ENFORCING TRANSPARENCY: A DATA-DRIVEN ALTERNATIVE FOR OPEN INTERNET REGULATION

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I. INTRODUCTION

The wired and wireless networks that collectively make up the Internet are essential.¹ In today’s society, it is well understood—even axiomatic—that these networks shape our ability to work, educate, play, and socialize.² On December 23, 2010, the Federal Communications Commission ("FCC") created rules that govern how broadband Internet service providers ("ISPs")³ must treat certain customer data traveling over their networks.⁴ This action was the first of its kind: regulation of the content of network traffic to combat perceived bad-actor ISPs.

The Open Internet Order is designed to address “net neutrality,” also known as “open Internet.”⁵ Roughly, the principles of the open Internet hold that ISPs

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³ Examples of ISPs include Comcast, Time Warner Cable, Cox Communications, Verizon, and AT&T.

⁴ In re Preserving the Open Internet; Broadband Industry Practices, Report and Order, GN Docket No. 09-191, WC Docket No. 07-52 (Dec. 23, 2010) [hereinafter Open Internet Order].

⁵ The FCC does not use the term net neutrality. It prefers to couch the debate in terms of Internet “openness.” See In re Preserving the Open Internet; Broadband Industry Practices, Notice of Proposed Rulemaking, 24 F.C.C.R. 13064, ¶ 2 (Oct. 22, 2009) (“we seek public input on draft rules to preserve an open Internet”) [hereinafter Open Internet NPRM]. This Comment adopts that convention, because the term “neutrality” implies that Internet networks should be minimally managed by ISPs in order for everyone to have fair service. However, it is possible and even desirable that ISPs closely monitor their networks to ensure fair service. The point is to ensure that such management is equitable.
should refrain from manipulating the substantive data traveling thorough their networks for the purpose of network management. For example, rather than looking at the name of a legally downloaded song through a peer-to-peer ("P2P") network to determine the amount of bandwidth to allocate to a customer, open Internet advocates would argue that an ISP should make its routing decision based on the fact that the type of traffic is P2P.

Proponents of an open Internet—those who support minimal ISP involvement in making decisions about how to route data traffic—argue that broadband ISPs could exercise or do exercise a great deal of control over the critical information that passes through their networks. They argue that, as gatekeepers with incentives to manipulate network traffic, ISPs could block access to a particular website—or more deviously—degrade the quality of users’ connections to the point that they are discouraged from visiting the website. In the proponents’ view, regulation of network management to prevent discriminatory behavior is therefore desirable, because discrimination would result in an overall loss of freedom of information.


8 Comments of Free Press, supra note 7 at 113-114 (“Network providers control most of the relevant information about their networks, and average users (even, often, technically savvy users) have no means to gain awareness of the technology used for network control or deep packet inspection, or detect when it is occurring.”).

9 Id. at 4; In re Formal Complaint of Free Press and Public Knowledge Against Comcast Corporation for Secretly Degrading Peer-to-Peer Applications; Broadband Industry Practices 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 Management”, Memorandum Opinion and Order, 23 F.C.C.R. 13028, ¶ 1 (Aug. 1, 2008) (“Moreover, Comcast’s failure to disclose the company’s practice to its customers has compounded the harm.”) [hereinafter Comcast MO&O].

On the other hand, broadband ISPs argue that proposed regulations designed to curtail questionable network management practices are based largely on unfounded theories.\textsuperscript{11} Moreover, they argue, network management has been, and always will be, part and parcel of providing Internet access.\textsuperscript{12} In their view, imposing bureaucratic red tape to constrain innovation in network management will artificially increase the cost of maintaining the network and ultimately burden the consumer.\textsuperscript{13}

Although opposing parties will disagree over the sort of conduct that constitutes a violation of open Internet principles, the high-level discussion has followed at least three instances of ISP network management practices that arguably fall outside the bounds of reasonableness, as discussed in greater detail below.\textsuperscript{14} As the number of Internet users grows, and high-bandwidth applications increase in popularity, broadband ISPs will continue to struggle to effectively manage network traffic.\textsuperscript{15} Without clear authority, there may be future instances of unreasonable network management that the FCC could be powerless to redress.\textsuperscript{16} The FCC’s Open Internet Order, issued on December 23, 2010, attempts to resolve some of the debate’s difficult legal, economic, and policy problems by adopting policies against outright blocking and discrimination against consumers and third parties, as well as rules designed to increase

\textsuperscript{11} See, e.g., In re Preserving the Open Internet; Broadband Industry Practices, Comments of AT&T Inc., GN Docket No. 09-191, WC Docket No. 07-52, at 146 (Jan. 14, 2010) (available via FCC Electronic Comment Filing System) (“Intense competition already supplies consumers with a remarkable range of choices among wireless services, devices, and applications, and providers can be expected to continue investing and innovating in order to attract new users. In other words, the marketplace is thriving in precisely the ways the NPRM advocates, even though the net neutrality principles have never been applied to wireless services. The facts thus cannot begin to support the extension of the proposed net neutrality rules to those services.” (internal citations omitted)) [hereinafter Comments of AT&T]; See also infra Part III.C (discussing major instances of network management violations).

\textsuperscript{12} Comments of AT&T, supra note 11 at 34.

\textsuperscript{13} See id. at 46.

\textsuperscript{14} See infra Part III.C. These include incidents implicating Comcast, Madison River, and RCN in mismanaging their networks to the detriment of consumers. See Comcast, 600 F.3d at 644; In re Madison River Communications, LLC and Affiliated Companies, Order, 4, ¶ 1 (Mar. 3, 2005) (incident where Madison River blocked certain VoIP traffic); Chin v. RCN Corp., No. 08 Civ. 7349 (RJS) (KNF), 2010 U.S. Dist. LEXIS 96302, at *1-2 (S.D.N.Y. Sept. 3, 2010) (class action lawsuit against RCN, a broadband ISP).

\textsuperscript{15} Comments of AT&T, supra note 11 at 41.

\textsuperscript{16} Press Release, FCC, A Third-Way Legal Framework for Addressing the Comcast Dilemma, Statement of General Counsel Austin Schlick 2 (May 6, 2010), http://sjallfoss.fcc.gov/edocs_public/attachmatch/DOC-297945A1.pdf. This Comment operates on the assumption that at least some FCC engagement with open Internet issues is desirable, because the financial incentives of ISPs do not necessarily support what consumers and businesses value: equal access to all of the content and services that the Internet offers at the fastest possible speed.
awareness of ISP network management practices.\textsuperscript{17} However, the FCC's authority to adopt these regulations is unclear. Given that the Communications Act, the Commission's enabling statute, does not contemplate Internet regulation, the Commission used its controversial ancillary authority\textsuperscript{18} to give legal effect to these rules. In doing so, the Commission squarely addressed the D.C. Circuit's recent opinion in Comcast v. FCC, which struck down the Commission's previous attempt to use ancillary authority to penalize Comcast's decision to block network traffic using Bittorrent.\textsuperscript{19} The efficacy of the FCC's rebuttal will be severely tested. Within one month of issuance of the rules, Verizon and MetroPCS filed appeals in the D.C. Circuit to vacate the rules on the ground that the FCC lacks the requisite authority to promulgate them.\textsuperscript{20} Furthermore, the FCC already faces considerable pressure from Congress; indeed, the House of Representatives passed a resolution with the intent to overturn the Open Internet Order.\textsuperscript{21}

This Comment argues that, rather than attempt to craft rules at this time, the FCC should mandate an information collection with respect to network management practices pursuant to existing, well-defined legal authority. This Comment will attempt to articulate a way forward that is strong enough to address overzealous broadband ISP network management practices—insofar as harm has been demonstrated to date—without imposing unforeseen burdens on broadband ISPs' networks. Specifically, the FCC should require broadband ISPs to submit a form—tempered by appropriate confidentiality provisions—with questions that improve transparency about network management prac-

\begin{itemize}
\item \textsuperscript{17} Telecommunications Act of 1996, Pub. L. No. 104-104, §4(i), 110 Stat. 56, 58-60 (1996), codified at 47 U.S.C. §153(20) (authorizing the Commission to “perform any and all acts, make such rules and regulations, and issue such orders, not inconsistent with this chapter, as may be necessary in the execution of its functions.”).
\item \textsuperscript{18} See Am. Library Ass'n v. FCC, 406 F.3d 689, 701-02 (D.C. Cir. 2005) (summarizing the history of ancillary authority).
\item \textsuperscript{19} Comcast Corp. v. FCC, 600 F.3d 642 (D.C. Cir. 2010); Marcel Dischinger et al., Detecting Bittorrent Blocking, MAX PLANCK INSTITUTE (2008), http://broadband.mpi-swrs.org/transparency/results/08_imc_blocking.pdf.
\end{itemize}
tices, both within the FCC and to the public. This collection requirement, accomplished through a modification of the existing FCC Form 477, would provide the FCC, Congress, and consumers with valuable insight into broadband ISP practices. Most importantly, the FCC could build a data-driven record that would inform future regulatory or legislative action, if necessary.

