutes between XO and its partners, keeping overall costs for the carrier low. The savings XO creates from bilateral VoIP peering and also the migration from TDM to Ethernet ports helps to build the business case to use the VPF. From that point on, the savings continue to grow with the use of services such as ENUM.

Bilaterals in the TDM world are very much the same in the IP world from a commercial standpoint, as there is a buyer and a seller and payments, but in this case it is the transport mechanism or the "Fabric" of the VPF that is the "new bottle" per se. This mechanism eliminates distance and disparity and allows many pieces to easily function as a whole. The number mapping aspect of the VPF, which is the VPF ENUM Registry, takes that homogeny one step further and enables operators that manage the actual end points on the network to centralize "look-ups" of end points on other operators' networks. This is a function that cannot be performed by any one network operator alone. Having not only a common registry for look-ups but also a private network to carry the calls from end to end, makes the VPF unique in the field of VoIP peering service providers.

XO is a very good example of a carrier using a VoIP peering service. As the series evolves there will be other network operator types, as well as other VoIP peering services profiled. This will help bring in to perspective much of what is going on in the world of VoIP peering. If you are a network operator (including enterprise VoIP networks) using a VoIP peering service and would like to share your experiences, or just have a question, please email me at hnewby@telx.com. **FAT**

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