

GWNW Consulting, Inc.
Comments in GN Docket No. 09-191 and WC Docket No. 07-52
January 14, 2010

**BEFORE THE
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

In the matter of)	
)	
Preserving the Open Internet)	GN Docket No. 09-191
)	
Broadband Industry Practices)	WC Docket No. 07-52
)	

COMMENTS OF GWNW CONSULTING, INC.

Jeffrey H. Smith
Vice-President and Division Manager – Western Region
Chairman of the Board of Directors
GWNW Consulting, Inc.
8050 SW Warm Springs Street, Suite 200
Tualatin, Oregon 97062

Kenneth T. Burchett
Master Consultant

TABLE OF CONTENTS

EXECUTIVE SUMMARY	3
Introduction and Background	5
NPRM SECTION IV C. Codifying the Existing Four Internet Principles	
Who are we protecting and why?	6
NPRM SECTION IV F. Reasonable Network Management, Law Enforcement, Public Safety, and Homeland and National Security	
Flexibility is an important component of the rules	8
A balancing of objectives is required for a proper public policy result	9

EXECUTIVE SUMMARY

We concur with Commissioner McDowell that the only way the Internet can work is if engineers are allowed to discriminate among different types of traffic by allowing, for instance, video bytes to go ahead of e-mail bytes: *“Discriminatory conduct, in the network management context, does not necessarily mean anti-competitive conduct. The public interest would be better served if the debate would focus more on this important distinction.”*

Protecting individual customer interests has been a long-standing role fulfilled by both state and federal regulatory agencies. Commissioner Clyburn’s recent statements concerning this provide assurance that the Commission will continue this practice. However, statements by some observers that nascent companies such as Google should be afforded certain preferences should not extend to the area of net neutrality. We are concerned that the Commission may provide very large providers such as Google special treatment at the expense of small providers. We respectfully request that as this important net neutrality framework is developed that the circumstances related to meeting the needs of customers in high cost to serve rural areas are carefully evaluated and factored into this proposed set of rules.

Flexibility should be included in the development of net neutrality regulations. Leveraging the definitional distinction offered by Commissioner McDowell between discrimination and anti-competitive, one participant at a recent symposium offered that *“discrimination is somewhat of a loaded word”*, and expressed a concern that providers need to be able to guarantee *“quality assurance”* for customers with predictions of network traffic expecting to increase as much as 900% between 2005 and 2011. Further

comments about the discrimination concept were offered: *“What we’re talking about here is not discrimination, but differential pricing. Banning such a practice will force providers to recover the entire cost of investment from consumers.”*

If solving congestion problems is limited to capacity expansion, either directly or indirectly, then those firms with relatively high cost of capacity expansion are disproportionately harmed (as will be their consumers in most cases). Blanket prohibitions on particular types of network management, therefore, are dangerous, particularly for firms that have higher costs (small firms and rural firms).

In a bandwidth-constrained environment, congestion is caused by peak load over a short period. Networks are becoming bandwidth constrained as demand for high bandwidth services (video and P2P) grows. There has been substantial disagreement regarding the efficacy of various methods of congestion control and whether there is a relation between total packets downloaded over a long period vs. immediate peak load. The support for the various positions on these issues is most often based on theoretical studies. Since we have not found any research to date from any reliable sources that is based on evaluations on live, revenue producing networks with a mix of customer and traffic types, we have begun to conduct such an analysis. We are targeting the release of this study during the reply comment round of this proceeding.

INTRODUCTION AND BACKGROUND

The purpose of these comments is to respond to the Commission's Notice of Proposed Rulemaking in the above-captioned dockets. This proceeding has come to be known as the Net Neutrality rulemaking, and the policies that will be developed as a part of this proceeding will have a significant impact on future broadband infrastructure deployment, especially for providers in rural, high cost to serve territory.

GVNW Consulting, Inc. (GVNW) is a management consulting firm that provides a wide variety of consulting services, including regulatory and advocacy support on issues such as universal service, intercarrier compensation reform, and strategic planning for communications carriers in rural America.

There are a wide variety of opinions as to how the Commission should approach the net neutrality issue. Commissioner Copps has analogized the agency's work on network neutrality principles as similar to establishing a civil right. On the other hand, Commissioner McDowell¹ has offered an opinion that the only way the Internet can work is if engineers are allowed to discriminate among different types of traffic by allowing, for instance, video bytes to go ahead of e-mail bytes: *"Discriminatory conduct, in the network management context, does not necessarily mean anti-competitive conduct. The public interest would be better served if the debate would focus more on this important distinction."*

We support the active and vigorous debate that will occur on this important topic.

¹ Comments of Robert M. McDowell, Commissioner, Federal Communications Commission, as offered at the Institute for Policy Innovation Communications Summit in Washington, D.C., November 12, 2009.