This Comment proceeds in four parts. Part II explains the history of FCC regulations that shape the backdrop for the present debate. Part III explores problems inherent in the Open Internet Order, and explains how an information collection requirement would directly address those problems. Finally, Part IV describes why the FCC has affirmative legal authority to implement a mandatory data collection.

II. THE FCC’S REGULATORY CLASSIFICATIONS

Today’s open Internet debate is the product of two regulatory decisions: the decision to classify all communications services into either telecommunications services or information services, and the decision to craft rules to formally preserve the open nature of the Internet. The history of regulatory classification began in 1966 with a Commission investigation into “data processing services,” or services using computers to support business operations. Over the course of twenty-nine years, the FCC conducted three rulemakings that are collectively known as the Computer Inquiries. Although these inquiries arose primarily in response to competitive concerns, the data processing services at issue were novel, forcing the Commission to create new definitions that clarified the distinction between the voice communications services and data proc-

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22 Form 477 is designed to collect information about broadband deployment nationwide. See Instructions for Local Telephone Competition and Broadband Reporting (FCC Form 477), FCC, http://www.fcc.gov/Forms/Form477/477inst.pdf (last visited May 14, 2011).

23 Open Internet Order, supra note 4, ¶ 1.


26 In re Amendment of Section 64.702 of the Commission’s Rules and Regulations (Second Computer Inquiry), Final Decision, 77 F.C.C.2d 384 (Apr. 7, 1980) [hereinafter Computer II]; In re Amendment of Sections 64.702 of the Commission’s Rules and Regulations (Third Computer Inquiry); and Policy and Rules Concerning Rates for Competitive Common Carrier Services and Facilities Authorizations Thereof, Communications Protocols under Section 64.702 of the Commission’s Rules and Regulations, Report and Order, 104 F.C.C.2d 958 (May 15, 1986) [hereinafter Computer III].
Those definitions were carried forward into the Telecommunications Act of 1996 (the "1996 Act") largely intact. The 1996 Act—which forms the basis for the FCC's authority to regulate wire and radio communications but does not explicitly discuss how the FCC should regulate the Internet—forced the FCC to improvise when it first perceived the need to create Internet regulations.

The catalytic event for the reclassification debate was Comcast's treatment of customers who were using the P2P program Bittorrent, and the FCC's subsequent reaction. Finding that Comcast had violated its 2005 Internet Policy Statement, the FCC issued a 2008 order requiring that Comcast follow the tenets of the Internet Policy Statement. On Comcast's appeal, the D.C. Circuit concluded in 2010 that the FCC had overstepped its jurisdiction and vacated the FCC's order. This was an unexpected blow to the Commission, because the authority underlying the Comcast order was the same authority the FCC was using to justify certain of its National Broadband Plan programs. In effect, the D.C. Circuit had issued a decision with a much broader impact that reached far beyond the Comcast-Bittorrent dispute.

In 2009, prior to the D.C. Circuit's decision in Comcast, the FCC proposed rules in the Open Internet NPRM to govern ISP network management. These rules effectively codified the Internet Policy Statement. However, because the D.C. Circuit decision questioned the Commission's legal authority to enforce these regulations, the FCC published a Notice of Inquiry ("NOI") seeking comment on a new legal framework for Internet communications, called the "third-way." This "third-way" proposal would have subjected Internet traffic to some elements of Title II common carrier regulation. In effect, the NOI proposed to "reclassify" TCP/IP-based communication from an information service to a telecommunications service, bringing it more firmly under the FCC's jurisdiction.

After several months of stagnation, the FCC resolved both the Open Internet

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27 See infra Part II.B.
28 See infra Part II.C.
30 See infra Part II.D.
31 Comcast MO&O, supra note 9, ¶ 1.
32 Comcast, 600 F.3d at 644.
33 See NATIONAL BROADBAND PLAN, supra note 1, at 337. See also Comcast MO&O, supra note 9.
34 Open Internet NPRM, supra note 5.
35 Id. ¶ 16.
36 Comcast, 600 F.3d at 644.
38 Broadband Framework NOI, supra note 37, ¶ 67.
NPRM and the Broadband Framework NOI on December 23, 2010 with the release of the Open Internet Order.\textsuperscript{39} That order did not adopt the “third-way” framework as some feared; instead, it relied on substantially the same Title I justifications the FCC used to fine Comcast.\textsuperscript{40}

A. Computer I

At the time of the Computer I order, providers offered three types of services that utilized the phone network\textsuperscript{41}: (1) the regulated, legacy telephone business,\textsuperscript{42} (2) the emerging “data processing” business,\textsuperscript{43} and (3) a “hybrid” service, an integrated service that combined data processing functions with message-switching.\textsuperscript{44} Because these data processing services were novel, the Commission endeavored to craft new rules to enable competition in that market.\textsuperscript{45}

The result was the Computer I order.\textsuperscript{46} While the FCC found that the data processing industry was already competitive,\textsuperscript{47} it noted that telephone companies with in-house data processing services had a marked advantage over companies that only offered data services—telephone companies could cross-subsidize the data processing services with revenues from their existing telephone businesses.\textsuperscript{48} The FCC decided that the appropriate response was to force common carriers to structurally separate their data processing businesses from their telephone business to avoid competitive harm.\textsuperscript{49} Although the telephone companies could retain ownership of the data processing business, interaction between the two had to be conducted at arm’s length.\textsuperscript{50}

Hybrid services presented a special challenge. The Commission defined hybrid services as “those offerings of service which combine data processing and message-switching to form a single integrated service.”\textsuperscript{51} The Commission recognized that the integration of data processing functions into the telephone network presented a classification problem.\textsuperscript{52} On the one hand, computers were

\textsuperscript{39} Open Internet Order, supra note 4.
\textsuperscript{40} Id. ¶ 115.
\textsuperscript{41} Computer I, supra note 25, ¶ 36.
\textsuperscript{42} See id. (adopting a separate policy for data processing from regular telephone service).
\textsuperscript{43} Id.
\textsuperscript{44} Id. ¶ 38.
\textsuperscript{45} Id. ¶ 36.
\textsuperscript{46} Id.
\textsuperscript{47} Computer I, supra note 25, ¶ 20.
\textsuperscript{48} Id. ¶ 25.
\textsuperscript{49} Id. ¶ 36.
\textsuperscript{50} Id.
\textsuperscript{51} Id. ¶ 39.
\textsuperscript{52} Id.
performing data processing in the sense that they had to perform some algorithmic functions to initiate a call between two end-users. On the other hand, no data processing was taking place with respect to the content flowing across the telephone wires—the wires acted as a mere conduit of information.

The Commission’s solution was to adopt two definitions with different regulatory consequences. Both definitions were based not on the technical characteristics of the service, but on the functionality of the service. If “the data processing feature or function [were] an integral part of and incidental to message-switching,” the entire service would be classified as a “communications service for hire” and consequently regulated as a common carrier. If message-switching and data processing were part of a package intending to offer data processing, “there [would] be total regulatory forbearance with respect to the entire service.” The Commission’s focus on the functionality of hybrid service vis-à-vis the technical characteristics of the service is an approach that it would later employ when classifying broadband Internet services.

