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VoIPeering

INTERNET TELEPHONY

Nature and Networks

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PTC 2007 Conference in Hawaii has just ended and as usual it delivered a great learning experience about the laws of networks. The learning takes place in both a classroom style setting and in business suites all throughout the Hilton Hawaiian Village Resort. Various aspects of the networking world are analyzed and discussed ranging from how the networks are built and operated to how they are maximized and priced. One thing is very clear, not all networks are carrier networks in the business of selling services. There are many other types of networks with different economic models. The one common bond that they all share though is the need to be physically connected somewhere to each other.

The PTC is a tremendous event supported by a great organization with a history of being a proponent for change. The theme for PTC 2007 was "Beyond Telecom" and as Ken Zita, PTC Conference Chairman and Board of Governors Member put it, "The theme was spot on". It has been said that the only constant is change. Telecom as we all know it can now be referred to as telecom as we knew it.

The change was crystallized in the types of attendees that were present this year, including major search engines that have certain video interests and others from the once film industry now going through its own digital transformation. The "networks" carry much more than voice, or Internet traffic. It's not only telecom, but "everycom". All types of traffic are riding over various types of media with distances great and small, and the importance of underlying fiber and/or wireless networks has become very clear.

Because of a December 26, 2006 earthquake resulting in the failure of nine undersea cable systems off the coast of Taiwan, the importance of the underlying fiber and transport networks could not have been made any clearer. The cable outages were not primary topics of discussion at the conference since they happened only a few short weeks prior to the event and could not have been scheduled, but there was certainly talk of the situation in the halls and sitting areas of the Hilton Resort. The disruption of

voice, VoIP and all sorts of IP applications caused instant packet rerouting and congestion and started a massive physical layer repair project for almost every major undersea cable operator in the region.

On the switched and routed side of IP the Any2 Exchange at 1 Wilshire Blvd. in Los Angeles experienced a tremendous spike in traffic immediately after the earthquake hit. As IP traffic looked for anyway around the cuts network operators had many inherently planned protection schemes go in to effect. The Any2 and several of its 84 members were able to use this peering point as a means to keep the applications up and networks running. As John Savageau, Managing Director CRG West said, “About 20% of the traffic on the exchange right now is VoIP and we saw a major increase in all traffic in a matter of 4 seconds.”

Common Peering points with established connections are the key to seamless rerouting of course, but in every instance it is the physical layer that that comes first. Since many of the undersea cables were physically cut, or their network equipment damaged, what was required was a physical restoration plan of action to go in to effect. This did not happen as quickly as everyone would have liked. It seems that due to the lack of a defined, common, physical layer of interconnection points with a network critical mass representing those major cable systems, a manual restoration was not possible. Since the proximity that network meet points bring was not available or even in existence, there was no plan to immediately deal with this outage.

Even if there were a plan, it’s not an easy task to execute, given that so many routing calculations need to be determined manually versus through the routing intelligence of software. That said, having fiber panels with cables terminated to them leading back to each of the wet and dry transport networks in and out of a region, along with a whole lot of fiber jumper cables, can help solve the problem. Having a lot of available capacity to quickly throw at an outage like this helps.

Getting to the point where there are defined, common meet points throughout the affected region will take a long time. It is a major construction and collaboration project that requires capital, and cooperation from network operators and governments. The political aspect will probably take the longest to sort out, but given the fallout from this disruption, the path to physical restoration preparedness may be on a fast track.

The Taiwan cable cuts and those parties they affected go well beyond telecom and into the realms of finance, education and commerce in general, and should be the impetus for a change in the way things have been built and operated in the region in the past. We would all be well advised to look at this example of a natural disaster and envision what a restoration project would look like on this scale around other parts of the world. History repeats itself, so learning from the past is the best way to prepare for the future.

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