Our comments in this round pertain to issues that the Commission has posed in the **NPRM SECTION IV C. - Codifying the Existing Four Internet Principles; and NPRM SECTION IV F. - Reasonable Network Management, Law Enforcement, Public Safety, and Homeland and National Security.** We respectfully submit the following detail.

NPRM SECTION IV C. Codifying the Existing Four Internet Principles

WHO ARE WE PROTECTING AND WHY?

In a recent statement of position, the Chairman suggested his recommended approach to network neutrality, seeking to codify as Commission rules the four Internet principles developed four years ago, often referred to as the Four Foundations, while at the same time adding two additional rules. Chairman Genachowski succinctly summarized the first four principles as: Network operators cannot prevent users from accessing the lawful Internet content, applications, and services of their choice, nor can they prohibit users from attaching nonharmful devices to the network.

Protecting individual customer interests has been a long-standing role fulfilled by both state and federal regulatory agencies. Commissioner Clyburn's recent statements concerning this provide assurance that the Commission will continue this practice. However, statements by some observers² that nascent companies such as Google should be afforded certain preferences should not extend to the area of net neutrality.

In the August, 2009 edition of Wired³ magazine, a different (and perhaps more accurate) view of the on-line search behemoth, that has the ability to stifle innovation

² For example, Professor Susan Crawford opining that nascent companies such as Google should not pay access charges demonstrates a lack of understanding of scope and scale.

³ *Is Google a Monopoly?*; Fred Vogelstein, Wired magazine, August, 2009, pages 57-68.

while at the same time crushing its competition, is offered. The article begins with several June, 2008 quotes at the ninth annual conference of the American Antitrust Institute from Christine Varney, who at the time of the quote was a partner at Hogan & Hartson: *“I think you are going to see a repeat of Microsoft...For me, Microsoft is so last century. They are not the problem. I think we are going to continually see a problem, potentially, with Google.”* Ms. Varney’s new job is in the lead role of the Justice Department’s antitrust division.

The Wired article continues at page 62: *“Google’s self-image was pithily summed up in its famous founding credo: ‘Don’t be evil.’ But recently, Google’s size and ambitions have begun to obscure its halo...Advertisers have watched nervously as the company’s share of the search-advertising market has jumped to 75 percent from 50 percent over the past three years...The company is currently under investigation by the DOJ for its ambitious book-scanning project, which aims to make every book ever published searchable on Google... For much of its history, Google has responded to most criticism with two words: Trust us...But in an economy destroyed by bad faith, secretive formulas, and complicated mathematics, trust is in short supply, and Google’s assurances are losing their persuasive power.”* The Wired article continues on page 63: *“Google has begun reaching out⁴ to regulators, advertisers, and trade groups to allay their concerns.”*

⁴ Indeed, Google is reaching out with clout and in a big way. As reported in the November 9, 2009 edition of Fortune magazine, in the cover story “Obama and Google: A Love Story” at page 105: *“Google managers and employees were some of the strongest supporters of candidate Obama, donating around \$803,000 to his presidential campaign, according to the website OpenSecrets.org. Among corporate employees, only staffers at Goldman Sachs and Microsoft gave more...and after Obama was elected, [Google CEO Eric] Schmidt and other Google executives forked over \$25,000 apiece to help pay for the inaugural celebration.”*

We are concerned that the Commission may provide very large providers such as Google special treatment at the expense of small providers. We respectfully request that as this important net neutrality framework is developed that the circumstances related to meeting the needs of customers in high cost to serve rural areas are carefully evaluated and factored into this proposed set of rules.

NPRM SECTION IV F. Reasonable Network Management, Law Enforcement, Public Safety, and Homeland and National Security

FLEXIBILITY IS AN IMPORTANT COMPONENT OF THE RULES

As reported in TR Daily, participants in a Washington, D.C. symposium in November, 2009, offered perspectives on why flexibility should be included in the development of net neutrality regulations. Leveraging the definitional distinction offered by Commissioner McDowell between discrimination and anti-competitive, one participant⁵ offered that “*discrimination is somewhat of a loaded word*”, and expressed a concern that providers need to be able to guarantee “*quality assurance*” for customers with predictions of network traffic expecting to increase as much as 900% between 2005 and 2011. Further comments about the discrimination concept were offered by Hance Haney⁶: “*What we’re talking about here is not discrimination, but differential pricing. Banning such a practice will force providers to recover the entire cost of investment from consumers.*”

With respect to infrastructure issues, one Democratic Congressman (Representative Gene Green from Texas) offered the opinion that: “*Network operators*

⁵ Steven Titch, policy analyst at The Reason Foundation.

