

Peering Misconceptions Still Pervasive

By Hunter Newby

VoIP Peering research has come a long way. Well, it has come as far as having industry research papers being published on the topic by third party resources. This is much better and a good distance from where it all began just a few years ago. Some of the research coming out on the topic is actually quite good.

Take for example this excerpt from the recent *VoIP Services Insider* report from *Light Reading*. Although what they really meant to say was “Principle Benefits of VoIP Peering” the content is good. Each of these benefits and the order they are presented in are particularly interesting. As most analysis is done primarily based upon whether or not something will save the user money it first and foremost has to work. Savings trumps quality in the ranking only because that is what usually starts the conversation with the decision maker, but if it doesn’t work then so what?

Looking deeper though, we can see that the report assumes that “peering” implies free calls therefore improving service

provider margins. Well, of course if you don’t have to pay for it then your margins should get better, but the reality is that IP is a protocol and really exists in the voice world to help improve various aspects of provisioning. IP itself doesn’t have anything to do with the business side of the cost to terminate. Even if a call is VoIP peered it doesn’t mean that there won’t be a PSTN termination on the other side, or that it will be free.

In the quality department there is no doubt that the experience is improved by not having to do translations between one protocol (or even network) to the next. What is probably more important here is how this move to IP is tied to new service creation. The reason why that is important is that it creates new revenue opportunities for the providers that they just can’t get on the PSTN. But the wonderful benefits of the future do not really mean anything to anyone until someone else “has to have it” and the providers see the easy business case and then go out and do the work. This process has come

Principal Benefits of IP Peering

Benefit	Why It's Valuable	Example of How it's Utilized
Capex and opex savings	Increases service provider margins; eliminates PSTN termination and transit costs; removes middlemen because no PSTN is used.	Competitive local exchange carriers (CLECs) may have only a handful of providers, as least-cost routing stacks are difficult to set up; it's much easier for them to route a wide array of service providers through a peering community, not just regionally but globally.
Improved Quality	Eliminates unnecessary IP-to-TDM-to-IP translations; some calls are all-IP, further improving quality.	Service providers' ultimate goal is to have a pure-IP call form end to end for optimal call quality; if the call goes into the PSTN, it can be converted to VOIP, then TDM, then back to VoIP, sometimes several times, with every conversion diminishing quality.
New and improved interconnections	Service providers aren't bound physically or by costly trunk groups; extends service reach securely and quickly in terms of new subscribers and geographic scope; gives virtual access to new and different carriers.	A CLEC that previously might only have had agreements with a few carriers can afford to establish relationships with unlimited numbers of service providers via an IP network, thus expanding its services to more users and across the globe.
Service creation	Enables new services and applications that require end-to-end IP connectivity, accelerates time to market for new services.	A pure IP network enables service that the PSTN cannot support, such as interactive video, gaming and multimedia collaboration.
Security	Enables service providers to monitor calls and make traffic-routing decisions; QoS is maintained in the network through features inherently designed at various interconnect points and by service providers.	Service providers decide how, when, where and with whom they want to interconnect, managing traffic-routing parameters within their own networks.

Source: *Light Reading's VoIP Service Insider*

Access and transport, wired and wireless

a long way in the last few years and is speeding up every quarter. By next year there will be IP-based visual search and digital watermark functions on mobile phones that no one could have imagined one year ago.

A vast misconception that is pervasive in all aspects and manners of information about this topic is that IP and the Internet are synonymous, which they are not! New and improved connections are most definitely possible through the use of IP, but there isn't much one can do to get away from the physical nature of the need for an actual network connection at some point. The utilization data in the chart below infers that the CLEC couldn't afford multiple network connections in the PSTN world.

Presumably because they are costly and it doesn't make much sense to have circuits nailed up to other carriers if you're not passing much traffic on them. The example goes on to assume that an IP network is the Internet and that unlimited numbers of other networks can be connected in this environment around the globe. This logic only makes sense if in fact the calls are over the Internet. Although many carriers use the Internet for passing traffic that is not exactly what they are all doing with IP.

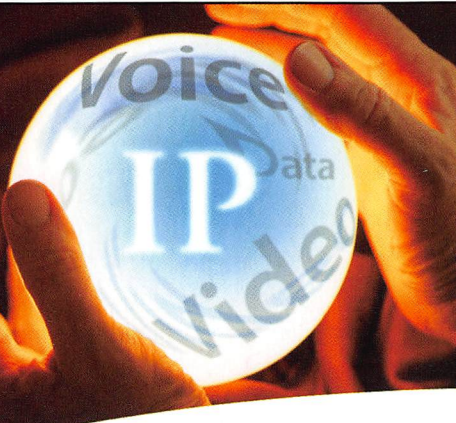
Adding new and fast provisioning interconnections can also be opening Pandora's Box a little bit. Many of the backend systems for traditional TDM carriers are only capable of holding

so many records and accounts. Introducing the ability of having an unlimited number of potential peers is great, but only if the billing and accounting systems can scale to handle it. Not that there is anything wrong with it, but preparation is required.

Finally, VoIP security can also be a tricky topic, but it seems to be addressed properly in this report. The benefits of IP shine through with the ability to create and maintain QoS whereas that is not the case in the PSTN-IP world. The interconnect points are key. A certain level of QoS can be held through the Internet, but for true QoS to be controlled an IP network (not the Internet) is the best way to transport IP. Beyond that the example states that the providers decide how, when, where and with whom they connect. Understanding this is a must. The common misunderstanding is that if a carrier wants to peer its VoIP traffic it HAS TO peer with everyone on the Internet, or every service provider that is a member of a particular VoIP peering service. That is silly and inaccurate, of course.

Using IP is about service, control, quality and cost management. There is much to be done with IP in many applications on and off of the Internet and it has all really just begun. This is probably one of the main reasons why there is so much misinformation, but over time that will all get worked out. **FAT**

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