B. Computer II

In Computer II, the Commission adopted new definitions to clarify the separation between data transmission and data processing. “Basic service” was defined as a “common carrier offering of transmission capacity for the movement of information.” In other words, basic service was a pure data transmission path devoid of any computer processing. In contrast, “enhanced services” were “computer processing applications that act on the format, content, code, protocol or similar aspects of the subscriber’s transmitted information, or provide the subscriber additional, different, or restructured information, or involve subscriber interaction with stored information.” These definitions reflected evolving network and computer capabilities since the conclusion of the Computer I proceeding, particularly the transition of computing power away from a central host and toward customer equipment. The definitions remained

53 Computer I, supra note 25, ¶ 39.
54 Id.
55 Id. ¶¶ 41-42.
56 Id.
57 Id. ¶ 42.
58 Computer I, supra note 25, ¶ 40.
59 Id. ¶ 41.
60 See infra Part II-D.
61 Computer II, supra note 26, ¶¶ 5, 20.
62 Id. ¶ 5.
63 Id.
64 Id.
65 Id. ¶ 19.
the same until the Telecommunications Act of 1996.66

C. The Telecommunications Act of 1996

Collectively, the Computer Inquiries established the concept that information and the conduit for that information are separate things that require separate regulatory regimes.67 Sixteen years after the Computer II inquiry established those definitions, the 1996 Act retrenched them under new names.68 Basic services evolved into “telecommunications services,” which were services offered for a fee, and thus regulated under Title II.69 Telecommunications services are defined as “the offering of telecommunications for a fee directly to the public, or to such classes of users as to be effectively available directly to the public, regardless of the facilities used.”70

Enhanced services evolved into “information services,” regulated by ancillary authority.71 Information services are defined as “the offering of a capability for generating, acquiring, storing, transforming, processing, retrieving, utilizing, or making available information via telecommunications.”72

The regulatory impact of the establishment of these two categories of service was not immediately felt in the Internet space; 98% of consumers accessed Internet connections over phone lines, which were owned by the telephone companies and already subject to regulation.73 The catalyst for change was widespread consumer adoption of broadband cable modem service that offered increased bandwidth.74

The 1996 Act forms the basis for the FCC’s regulatory authority today.75 Since the FCC is locked in to its binary regulatory classifications—telecommunications services or information services—and because the definitions of those classifications lack any reference to the Internet,76 implementa-

66 The Computer III decision did not affect the basic and enhanced services definitions, and so is not discussed here. Its major contribution was to replace the structural safeguards separating AT&T and the Bell Operating Companies’ processing services from their telecommunications services the Commission implemented in Computer I. Computer III, supra note 26, ¶ 3.
67 See supra Parts II.A-B.
68 Broadband Framework NOI, supra note 37, ¶ 13.
69 Id.
71 Broadband Framework NOI, supra note 37, ¶ 13.
73 Broadband Framework NOI, supra note 37, ¶ 13.
74 Open Internet NPRM, supra note 5, ¶ 48.
tion of any rules related to the Internet require what amount to creative work-arounds such as the FCC’s proposed third-way reclassification.\footnote{Broadband Framework NOI, supra note 37, ¶ 2.}

D. Application of the 1996 Act to Broadband Technologies

The first Commission rulemaking interpreting cable modem service under the 1996 Act’s definitions was the Cable Modem Declaratory Ruling in 2002.\footnote{In re Inquiry Concerning High-Speed Access to the Internet Over Cable and Other Facilities; Internet Over Cable Declaratory Ruling; Appropriate Regulatory Treatment for Broadband Access to the Internet Over Cable Facilities, Declaratory Ruling and Notice of Proposed Rulemaking, 17 F.C.C.R. 4798 (Mar. 14, 2002) [hereinafter Cable Modem Declaratory Ruling].} Until that point, the regulatory classification of cable broadband was highly uncertain, being the subject of various complaints, licensing proceedings, merger reviews, and FCC white papers.\footnote{Id. ¶ 2.} None of these treatments were unified.\footnote{Id.} To reconcile them, the FCC declared in the Cable Modem Declaratory Ruling that cable modem services were “information services” and therefore subject to the Commission’s ancillary authority.\footnote{Id. ¶ 7.}

In order to arrive at this conclusion, the FCC examined cable ISPs’ retail offerings.\footnote{Id. ¶ 39 (“As provided to the end user the telecommunications is part and parcel of cable modem service and is integral to its other capabilities.”).} The FCC found that cable modem service combined elements of pure transmission—the coaxial cable itself—with elements of information processing, such as website hosting, domain name system resolution, and e-mail.\footnote{Cable Modem Declaratory Ruling, supra note 78, ¶ 38.} More importantly, both elements were sold as a package to customers.\footnote{Id. ¶ 11.} In the Commission’s view, the integration of the information service and the underlying telecommunications service was, in the aggregate, an information service.\footnote{Id. ¶¶ 38-39. From a technical standpoint, there is no reason why a cable broadband ISP could not sell a pure transmission service to a customer. Customers could choose their own web hosting company, e-mail service, or even their own DNS resolution server. Id. ¶ 17 (“At the most basic level, these functions include establishing a physical connection between the cable system and the Internet by operating or interconnecting with Internet backbone facilities. In addition, these functions may include protocol conversion, IP address number assignment, domain name resolution through a domain name system (DNS), network security, and caching.”) (emphasis added) (internal citations omitted)). Given this possibility, the Commission could logically have declared that the two services should have been regulated separately. In fact, as the Broadband Framework NOI describes, it recognized this possibility in the Cable Modem Declaratory Ruling:}

The Commission identified a portion of the cable modem service it called ‘Internet connectivity,’ which it described as establishing a physical connection to the Internet and interconnecting with the Internet backbone, and sometimes including protocol
From 2002 to 2005 the FCC’s classification decision was limited to cable modem service. It took several more years for the FCC to conclude that other broadband technologies were also information services as a result of the challenge to its authority in the NCTA v. Brand X case. Specifically, Brand X questioned whether the Commission was correct to classify cable modem service as an information service. In a sharply divided decision, the Supreme Court overturned the 9th Circuit and affirmed the Commission’s classification of cable modem service as an information service, on the grounds that the Commission deserved deference as the expert agency charged with regulating wire and radio communications.

Soon after its victory, the FCC made its classification scheme consistent across all broadband technologies. In the Wireline Order, it classified broadband Internet access service over telephone facilities as an information service because it, too, combined pure data transmission with data processing conversion, Internet Protocol (IP) address number assignment, domain name resolution through a domain name system (DNS), network security, caching, network monitoring, capacity engineering and management, fault management, and troubleshooting. The Ruling also noted that ‘network monitoring, capacity engineering and management, fault management, and troubleshooting are Internet access service functions that are generally performed at an ISP or cable operator’s Network Operations Center (NOC) or back office and serve to provide a steady and accurate flow of information between the cable system to which the subscriber is connected and the Internet.’ The Commission distinguished these functions from ‘Internet applications also provided through cable modem services,’ including ‘e-mail, access to online newsgroups, and creating or obtaining and aggregating content,’ ‘home pages,’ and ‘the ability to create a personal web page.’ (internal citations omitted)

Broadband Framework NOI, supra note 37, ¶ 16.

Cable Modem Declaratory Ruling, supra note 78, ¶ 1 n.5.


Brand X, 545 U.S. at 975.

Id. at 980-86.

Broadband Framework NOI, supra note 37, ¶ 21.

The Wireline Order did not reclassify legacy voice transmission, which was still under Title II jurisdiction. In re Appropriate Framework for Broadband Access to the Internet over Wireline Facilities; Universal Service Obligations of Broadband Providers; Review of Regulatory Requirements for Incumbent LEC Broadband Telecommunications Services; Computer III Further Remand Proceedings: Bel Operating Company Provision of Enhanced Services; 1998 Biennial Regulatory Review – Review of Computer III and ONA Safeguards and Requirements; Conditional Petition of the Verizon Telephone Companies for Forbearance Under 47 U.S.C. § 160(c) with Regard to Broadband Services Provided Via Fiber to the Premises; Petition of the Verizon Telephone Companies for Declaratory Ruling or, Alternatively, for Interim Waiver with Regard to Broadband Services Provided Via Fiber to the Premises; Consumer Protection in the Broadband Era, Report and Order and Notice of Proposed Rulemaking, 20 F.C.C.R. 14,853, ¶ 9 n.15 (Aug. 5, 2005) (‘This Order does not implicate the current rules or regulatory framework for the provision of access to narrowband transmission associated with dial-up Internet access services or other narrowband or broadband information services when provided by facilities-based wireline carriers.’).
pabilities. Nevertheless, within two years of that decision, the FCC declared that wireless broadband service and broadband over power line service were both information services, as well.