⁶ Hance Haney, Director and Senior Fellow of the Technology & Democracy Project at the Discovery Institute.

should be able to protect the tens of billions of dollars of investment that they have in their building and maintaining and upgrading [of] the network.”

A former Clinton Administration Commerce Department official, Everett Ehrlich, offered one of the lighter moments at this November, 2009 meeting with the statement that he wears a pacemaker and suggested that he would prefer that the data from that device be transmitted to his doctor on a higher priority than “*his child’s download of a video of a cat playing the xylophone.*” Humorous anecdote aside, there are priorities in the delivery of certain information that should be recognized in the formation of rigid rules of engagement for network operators.

A BALANCING OF OBJECTIVES IS REQUIRED FOR A PROPER PUBLIC POLICY RESULT

Capacity issues are a key item in the coming years. In a recent Policy Bulletin, the Phoenix Center⁷ raises several important issues regarding rural interests. As stated at page 18:

If solving congestion problems is limited to capacity expansion, either directly or indirectly, then those firms with relatively high cost of capacity expansion are disproportionately harmed (as will be their consumers in most cases). Blanket prohibitions on particular types of network management, therefore, are dangerous, particularly for firms that have higher costs (small firms and rural firms).

In a bandwidth-constrained environment, congestion is caused by peak load over a short period. Networks are becoming bandwidth constrained as demand for high bandwidth services (video and P2P) grows. There has been substantial disagreement

⁷ George Ford, Lawrence Spiwak and Michael Stern, “Expanding the Digital Divide: Network Management Regulations and the Size of Providers,” Phoenix Center Policy Bulletin No. 23, October, 2009.

regarding the efficacy of various methods of congestion control and whether there is a relation between total packets downloaded over a long period versus immediate peak load. The support for the various positions on these issues is most often based on theoretical studies. Since we have not found any research to date from any reliable sources that is based on evaluations on live, revenue producing networks with a mix of customer and traffic types, we have begun to conduct such an analysis.

Most of the new services, such as streaming video and peer-to-peer (P2P) traffic, that are responsible for significant increase in bandwidth demand utilize the User Datagram Protocol (UDP – IETF RFC 768) at Layer 4. To deliver an acceptable level of customer experience, basic UDP's significant shortcomings in bandwidth-constrained networks must be overcome by outside means. These are: reduce load, add bandwidth, and manage load.

The evaluation that will be submitted in the reply round or as an ex parte will examine the cost of adding bandwidth versus managing load using various network management and flow control methods currently in use in the US broadband network. Reducing load is not a viable solution, and thus will not be evaluated.

This evaluation is being conducted on a live network that is operated by a small rural broadband service provider. The evaluation will determine bandwidth required for a given offered live-traffic load of a typical mix of packet (service) types with and without network management/flow control applied for various intervals of between 1 minute and 1 hour. We will determine the cost of additional bandwidth that might be required for successful, reliable operation without versus with Quality of Service (QoS)

implemented. Offered load over a short period of peak load versus total packets over a longer period will also be evaluated.

It is expected that the evaluation might show for the type of network evaluated that, under peak load/congestion conditions, significantly more bandwidth is required to provide an equal grade of service to the end user where a network is not managed for Quality of Service (QoS) than when a substantially similar network with similar load characteristics is managed for QoS. Our hypothesis is that with QoS implemented, the service experienced by the end user is substantially similar to that experienced with additional bandwidth and without QoS. This will result in cost savings as there is a measurable cost per bit for bandwidth. We expect that the cost of implementing network management/QoS is less than the cost of adding bandwidth to achieve similar performance and user experience.

We were encouraged this week to see AT&T, an active participant in this net neutrality debate, offer the following⁸ observation:

Thus, contrary to Free Press' claims, it seems clear that a rigid nondiscrimination standard that bans all forms of prioritization would arbitrarily cut off business models that are neither anticompetitive nor harmful to consumers...Fortunately, though, alternative proposals are emerging and being embraced by major Internet players that can address the concerns we have cited while at the same time providing consumers with reassurance against potential abuses that could harm their interests. We urge the Commission to recognize and embrace this middle ground.

⁸ Letter from James W. Cicconi, AT&T to FCC Chairman Julius Genachowski, January 12, 2010, page 4.

GVNW Consulting, Inc.
Comments in GN Docket No. 09-191 and WC Docket No. 07-52
January 14, 2010

Respectfully submitted,

Submitted via ECFS

Jeffrey H. Smith
Vice-President and Division Manager – Western Region
Chairman of the Board of Directors
GVNW Consulting, Inc.
8050 SW Warm Springs Street, Suite 200
Tualatin, Oregon 97062
Email: jsmith@gvnw.com

January 14, 2010