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VIA ELECTRONIC FILING

RE: Applications of Comcast Corporation and Time Warner Cable Inc. for Consent to Assign or Transfer Control of Licenses and Applications (Docket 14-57); Protecting and Promoting the Open Internet (Docket 14-28)

Marlene H. Dortch, Secretary
Federal Communications Commission
445 Twelfth Street, S.W.
Washington, DC 20544

Dear Ms. Dortch and Commissioners:

I am writing to provide clarity on how Internet interconnection (peering) functions, as relates to the Commission's ongoing interest in both net neutrality and the pending Comcast-Time Warner Cable merger.

An ongoing theme in Comcast's filings with the FCC is that there exists a competitive marketplace where content and hosting providers, such as our company and its colleagues, can terminate Internet Protocol traffic onto Comcast's network. According to Comcast, if a company like ours does not wish to do business with Comcast (for example, due to unattractive commercial terms or technical configuration), it can go to any of Comcast's (40) Settlement-Free Interconnection partners and purchase reliable, uncongested, access to Comcast's network. Unfortunately, this is simply not true, nor is there any data in the public domain supportive of such claims.

Comcast's engineering declaration¹ states that "[a]ny content provider can reach Comcast's network through multiple routes without having a direct business relationship (paid or otherwise) with Comcast, and those routes have significant available capacity today for any provider's traffic" This has not been my

¹ Comcast engineering declaration by Kevin McElearney, SVP of Network Engineering:
<http://corporate.comcast.com/images/2014-09-23-REDACTED-Comcast-TWC-Opposition-and-Response-Exhibit-4-McElearney.pdf>

professional experience, as detailed in prior blog posts²³ and FCC filings⁴. Engineering even a modestly sized network for reachability to Comcast has been a constant engineering challenge, ever since Comcast's entry to the market as a broadband access provider, with Comcast neglecting to upgrade its edge network connections for many quarters or years at a time. I've even observed a network connected to approximately a dozen upstream transit providers -- far exceeding industry best-practices for redundancy -- with no available capacity into Comcast at peak hours. Though we have seen some relief stemming from Netflix's famous interconnection agreement with Comcast earlier in the year, Comcast's historical precedence offers no assurance the congestion will not re-occur following organic Internet traffic growth, or the introduction of the next "killer app" which Comcast might perceive as a threat to his business lines. In fact, the declaration's author, Mr. McElearney, has repeatedly refused to provide comment or identify these competitive "routes" (providers), when queried by colleagues on an engineering mailing list⁵.

Prof. Dovrolis cautions in his declaration⁶ that he "know[s] only the details the involved parties have revealed". While his points are well-articulated, they should be taken at face value as academic pontification, and not a reflection of market realities or engineering practices. This is no fault of the author, though one must question why Comcast submitted his writings as a factual "declaration"; peering is a highly dynamic and specialized subset of large-scale Internet engineering, and one which is only possible to keep up with as an actual industry participant.

Whether or not the FCC decides to regulate Internet access through its "Title II" authority, there are various options within its administrative purview, e.g. as post-merger conditions, which would ensure that Comcast acts in the public interest in its dealings with the greater Internet ecosystem. It is important to consider that, with the exception of certain providers, such as Comcast, Time Warner Cable, AT&T, and Verizon, who are able leverage their market positions in an anticompetitive manner through their interconnection policy, Internet interconnection is able to function effectively without onerous regulation. I have, at past employers, negotiated many hundreds of peering agreements between content and access networks predicated on mutual benefit, where no money passed hands; it would stand to reason, given the scale of Comcast's infrastructure and customer base, the company would be able to leverage similar or greater benefit through similar interconnection policy.

² Internap (f/k/a Voxel) blog post titled "Peering disputes: Comcast, Level 3 and You":

<http://www.internap.com/2010/12/02/peering-disputes-comcast-level-3-and-you/>

³ Internap blog post titled "Despite Comcast-Netflix deal, settlement-free peering is alive and well":

<http://www.internap.com/2014/03/07/despite-comcast-netflix-deal-settlement-free-peering-alive-well/>

⁴ Filing by Voxel dot Net on Comcast and Tata: <http://apps.fcc.gov/ecfs/document/view?id=7021025553>

⁵ Postings to the North American Network Operators' Group (NANOG) mailing list:

<http://seclists.org/nanog/2012/Jan/1162>; <http://seclists.org/nanog/2014/Jul/718>;

<http://seclists.org/nanog/2014/Jul/894>; <http://mailman.nanog.org/pipermail/nanog/2013-March/056685.html>;

<http://mailman.nanog.org/pipermail/nanog/2011-September/039864.html>

⁶ Comcast declaration by Prof. Constantine Dovrolis:

<http://corporate.comcast.com/images/2014-09-23-REDACTED-Comcast-TWC-Opposition-and-Response-Exhibit-5-Dovrolis.pdf>

We therefore ask that the Commission compel Comcast to:

- 1) maintain adequate capacity to any third-party transit providers with which Comcast has a customer relationship, such as Tata Communications, and upgrade these connections in a timely manner as they approach saturation;
- 2) maintain adequate capacity to any third-party Settlement-Free Interconnection (SFI) partners with which Comcast has a relationship, and upgrade these connections in a timely manner as they approach saturation;
- 3) revise its peering policy⁷ to recognize “bit miles”⁸ as a metric for determining equitable exchange of traffic between its network and other networks, as an alternative to traffic ratios;
- 4) continue to evaluate and activate new networks (ASNs) as its settlement-free peering partners

As you are aware, Comcast currently seeks approval to merge with Time Warner Cable, thereby gaining a considerable amount of broadband customers -- broadband customers which will become increasingly difficult for companies like ours to reach, given the combined entity’s increased market power. Only when strong post-merger conditions like the above are enforced, can we truly accept a Comcast-Time Warner Cable merger as being in the public interest.

Additionally, we ask that the Commission release non-redacted copy of Mr. McElearney’s declarations, along with Comcast’s submissions of peering-related data⁹. Both documents provide needed clarity on the highly opaque subject of Internet interconnection, and Comcast’s practices therein; they are essential for allowing the larger engineering community to provide meaningful feedback and recommendations through the FCC comment process. The situation is further blurred by a clause in Comcast’s standard contract for paid peering, which expressly prohibits customers from disclosing terms to government agencies such as the FCC. As there is no competitive market for access to the Comcast network and its broadband customers, one should not expect there is any “competitive” data in these documents in need of protection.

I thank you for your time and consideration, and welcome the opportunity for any follow-up.

Respectfully submitted,

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⁷ Comcast Settlement-Free Interconnection (SFI) Policy, published at <http://www.comcast.com/peering/>

⁸ Proposal by Level 3 Communications for a “bit mile” peering framework:
<http://apps.fcc.gov/ecfs/document/view?id=7021703819>; <http://apps.fcc.gov/ecfs/document/view?id=7021703818>

⁹ Comcast submission (redacted):
<http://corporate.comcast.com/images/response-to-fcc-data-request-sept-11-2014.pdf>