E. Proposed Open Internet Regulation

Throughout this transitional period, the FCC declined to directly regulate the Internet. However, it did undertake to describe what it believed to be Internet users’ rights in the Internet Policy Statement. That policy statement expresses the Commission’s sense that consumers are entitled to: (1) view content of their choice, (2) use applications and services of their choice, (3) attach devices of their choice to the network, and (4) have competition among broadband providers. The FCC made it clear that it would use this policy statement as a baseline against which it would measure ISP service. If the FCC found that a broadband ISP had “violated” these principles, the FCC would rely on its ancillary authority to enforce them.

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93 Open Internet NPRM, supra note 5, ¶ 40.

94 Broadband Framework NOI, supra note 37, ¶ 4.


96 Internet Policy Statement, supra note 95, ¶ 4. The Internet Policy Statement was not the Commission’s only attempt to establish itself within the Internet regulatory space. Two years after the Internet Policy Statement was issued, the Commission took a bold step by promulgating a notice of inquiry seeking to obtain “a fuller understanding of the behavior of broadband market participants today” by seeking comment on “packet management practices,” and pricing for broadband services. In re Broadband Industry Practices, Notice of Inquiry, 22 F.C.C.R. 7894, ¶ 8 (Mar. 22, 2007). It also considered “whether the [Internet] Policy Statement should be amended.” Id. ¶ 10.

97 Internet Policy Statement, supra note 95, ¶ 5.

98 See id. ¶¶ 2-3.
In 2009, as a result of explosive growth in the broadband market and Comcast's missteps with respect to its network management practices, the FCC tried to take a step forward by issuing a notice of proposed rulemaking ("NPRM") that, if adopted, would effectively codify the Internet Policy Statement as law. Its rationale was to promote innovation, investment, and competition by ensuring an open playing field among broadband ISPs and the content, applications, services, and devices that utilize their networks.

The Commission proposed adding two additional principles to the four existing ones. First, a principle of nondiscrimination: "subject to reasonable network management, a provider of broadband Internet access service must treat lawful content, applications, and services in a nondiscriminatory manner." Discrimination, in this context, appears to address the interrelationship between pricing and service. The Commission proposed that a broadband ISP would violate this rule if it were to charge two different prices for the provision of substantially equivalent services over a network. This rule would prevent broadband ISPs from choosing market winners and losers through arbitrary pricing schemes that do not consider the value of the service to consumers.

The second new principle, the principle of transparency, stated that: "subject to reasonable network management, a provider of broadband Internet access service must disclose such information concerning network management and other practices as is reasonably required for users and content, application, and service providers to enjoy the protections specified in this part." In support of this principle, the FCC stated "sunlight is the best disinfectant." Transparency enables predictability; in the open Internet context, the FCC noted, "disclosure rules would enable broadband subscribers to understand and take advantage of the technical capabilities and limitations of the

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99 Id. ¶ 8-10.
100 Id. ¶ 10.
101 Id. ¶ 16.
102 Id. ¶ 104.
103 Open Internet NPRM, supra note 5, ¶ 103 ("the ability of network operators to discriminate in price or service quality among different types of traffic or different providers or users may impose significant social costs").
104 Id. ¶ 106 ("We understand the term 'nondiscriminatory' to mean that a broadband Internet access service provider may not charge a content, application, or service provider for enhanced or prioritized access to the subscribers of the broadband Internet access service provider, as illustrated in the diagram below. We propose that this rule would not prevent a broadband Internet access service provider from charging subscribers different prices for different services." (emphasis added)).
105 See id. ¶ 103 (noting that discrimination may be motivated by anticompetitive concerns).
106 Id. ¶ 119.
107 Id. ¶ 118.
services they purchase. Transparency is also beneficial to those service providers whose businesses are built on broadband networks because they can tailor their services according to the capability of the underlying network. Perhaps most importantly, transparency enables decision-makers like the Commission and Congress to take more informed regulatory action and monitor the effectiveness of regulation.

F. The Comcast Case

In 2007, a group of Comcast subscribers suspected that Comcast was actively interfering with their Bittorrent traffic. The Associated Press and the Electronic Frontier Foundation ("EFF") investigated, and concluded that Comcast was indeed blocking Bittorrent traffic by actively interrupting the signal of Comcast subscribers. Soon afterward, Free Press and Public Knowledge, joined by a coalition of other interested parties, filed a petition for declaratory ruling with the FCC seeking an enforcement action against Comcast on the grounds that Comcast violated the principles of the Internet Policy Statement.

The result of that petition was an FCC order that found that Comcast had, in fact, violated its principles. Although Comcast had already agreed to cease blocking the Bittorrent application, the Commission ordered Comcast to disclose its network management practices, and put Comcast on notice that an automatic injunction would issue if Comcast failed to comply with the terms of the order. Comcast then brought a suit against the FCC, arguing, among other things, that the FCC did not have jurisdiction to issue its order because the Commission had failed to make the case that its ancillary authority was applicable.

Throughout the history of these classification decisions leading up to the D.C. Circuit's April 2010 decision in Comcast v. FCC, the Commission believed that its ancillary authority was sufficient to support some limited form of Internet regulation. It came as a rude awakening, then, when the D.C. Cir-

108 Id. ¶ 119.
109 Open Internet NPRM, supra note 5, ¶ 118.
110 Id. ¶ 119.
111 Comcast MO&O, supra note 9, ¶ 6.
112 Comcast, 600 F.3d at 644.
113 Id.
114 Comcast MO&O, supra note 9, ¶ 1.
115 Id.
116 Id. ¶ 55.
117 Comcast, 600 F.3d at 652 ("Comcast argues that neither section 230(b) nor section 1 can support the Commission's exercise of ancillary authority").
118 Broadband Framework NOI, supra note 37, ¶ 26.
cuit decided that the FCC’s reasoning was flawed. The court had accepted not one of the myriad of rationales the Commission used to argue that it had the ability to punish Comcast for effectively blocking the Bittorrent application. Although the court acknowledged the FCC’s broad subject matter jurisdiction over communications, it ultimately agreed with Comcast on the grounds that the Commission’s ability to invoke ancillary authority is not unlimited; were it otherwise, the court explained, the Commission would be able to delegate powers to itself far beyond the scope of its enabling statute. Instead, the Commission had to bind Title I to more concrete authority found in another Title of the 1934 Act. The Commission perceived this to be a major blow to its open Internet initiatives.

G. The “Reclassification” Proceeding

The Commission’s interpretation of the Comcast decision unilaterally halted its efforts to promote the objectives of the National Broadband Plan. To recover, the Commission issued a Notice of Inquiry on June 17, 2010 seeking comment on a new legal theory that FCC Chairman Julius Genachowski labeled the “third way.” Specifically, the Commission proposed to reverse the Cable Modem Declaratory Ruling and the subsequent orders classifying broadband technologies as information services. It would do so by separately recognizing the telecommunications (i.e., the pure transmission) component of ISP services and the information service component of ISP services. “Internet connectivity service” would describe the telecommunications component,

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120 Comcast, 600 F.3d at 658-61.
121 Comcast, 600 F.3d at 654 (“The [Midwest Video II] Court rejected that broad claim and, revealing the flaw in the argument the Commission makes here, emphasized that ‘without reference to the provisions of the Act directly governing broadcasting, the Commission’s [ancillary] jurisdiction . . . would be unbounded.’” (quoting Midwest Video II, 440 U.S. at 706 (emphasis in original))).
122 Comcast, 600 F.3d at 654 (“Although policy statements may illuminate that authority, it is Title II, III, or VI to which the authority must ultimately be ancillary.”).
124 Id.
125 Broadband Framework NOI, supra note 37, ¶ 2.
126 Id. In other words, the Commission had previously determined that broadband ISPs offered only information services (despite that it recognized that broadband ISPs might be offering both telecommunications and information services). The Commission is now proposing to recognize that broadband ISPs offer both telecommunications (“Internet connectivity service”) and information services (“Internet access service”). Id. ¶ 1 n.1.
and "broadband Internet service" would refer to the bundle of services that make up the information service component. The Commission proposed that Internet connectivity service, as a telecommunications service, would be regulated under those provisions of Title II that the Commission would find applicable to broadband Internet services. As before, the information services would remain subject to Title I ancillary authority.

Since Title II was not designed with Internet applications in mind, the Commission proposed to use its section 10 forbearance authority to limit that title's application to Internet connectivity services. This approach would have enabled the FCC to obtain powerful, common carrier regulatory authority over broadband ISPs, obviating the need to use ancillary authority. Therefore, the FCC would have had clear authority to implement the principles articulated in the Open Internet NPRM as a consequence of "reclassification" from Title I to Title II.

