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One little footnote from Netflix CEO sparks a peering debate

By Scott M. Fulton III

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So little is generally understood about the foundational mechanisms of the Internet that, when one of its leading practitioners speaks the truth about it in public, it sounds like an alien language. Last Thursday, Netflix CEO Reed Hastings masterfully dropped a slow-fuse bomb into the net neutrality discussion, which among too many "netizens" had been a debate over the rights of bits.

The bomb came in the form of a footnote--literally a double-asterisked, small print half-sentence at the bottom of a post to Hastings' corporate blog. Taken out of context, it could be (and probably was, more than once) interpreted as a threat. In its entirety, the footnote read, "in other words, moving to peer-to-peer content delivery."

In context, Hastings was referring to this: Last month, Comcast announced it had reached an undisclosed peering agreement with Netflix, the order of which Hastings describes not as a partnership but instead an "arbitrary tax." Netflix commands a huge chunk of downstream Internet traffic, and emboldened by a federal judge's decision halting the FCC from enforcing net neutrality regulations, Comcast charged Netflix a fee for direct interconnection with its Tier 2 network.

But as things stand today, Comcast does not pay consumer data storage services like Box, or cloud service providers like Amazon or Rackspace, for bits sent upstream. And, as Hastings noted, ISPs have historically maintained no-fee peering arrangements between each other, under the theory that if they actually did charge for carrying each other's traffic, those charges would all wash out anyway.

So theoretically, by that same logic, Hastings posits, if Netflix were to use a P2P transit method to deliver its service--doubling its traffic, but actually balancing its load on the network--its charges should also be a wash, as should any service that produces as much upstream traffic as downstream. Hastings goes on to write, "That's because the ISP argument isn't sensible. Big ISPs aren't paying money to services like online backup that generate more upstream than downstream traffic. Data direction, in other words, has nothing to do with costs."

Certainly Netflix' costs do appear to have something to do with data throughput. A check of the service's live chart of throughput from major ISPs shows the overall speed decline--which had been noted in a *Wall Street Journal* article earlier this year--bounced right back up the other direction in February 2014, for Comcast as well as several other major ISPs.

In 2008, Cato Institute scholar Timothy Lee presented a respectable explanation of how settlement-free peering works (.pdf), in the course of an argument that extensive Internet regulation from the FCC or anyone else isn't necessary. Lee reasoned that, because traffic from multiple sources tends to balance itself out through some unidentifiable phenomenon, the market is capable of righting itself. Lee wrote:

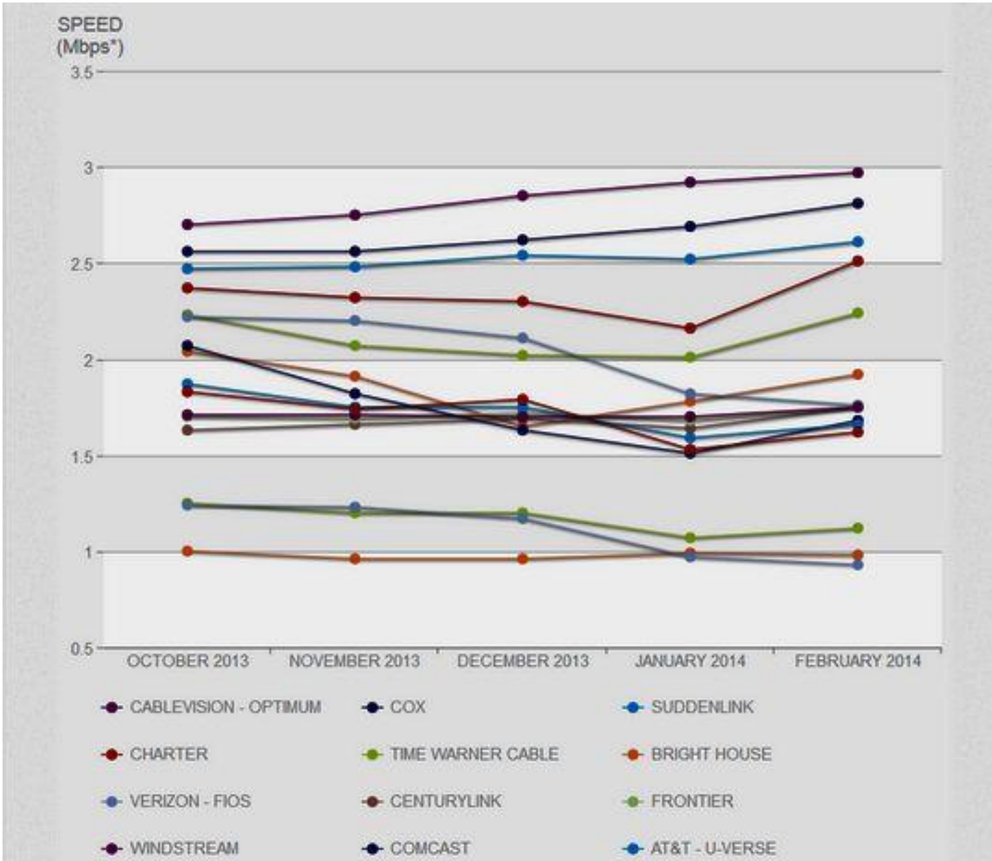
"If one network is significantly larger than the other, the smaller network will typically pay the larger network for connectivity, an arrangement known as 'transit.' If two networks are roughly equal, they will typically carry each other's traffic without charge, an arrangement known as 'settlement-free peering.' Because these agreements are negotiated in the context of a competitive market, they tend to reflect the full cost to each network of carrying the other's traffic.

The price that an Internet firm like Google pays for bandwidth includes the costs of securing 'upstream' connectivity to other networks. The costs of delivering traffic to a 'last mile' broadband provider like Comcast or Verizon is implicitly included in the price Google pays for connectivity... Network owners do not receive direct payments from all of the parties whose data they carry, but the network of consensual interconnection agreements that binds the Internet together ensures that each Internet user pays a fair share of the total costs of running the network."

In November 2008, Steve Schultze, associate director of Princeton University's Center for Information Technology Policy, delivered a detailed counter-argument to Lee, suggesting that major carriers would not need to block certain services outright if they wanted to effectively divide the Internet into tiers. Wrote Schultze:

"Discrimination won't look like that. It will come in the form of improving video services for providers who pay. It will come in the form of slightly lower quality Skyping which feels ever worse as compared to CarrierCrystalClearIP. It will come in the form of [Insert New Application] that I never find out about because it couldn't function on the non-toll Internet and the innovators couldn't pay up or were seen as competitors."

Schultze's warning appears to be precisely how this story is playing out. While one side portrays Netflix as the unfair bandwidth hog, the other plays Comcast as the carrier holding all the cards. But what's clear is that, while these are two giants in their field, their inequality is preventing their impact on the overall network from washing out in the end.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