

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554**

In the Matters of:)	
)	
Petition of Free Press et al. for Declaratory)	
Ruling that Degrading an Internet)	
Application Violates the FCC's Internet)	
Policy Statement and Does Not Meet an)	
Exception for "Reasonable Network)	WC Docket No. 07-52
Management")	WC Docket No. 08-7
)	
Vuze, Inc. Petition to Establish Rules)	
Governing Network Management Practices)	
by Broadband Network Operators)	
)	
Broadband Industry Practices)	

COMMENTS OF ROBERT M. TOPOLSKI

February 25, 2008

Robert M. Topolski
*As a private individual and
customer of Comcast Corporation*
2345 SE 55th Avenue
Hillsboro, Oregon 97123-8145
(503) 407-4499
robb@funchords.com

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554**

_____)	
In the Matters of:)	
)	
Petition of Free Press et al. for Declaratory)	
Ruling that Degrading an Internet)	
Application Violates the FCC's Internet)	
Policy Statement and Does Not Meet an)	
Exception for "Reasonable Network)	WC Docket No. 07-52
Management")	WC Docket No. 08-7
)	
Vuze, Inc. Petition to Establish Rules)	
Governing Network Management Practices)	
by Broadband Network Operators)	
)	
Broadband Industry Practices)	
_____)	

COMMENTS OF ROBERT M. TOPOLSKI

I am a customer of Comcast Corporation, subscribing to both their High-Speed Internet service as well as a mid-level television package. I am one of the Comcast customers whose testimony appears attached on the original Free Press petition as I directly observed, researched, and documented the Comcast interference with Peer-to-Peer (P2P) File-Sharing protocols.

During the *En-Banc* Hearing of February 25, 2008, I was monitoring the proceedings from home. In the final 15 minutes of the meeting, I overheard a commissioner (unidentified male voice) criticize that the petitioners failed to document the condition of the Comcast network at the time the interference was occurring. I am assuming that the commissioner's concern is that this information would be helpful in deciding whether or not the timing of the interference was reasonable. I am responding to that particular question on my own behalf based on my own experience: Comcast

continuously interferes with P2P uploads, regardless of network congestion, personal usage patterns, or time of the day or week.

I first discovered this interference for myself while trying to offer a rare cache of Tin-Pan-Alley-era “Wax Cylinder” recordings and other related musical memorabilia (all of which I was authorized to distribute). I was using the P2P application known as Shareaza, which operates simultaneously on the Gnutella and eDonkey networks.

At the time of late-winter 2007, I noted on the now-defunct Shareaza web forum that nobody was appearing in the queue serving users of the Gnutella protocol. I was getting much more interest in my files from the the eDonkey users. This behavior was odd for several reasons, chief among them being that some of the peers uploading on eDonkey were Shareaza clients, which programmatically should have preferred my shorter Gnutella queue over my eDonkey queue.

After some investigation, I concluded that Comcast was interfering with uploads from involving multiple P2P applications and protocols, and I posted my initial findings publically on May 12, 2007.¹

In that posting, I noted certain facts that I had ascertained by my own observations, as well as certain facts that I obtained from the promotional material provided by Sandvine Corporation, a Canadian company who I had determined manufactured the gear that Comcast is using. That posting became my repository of tests and findings, and occasionally adjustments to my initial assumptions.

During my numerous tests, I found statistically no deviation from the amount of interference being applied per protocol. Each test, regardless of the time of the day or night, regardless of the day of the week, and the presumable differences in network

¹ <http://www.dslreports.com/forum/r18323368-Comcast-is-using-Sandvine-to-manage-P2P-Connections>

congestion between prime and non-prime hours of use, the level of interference applied against each protocol was approximately equal:

Remember first that all (100%) of my Gnutella upload requests were thwarted. As you can read in that thread, you'll find that approximately 40% of all BitTorrent established upload connections were reset. This I documented in my initial post.

I also included statistics from eMule², which is currently the reference client for accessing the eDonkey network. My tests consistently showed about a 75% upload failure rate³ that further investigation demonstrated were caused by numerous unexpected TCP "RST" (reset/abort) packets that only appeared when connected to Comcast.

As the attention grew, and the Comcast denials appeared, I repeated these tests from time to time and always got the same result. During this entire period, I have been unemployed due to an illness. While it has slowed my testing and investigating, it has given me the unique ability to run my tests at different hours of different days.

The latest assertions by Comcast say that the company only applies these methods during periods of heavy congestion in a particular neighborhood. For their latest statements to match my observations, my neighborhood would have to be under the same amount of congestion for 24 hours a day, 7 days a week, 365 day a year.

I have been interested in network protocols since childhood. Throughout school and my first career in law enforcement, I have been a technologist and an Advanced-Class Amateur Radio licensee. After leaving law enforcement 15 years ago, I have made Software Quality Assurance and Testing my career, with focus on networking clients, servers, protocols, and Software processes. I served on the Southern California Digital

² <http://www.emule-project.net/>

³ <http://www.dslreports.com/forum/r18926539-Comcast-P2P-Mgmt-Wireshark-eMule-Example>

Communications Committee, one of the FCC's recognized Amateur Radio coordinating bodies for digital Amateur Radio Service. Although my interest in Comcast is from my own perspective as a customer, I am qualified and have conducted my tests using reasonable precautions to ensure the quality and reliability of my findings.

IN SUMMARY, the condition of Comcast's network during the times when Comcast interferes with P2P uploads is unknown and unavailable to corporate outsiders, but it seems to be irrelevant. Over the course of 9 months, I found that Comcast always interfered with P2P uploads to the same degree. There has been one exception to this unbroken trend, and that occurred late last week at a test conducted at 1:15 a.m. local time on Saturday morning interference with both eDonkey and Gnutella has stopped. Interference with BitTorrent jumped from 40% to 70%⁴. I matched my observations with another colleague in San Francisco. While I have posted about this latest change, I have not attempted to repeat the tests to determine if the new observations represent a long-term change and an increased attack on the BitTorrent protocol, alone.

Respectfully Submitted,

/s/ Robert M. Topolski

Robert M. Topolski
*As a private individual and
customer of Comcast Corporation*
2345 SE 55th Avenue
Hillsboro, Oregon 97123-8145
(503) 407-4499
robb@funchords.com

February 25, 2008

⁴ <http://www.dslreports.com/forum/r20055371-a>