H. Reactions to Proposed Reclassification and Furtherance of the Open Internet Debate

The public comments filed in the Broadband Framework NOI's docket demonstrate that the reclassification-with-forbearance proposal engendered strong opinions. These fall into two basic categories. Advocates of reclassification generally agree that reclassification is the appropriate course of action because reclassification would give the Commission the robust authority it needs in order to carry out its broadband agenda. Opponents of reclassification...

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127 Id. ¶ 1 n.1.
128 Id. ¶ 2.
129 Id. ¶ 28.
130 Id. ¶ 2.
131 See supra Part II.E.
132 To lay out the regulatory terminology more clearly: "data transmission" under Computer I became "basic service" under Computer II, which became "telecommunications service" under the 1996 Act. Likewise, "data processing" under Computer I became "enhanced service" under Computer II, which became "information service" under the 1996 Act. Computer I, supra note 25; Computer II, supra note 26. Under the Broadband Framework NOI, the two terms used to describe what broadband ISPs offer to consumers are "Internet connectivity service" (a telecommunications service) and "broadband Internet service" (an information service). Broadband Framework NOI, supra note 37, ¶ 1 n.1. Note, however, that the Commission has sought comment on the precise meaning of Internet connectivity service. Id. ¶¶ 63-65.
133 Id. ¶¶ 28-29 (noting that "the full weight of Title II requirements would apply" to telecommunications services).
134 Open Internet NPRM, supra note 5, ¶¶ 60-61 (noting two different views of net neutrality and stating that it is in the Commission's interest to investigate it).
tion principally argue that the FCC does not need to take action because broadband ISPs lack incentives to block or degrade network traffic, \textsuperscript{138} reclassification would distort or complicate engineering decisions, \textsuperscript{137} reclassification would lead to considerable regulatory uncertainty, \textsuperscript{138} and that the reclassification proposal itself could be legally flawed on jurisdictional grounds. \textsuperscript{139}

The difficulty of reconciling the interrelationship between reclassification and open Internet issues forced the FCC to renew discussion of the Open Internet NPRM on September 1, 2010. \textsuperscript{140} For some months prior, the broadband industry and the FCC conducted a series of closed-door meetings in an attempt arrive at consensus on open Internet rules. \textsuperscript{141} However, the FCC discontinued the meetings as a result of mounting negative publicity, leaving the issue in a dead space. \textsuperscript{142} At the height of the debate, Verizon and Google published a "legislative proposal" that significantly reduced the FCC's role over regulation of network management practices in favor of using industry coalitions to establish uniform practices, as well as establishing separate regulatory treatment of wireline and wireless broadband networks. \textsuperscript{143}

A lack of concrete data contributed significantly to the contentious nature of these meetings. \textsuperscript{144} To date, there have been only three major instances where broadband ISP network management practices have been called into question. \textsuperscript{145} Comcast, described above, is one of the most widely used examples of

\textsuperscript{136} Comments of AT&T, supra note 11, at 17.
\textsuperscript{140} Further Inquiry Into Two Under-developed Issues in the Open Internet Proceeding, Public Notice, 25 F.C.C.R. 12637 (Sept. 1, 2010).
\textsuperscript{144} See infra Part III.C.
\textsuperscript{145} The Madison River, RCN, and Comcast cases form the bulk of the evidence against broadband ISPs. Infra Part III.C. Note that this analysis focuses on the network management aspects of NN and not the blatant sort of application blocking which the FCC also includes in its analysis.
the broadband ISP behavior that advocates of reclassification fear. In a second case, Madison River v. FCC, cable provider Madison River cut off certain VoIP services to its customers. In a third, RCN reached a settlement agreement disclaiming that it performed any wrongdoing with respect to its network management practices.

Advocates of reclassification and an open Internet have touted these cases, especially Comcast, as conclusive evidence that broadband ISPs have the incentive to continue to use network management practices that go beyond the bounds of reasonableness. But because there is no clear definition of—or agency precedent for—what constitutes a “reasonable” practice, and there are no reports of widespread abuse of network management, the FCC has a limited picture of the potential harms.

Moreover, as the number of Internet users grows rapidly, especially wireless Internet users, broadband ISPs may no longer be able to rely on expansion of physical network infrastructure to accommodate them; build-out is extremely expensive, but may only result in moderate increases in network throughput. The more attractive option for broadband ISPs is to turn to network management to accommodate increases in data throughput. The question then becomes how strong of a network management policy broadband ISPs can use without infringing on consumer rights to have free access to information. Currently, the answer to that question is unknown.

I. The Open Internet Order

However, the FCC appears to have abandoned the reclassification approach

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146 See supra Part II.F
147 Infra Part III.C.
148 Infra Part III.C.
150 Cf. Verizon-Google Legislative Proposal, supra note 154, at 1, with Open Internet NPRM, supra note 5, ¶ 135 (showing the varying definitions of what constitutes reasonable network management, involving varying degrees of specificity).
151 See, e.g., In re Preserving the Open Internet; Broadband Industry Practices, Comments of Cox Communications, Inc., GN Docket No. 09-191, WC Docket No. 07-52, at 32-33 (Jan. 14, 2010) (available via FCC Electronic Comment Filing System) (“there is no demonstrated need for any further action at this time”).
152 Infra Part III.B.
153 Infra Part III.B.
154 See infra Part III.D.
155 Again, there are a paucity of examples from which to determine what should and should not constitute reasonable network management. See infra Part III.C.
in favor of a compromise solution. In its December 2010 Open Internet Order, the FCC asserted its ancillary authority to adopt a heavily modified version of the open Internet rules originally proposed in the 2009 Open Internet NPRM.

The rules adopted by the Open Internet Order are nuanced. First, the FCC confined the scope of the rules to the last-mile connection between the customer and the broadband ISP's local node. Therefore, the rules designed to ensure consumer access to all or substantially all other Internet endpoints do not apply to services that do not connect directly to end-users, such as content-delivery networks, or virtual private networks. The competitive issues underlying such services are different from those that govern broadband service to consumers, and so they fall outside the scope of the proceeding.

Second, the FCC adopted three basic rules: transparency, in the form of voluntary disclosure of network management practices; no blocking, to prevent broadband ISPs from engaging in anticompetitive behavior; and no unreasonable discrimination, to ensure that customers' Internet connections would not be slowed to a crawl when using particular services.

The transparency rule requires broadband ISPs to "publicly disclose accurate information regarding the network management practices" of their services, "sufficient for customers to make informed choices." Those disclosures include information about network practices, performance characteristics of the network, and commercial terms. Although the FCC requires disclosure, there is no mandatory list or mandatory format for disclosure; the Order requires only "sufficient" clarity.

The no blocking rule prohibits broadband ISPs from blocking "lawful content, applications, or non-harmful devices, subject to reasonable network management." No blocking in this context includes degradation of a network connection to the point that it no longer effectively transports data. Significantly, the FCC prohibits broadband ISPs from charging third-party applica-

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156 Open Internet Order, supra note 4, ¶¶ 9, 115-16.
157 Id.
158 Id. ¶¶ 45, 49 (limiting the scope of the rules to "mass market" services, and defining "fixed broadband Internet access service" to encompass only service that "serves end users primarily at fixed endpoints using stationary equipment, such as the modem that connects an end user's home router, computer, or other Internet access device to the network." (emphasis added)).
159 Id. ¶ 47.
160 Open Internet Order, supra note 4, ¶ 47.
161 Id. ¶ 1.
162 Id. ¶ 54.
163 Id. ¶ 56.
164 Id. ¶ 54.
165 Open Internet Order, supra note 4, ¶ 63.
166 Id. ¶ 66.
tion and content providers a fee to remove a block, effectively preventing broadband ISPs from segregating services behind paywalls. The no unreasonable discrimination rule prohibits broadband ISPs from “unreasonably discriminat[ing]” against lawful network traffic to the end-user. The purpose of this rule is to enable “beneficial forms of differential treatment.” The FCC employs a balancing test to determine whether network management is discriminatory or not. The FCC will consider a number of factors if it decides to adjudicate a complaint. Such factors include, but are not limited to, the level of transparency of the broadband ISP, end-user control, use-agnostic discrimination, industry-standard practices, whether competitive services are being unduly targeted, whether user access is inhibited, whether the practice impairs free expression, and whether pay-for-priority arrangements exist.

Third, the FCC adopted a definition of reasonable network management to clarify what network engineering practices are acceptable to manage congestion on the network. A network management practice is reasonable if it is appropriate and tailored to achieving a legitimate network management purpose, taking into account the particular network architecture and technology of the broadband Internet access service. Legitimate network management practices include maintenance of network security or integrity, and alleviating the effects of network traffic congestion. However, the precise meaning of “appropriate” and “tailored” must be decided on a case-by-case basis.

Wireless networks receive different treatment, except with respect to the transparency rule. The transparency rule remains the same because the FCC has a significant interest in continually monitoring the state of the wireless industry as it evolves so the regulatory framework can keep up. Furthermore, the transparency rule at most imposes an administrative burden that should not have a significant effect on wireless ISPs’ businesses.

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167 Id. ¶ 67.
168 Id. ¶ 68.
169 Id. ¶ 69.
170 Open Internet Order, supra note 4, ¶¶ 70-77.
171 Id.
172 Id.
173 Id.
174 Id.
175 Open Internet Order, supra note 4, ¶ 83.
176 See id. ¶ 96 (“we conclude it is appropriate to take measured steps at this time to protect the openness of the Internet when accessed through mobile broadband”).
177 Id. ¶ 97.
178 Id.
179 Id. ¶¶ 59, 98 n.302 (incorporating the fixed broadband transparency discussion at
In the wireless context, the no blocking rule is modified to be narrower, applying only to websites and applications "that compete with the provider's voice or video telephony services." This effectively means that a wireless broadband provider could block everything except web content and competing voice applications, or sequester them behind separate subscription services. Finally, the discrimination rule is not applied to wireless broadband at all.

III. ENFORCING TRANSPARENCY THROUGH DATA

Having completed this whirlwind tour of the open Internet debate, Part III will accomplish three objectives. First, it will build some foundational knowledge of network management to explain not only why it is necessary, but also why it is necessary to continue monitoring its use. Second, it will walk through the three major occurrences of ISP misconduct or alleged misconduct that appear to undergird the open Internet debate. Third, operating on the assumption that the regulatory response should be proportional to the harm or potential harm demonstrated by these cases, this section outlines an alternative solution based on transparency: a mandatory information collection focused on network management that would piggyback on the FCC's existing broadband data collection form.

A. Internet Architecture

The Internet is a collection of networks that, in the aggregate, create one global network. This global network enables "end-to-end" communication—it allows any computer to communicate with any other computer. Initially, the Internet was not an end-to-end network. During their infancy in the 1950s and 1960s, computer networks had their own set of hardware, software, and protocol suites that were mutually exclusive. In the same way that an English

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180 Id. ¶ 99.
181 Cf. Open Internet Order, supra note 4, ¶ 63 with Open Internet Order, supra note 4, ¶ 99 (indicating that the no blocking rule for fixed broadband Internet access services has a much larger scope than the rule for mobile broadband Internet access service, so by inference the no blocking rule for mobile broadband Internet access service only protects a subset of the whole as defined by the fixed services rule).
182 Id. ¶ 104.
183 See infra Part III.C.
184 See infra Part III.D.
186 Open Internet Order, supra note 4, ¶ 13 n.13; See also ERIC A. HALL, INTERNET CORE PROTOCOLS: THE DEFINITIVE GUIDE 6 (2000).
speaker cannot understand a Mandarin Chinese speaker, a user operating on one network was physically and logically incapable of communicating with a user on another network.

Thus, while a computer network was very useful for disseminating information within that network, it was difficult to communicate that knowledge widely. As computers became critical tools, the military took the initiative to interconnect them, leading to the development of ARPANET. ARPANET became a focal point of interconnection, gathering up isolated research networks. But the problem remained that these networks were patched together rather than truly integrated through a common language. The solution to that problem was TCP/IP, the protocol suite that is still used today as the basis of Internet communication.

Unlike the telephone network—where communication relies upon central switches and dedicated circuits—computers use TCP/IP, relying on discrete units of information called packets that independently contain all the information necessary to reach their destinations. The significance of this difference cannot be overestimated. Once a caller picks up a telephone and dials a number, that caller is confined to aural communication via the transmission path opened by the telephone company’s switches. In contrast, a computer user with TCP/IP is agnostic to the type of data being sent and the types of networks through which that data is routed.

Many consequences follow from this architectural difference. The most well known is that the network becomes more robust because there is no central point that will bring down the entire network if destroyed. Furthermore, users are imbued with greater control at the edges of the network because they have the ability to shape the way they communicate with other users.

B. An Overview of Network Management

Although TCP/IP is interoperable and sufficient for many Internet applica-

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188 Id.
189 Id.
190 Id.
191 Id.
192 Id. at 2-3.
194 Id. at 4.
195 Id. at 41.
196 See id. at 10 (“IP provides a virtual representation of the network that is independent of any of the individual network segments, acting more like a national delivery service than a local courier service”).
197 Id. at 14.
tions, it is not necessarily efficient. Packets delivered through TCP/IP are not guaranteed to arrive at their destination. Even if they do arrive, they may not arrive in order, and are subject to congestion over the networks they travel. As a result, Internet networks have always employed some form of traffic management.

Congestion on the Internet is like congestion on highways. In some places, highways merge from more lanes to fewer lanes. Traffic jams occur at these bottlenecks when there are too many cars attempting to shift into a smaller space, forcing drivers to slow down to accommodate the change in speed. Internet networks experience the same problem. The largest data pipes, called “backbone” connections, are analogous to highways with many lanes—both allow greater volume and faster traffic flow versus smaller roads or connections. When packets transition from a larger pipe to a smaller pipe, they must compete with other packets, producing a traffic jam.

Network management techniques can alleviate congestion at these “merging lanes.” For example, computers managing data traffic merging from a larger facility to a smaller facility might buffer, or hold in suspension, some packets in order to facilitate faster data transmission across the smaller data pipe. If this basic form of network management were disallowed, Internet transmissions would be significantly less efficient.

Adding network capacity in the form of larger data buffers or faster connect-

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198 See id. at 16.
200 See id. at 27 fig.7. Figure 7 that Ou provides graphically depicts the conceptual functioning of the Internet as a series of connections that gradually decrease in terms of their capacity. Id. Roads share the same basic architecture: some are large and have higher speed limits, others are small and have lower speed limits. Where they interconnect, bottlenecks may occur.
201 Id.
202 Id.
203 See id. (depicting the locations within the network that experience bottlenecks).
204 See Ou, supra note 199, at app. A (analogizing broadband Internet connections—those with high capacity—to highways with many lanes).
205 See id. at 27.
206 Congestion occurs when the “sum total rate for the traffic entering a node [exceeds] the rate at which the same traffic can exit the node.” Kenneth D. Ko and Kevin W. Schneider, Wireline Platform Declaration, at 5 (Jan. 14, 2010), attached to Open Internet Comments of TIA, supra note 6.
207 See Ou, supra note 199, at 36 (“[w]ired networks have routers and switches that prevent packets from colliding on the same wire by using memory buffers called packet queues”).
208 See id. at 2, 4 (noting that even the highest-capacity networks can suffer from some delay absent network management; therefore, some network management is required regardless of capacity).
tions between nodes can help ease congestion, but it is an inefficient way to do so for two reasons. 209 First, it is expensive to upgrade existing facilities simply to obtain more capacity. 210 Second, the “bursty” nature of Internet data transmissions, similar to several cars traveling in relative proximity on a highway, means that high-capacity data pipes can become congested even if the overall amount of network traffic is small. 211 In network terminology, this rapid fluctuation in network traffic loads is called “jitter.” 212 As long as there are large and small data pipes that comprise the network, some amount of jitter will always be present. 213 Therefore, network management will always be necessary, no matter how fast the capacity of networks expands. 214

If network management is a basic element of network architecture, then why is it so closely scrutinized? Network management occurs internally to the ISP operating the network. 215 The ISP owns the equipment and operates the software required to implement network management policies. 216 Furthermore, it is under no obligation to disclose the specific contours of those policies. 217 Absent a concerted effort to understand a network’s topology through technical study, as the plaintiff in the RCN case did, 218 users outside the network cannot know what an ISP is prioritizing. ISPs can therefore operate as gatekeepers if they choose to do so without explicit oversight. Open Internet proponents believe that ISPs have incentives to abuse their gate-keeping powers, which threatens the end-to-end nature of the Internet.

C. Case Studies of Open Internet Violations

Open Internet proponents usually point to three main examples of open Internet violations.


One of the first and most widely reported open Internet violations was per-

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209 See id.
210 See id. at 3.
211 See id. at 26.
212 Id.
213 See Ou, supra note 199, at 27.
214 Id. at 2, 5.
215 See id. at 2-5 (discussing the various applications of network management).
216 Id.
217 Recall that the Open Internet Order only requires ISPs to disclose their practices in general terms.
petrated by Madison River Communications, LLC ("Madison River"). Madison River was a communications company in North Carolina that engaged in blocking VoIP traffic. Vonage, a provider of VoIP services, brought a complaint against Madison River in February 2005, claiming that Madison River was "port blocking" its Internet traffic and the traffic of other, smaller VoIP providers. Port blocking is a type of network management technique in which ISPs block access to certain channels of communication, "ports," through which Internet traffic flows. Because different types of Internet services use different ports, port blocking effectively enables an ISP to grant or deny access to particular services while they are using the ISP’s network.

The FCC investigated Vonage’s claims, which resulted in a consent decree barely one month after Vonage’s complaint. The FCC found that Madison River had violated 47 U.S.C. § 201(b), which requires telecommunications service providers to conduct themselves in a “just and reasonable” manner. Madison River agreed to pay a fine of $15,000 and to stop its VoIP port blocking practice for thirty months.

Since the consent decree preceded an FCC investigation, the actual extent—and, more importantly, rationale—for Madison River’s port blocking practices were not discussed. Madison River’s motives could have ranged from wholly rational cost-cutting measures, to blatant anti-competitiveness, to a philosophical disagreement with Vonage’s business. Thus, while it is clear that

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219 Declan McCullagh, Telco Agrees to Stop Blocking VoIP Calls, CNET (Mar. 3, 2005), http://news.cnet.com/Telco-agrees-to-stop-blocking-VoIP-calls/2100-7352_3-5598633.html. See also Open Internet NPRM, supra note 5, ¶ 32 (briefly describing the Madison River violation). Madison River was used by public interest advocates in the complaint against Comcast. In re Broadband Industry Practices, Comments of the Consumer Federation of America, Consumers Union and Free Press, WC Docket No. 07-52, at 107 (Jan. 14, 2010) (available via FCC Electronic Comment Filing System) (“For example, in 2005 Vonage, a provider of Internet telephone service over broadband access facilities, complained to the FCC that Madison River Telephone Company had blocked ports used for VoIP applications, effectively disabling consumers’ ability to utilize VoIP.”).

220 Id.


224 Id.

225 Madison River Decree, supra note 222.

226 47 U.S.C. § 201(b) (2006); Madison River Decree, supra note 222, ¶ 1.

227 Madison River Decree, supra note 222, ¶¶ 4, 19.

228 Id. ¶ 4 (agreeing to pay a fine “[t]o avoid the expenditure of additional resources that would be required to further litigate the issues raised in the Investigation”).

229 Compare In re Formal Complaint of Free Press and Public Knowledge Against Com-
Madison River used its network management practices in a way that harmed an Internet-based service, the case does not conclusively establish that open Internet rules are necessary to protect against anti-competitive conduct.


Comcast/Bittorrent is one of the most widely touted examples of open Internet violations because it is one of the more well-documented abuses of network management practices. Part II above describes the basic facts that ultimately led to the FCC’s reclassification proceeding. However, more detail is required to be able to compare this instance of mismanagement to other alleged violations. In 2007, certain users began to notice and complain of interruptions in their Bittorrent traffic. The strength of the complaints was sufficient that two parties, the EFF and the Associated Press, formally investigated Comcast. Using open source network monitoring tools, both parties concluded that Comcast was interfering with Bittorrent traffic using “reset packets.” Upon detection of Bittorrent traffic, Comcast would send packets with reset signals that would trick the customer’s computer into thinking that its connection to P2P servers had been interrupted. The result was either degradation or outright blocking of connections.

Comcast initially denied that it managed Bittorrent traffic. However, in the face of mounting pressure and increasing attention from regulators, Comcast gradually conceded that it was actively managing Bittorrent traffic. Its justification was that Bittorrent traffic heavily burdened its network, resulting in a loss of available bandwidth to customers on the same local network as those customers using Bittorrent, a loss of service quality, and financial

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230 Open Internet NPRM, supra note 5, ¶ 23, n.240.
231 See discussion supra Part II.
232 Comcast MO&O, supra note 9, ¶ 1.
234 Id.
235 Comcast MO&O, supra note 9, ¶ 1.
236 Id.
237 Id.
238 Id.
losses. Nevertheless, the FCC concluded that Comcast’s actions were a violation of its Internet Policy Statement (despite that the Internet Policy Statement is not law). The Order, however, was only effective in memorializing the case, because by the time the Order was released, Comcast had already agreed to cease blocking BitTorrent.

Two elements of this case garner the most attention. First, there are the optics of Comcast’s actions: Comcast initially denied the nature of its network management practices, then equivocated, then finally admitted to sending reset packets. Comcast’s conduct implied that it was hiding its network management practices because it believed that if customers knew about them, they would perhaps not use Comcast’s service. Second, even if Comcast’s chosen network management methods were technically sound, they give the impression that Comcast knew that its actions would not be well-received if discovered.

Why did Comcast choose to degrade BitTorrent communications despite the potential ramifications? Net neutrality advocates would infer that Comcast was attempting to be anti-competitive or anti-consumer, but there are other, equally plausible explanations. For example, the argument that P2P traffic degrades the experience for other users sharing a network is technically accurate. To reduce customer complaints and improve overall speeds, it would be necessary

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240 Comcast MO&O, supra note 9, ¶ 1.


243 Id. ("The catch to Cohen’s comments is that studies show that when a network is delayed, people will stop using it, said Marvin Ammori, Free Press general counsel.").

244 See supra Part III.B.


246 *FCC Gives Comcast 30 Days to File Plan to End P2P Traffic-Shaping*, *Communications Daily*, Aug. 21, 2008, available at LEXIS, Load-Date Aug. 20, 2008 (the FCC acknowledged in the Order that a small number of users use a disproportionately large amount of bandwidth).
to cut down on P2P traffic that overburdens some portion of the network.\textsuperscript{247} Additionally, the argument that Comcast is being anti-competitive begs the question: to whom? Blocking BitTorrent traffic could cause users to abandon BitTorrent as a protocol.\textsuperscript{248} But Comcast is an ISP, not a software provider.\textsuperscript{249} Since neither company directly competes with the other, Comcast’s motive to block BitTorrent to improve its position in its own marketplace is unclear.


In August 2008, Sabrina Chin sued RCN Corporation ("RCN"), a cable company, for violating the Consumer Fraud and Abuse Act,\textsuperscript{250} as well as various state laws.\textsuperscript{251} She alleged that RCN had falsely represented to consumers that "it provided ‘uncapped’ broadband Internet service that was fast, when, in fact, it engaged in certain network management practices that blocked and slowed service."\textsuperscript{252} After discovery, during which Chin hired an expert from the EFF to determine whether RCN was blocking certain Internet traffic,\textsuperscript{253} the parties entered into settlement negotiations that resulted in RCN acceding to conditions that, inter alia, prevented it from blocking P2P and non-P2P protocols.\textsuperscript{254}

Net neutrality advocates point to this case as an example of harmful network management practices.\textsuperscript{255} Taken with the Comcast case, \textit{Chin v. RCN} appears to establish that ISPs are engaged in a pattern and practice of blocking or degrading certain Internet traffic for anti-consumer and anti-competitive reasons. However, \textit{Chin v. RCN} offers very little insight into RCN’s network management practices and motives, let alone those of ISPs generally, because the case was not resolved on the merits.\textsuperscript{256} Whatever information was obtained in discovery has been obscured from public view; moreover, RCN never admitted to

\begin{footnotesize}
\begin{itemize}
\item \textsuperscript{247} Ou, \textit{supra} note 6, at 15-16 (explaining how peer-to-peer file transfers can burden networks).
\item \textsuperscript{248} \textit{Open Internet Order}, \textit{supra} note 4, ¶ 28 n.82 (noting that broadband providers can discourage demand by blocking end user access to edge providers).
\item \textsuperscript{250} 18 U.S.C. § 1030 (2006).
\item \textsuperscript{251} The case later became a class action lawsuit. \textit{Chin v. RCN Corp.}, 08 Civ. 7349 (RJS)(KNF), 2010 U.S. Dist. LEXIS 31272, at *1-2 (S.D.N.Y. Mar. 12, 2010).
\item \textsuperscript{252} \textit{Id.} at *2-3.
\item \textsuperscript{253} \textit{Id.} at *2-3.
\item \textsuperscript{254} \textit{Id.} at *4-5.
\item \textsuperscript{255} See, e.g., \textit{Reply Comments of Free Press}, \textit{supra} note 149, at 2-3.
\item \textsuperscript{256} As explained, the case was settled and RCN denied wrongdoing. \textit{Chin v. RCN Corp.}, 08 Civ. 7349 (RJS)(KNF), 2010 U.S. Dist. LEXIS 96302, at *16-17 (S.D.N.Y. Sept. 8, 2010).
\end{itemize}
\end{footnotesize}
any wrongdoing.257 Thus, to hold this out as an example of network management practices gone wrong is to elevate an allegation to a conclusion with respect to RCN's motives. 

Collectively, these three occurrences give rise to at least some cause for concern.258 The question is whether they establish a need for government intervention to prevent future harm from rogue network management practices.259 The answer is unclear; unfortunately, even where blocking or degradation has been established, the motives behind it do not appear to be well established enough that they counsel in favor of government regulation. Interestingly, these case studies share the common theme that government intervention did nothing to identify the issue in the first place. Instead, individual consumers and consumer advocate groups brought the initial pressure against ISPs to change their practices.260 Their knowledge that these practices exist and their apparent willingness to be vigilant in monitoring for them counsels against moving forward with a formal regulatory structure.

Convergence further complicates efforts at precisely identifying telecommunications provider incentives to block or degrade network traffic. Telecommunications providers offer multiple types of service, most commonly “triple-play” packages that bundle voice, video and Internet access.261 The regulatory regimes for each of these services are complicated enough; now that they are becoming less distinguishable, regulators and the market are struggling to catch up.262 For example, the merger between Comcast and NBC Universal sparked debate about the proper way to characterize “online video distributors,” such as Hulu, which use Internet protocol to deliver programming.263 Are such Online Video Distribution providers merely a complemen-

257 Open Internet Order, supra note 4, ¶ 36 n.110.
258 Id. ¶¶ 36-37.
259 Id. ¶ 21 (outlining three types of incentives the FCC believes that broadband service providers have to limit openness of the Internet).
261 See COMCAST, supra note 249.
262 For example, a variety of new online services have recently been released that break down traditional barriers between media, such as Time Warner Cable’s iPad application that allows live television to be streamed to the iPad, and the “HBO Go” service, which allows current HBO subscribers to watch fairly recent HBO content. TWCable TV for iPad, TIME WARNER CABLE, http://www.timewarnercable.com/nynj/learn/cable/TWCableTV/TWCableTV_iPad.html (last visited May 14, 2011); HBOGo, HBO, http://www.hbogo.com/ (last visited May 14, 2011).
263 In re Applications of Comcast Corp., General Electric Co., and NBC Universal, Inc.
tary service to traditional cable pay-TV, or are they direct competitors? The answer to these questions is non-trivial, because it dictates the competitive relationship between incumbent pay-TV services and new entrants to the market, and thus the FCC’s attitude toward market regulation. Some wireline-centric companies, like Cox Communications, are now aggressively entering into the wireless telecommunications market as well. Some traditional pay-TV-centric service providers are moving into the market for Internet-based applications. A recent example is Time Warner Cable, which has developed an iPad application that enables its customers to stream, within the home, full cable television channels to the iPad. Thus, competition is expanding both horizontally and vertically within the telecommunications market.

Network management pervades this Gordian knot. As discussed above, some level of network management must exist for the Internet to operate properly, and for ISPs to remain competitive. The FCC has avoided answering how much network management is reasonable by promulgating rules that rely on case-by-case adjudication to refine, over time, what constitutes reasonable network management. Although this strategy is sound—assuming it survives judicial review—the FCC would better serve the industry if it were to adopt a mandatory information collection to enable it to more effectively monitor the complex relationships it is attempting to regulate. Not only would this give the FCC an affirmative view of the industry landscape, rather than relying on third party reports, it would also assist in resolving any future complaints by giving the FCC a framework for analysis.

D. Application of the Transparency Principle

One of the major problems the FCC faces is determining when and how a violation of open Internet rules has taken place. The FCC has recognized that “sunlight is the best disinfectant.” It has also recognized that “only a mandatory and systematic collection of local competition and broadband deployment...
information will provide the comprehensive and consistent set of data [required] to carry out our statutory mandates."\(^{271}\)

Of course, the Open Internet Order attempts to address transparency.\(^{272}\) However, two problems become immediately apparent from the plain language of the rules: they do not require broadband ISPs to disclose the precise details of their network management practices, nor do they require sufficient detail to give third parties the information they need to monitor ISP behavior.\(^{273}\)

ISPs describe their network management practices in very general terms.\(^{274}\) The transparency rule of the Open Internet Order is probably broad enough that ISPs would not have to commit to substantive changes to those descriptions. The generality or specificity of ISPs' disclosures would hinge on their discretion, resulting in inconsistencies that could be unhelpful to both consumers and the FCC. Subtle distinctions in the way that ISPs report information will make it more difficult for consumers to compare services, and more difficult for the FCC or third party investigators to determine whether a violation is taking place.

The second problem is a corollary of the first. One of the central purposes of the transparency rule is to enable network monitoring so that third parties can bring complaints to the Commission. But this presupposes that third parties can collect enough information to make a case. This means that broadband ISPs, which have the greatest knowledge of their own networks, have the advantage in any such complaint.

This Comment takes the position that the case studies described above do not amount to enough evidence to conclude that regulation in the form of open Internet rules is necessary in the first place, not to mention the potential juris-

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\(^{271}\) In re Local Competition and Broadband Reporting, Report and Order, 15 F.C.C.R. 7717, ¶ 18 (Mar. 24, 2000). In fact, the FCC has acted to modify Form 477 to include more data about broadband deployment by issuing an NPRM. In contrast to this Comment's proposal, however, the FCC appears to be focused on collecting data about the speed of broadband services, their scope of deployment, and consumer satisfaction with their service. None of those categories would provide direct evidence of broadband providers' network management practices. See In re Modernizing the FCC Form 477 Data Program; Development of Nationwide Broadband Data to Evaluate Reasonable and Timely Deployment of Advanced Services to All Americans, Improvement of Wireless Broadband Subscribership Data, and Development of Data on Interconnected Voice over Internet Protocol (VoIP) Subscribership; Service Quality, Customer Satisfaction, Infrastructure and Operating Data Gathering; Review of Wireline Competition Bureau Data Practices, Notice of Proposed Rulemaking, 26 F.C.C.R. 1508, ¶¶ 47-106 (Feb. 8, 2011) (outlining the various types of information that could be collected) [hereinafter Form 477 NPRM].

\(^{272}\) Open Internet Order, supra note 4, ¶ 53.

\(^{273}\) Id. ¶ 54 ("[a] person engaged in the provision of broadband Internet access service shall publicly disclose accurate information . . . sufficient for consumers to make informed choices regarding use of such services" (emphasis added)).

\(^{274}\) See infra notes 281-82 (describing the different ways in which Cox and Comcast disclose their network management practices).
dictional issues. Should the opportunity arise to modify the rules, or should they be vacated, this Comment’s solution provides a way for the Commission to move forward confidently.

The Commission should keep itself abreast of developments in the broadband industry by instituting a mandatory information collection, which asks the same questions of all broadband ISPs, wireline and wireless. The Commission should make this data publicly available insofar as business-related confidentially concerns will allow.\textsuperscript{275} An information collection is the Goldilocks solution: not as extreme as either reclassification or inaction, but just the right fit.\textsuperscript{276}

In doing this, the Commission may arm itself with valuable data for future regulatory proceedings, complaints, and congressional action. Indeed, it already recognizes the value of ongoing information collection in other contexts.\textsuperscript{277} For example, the Commission reports annually on the state of competition in the mobile phone industry in order to make adjustments to its regulatory response over time,\textsuperscript{278} collects information on broadband and telephone line deployment through Form 477,\textsuperscript{279} and regularly reviews its media ownership rules.\textsuperscript{280} In the same way, it should continuously review the state of network management practices.

Moreover, an information collection regime managed by the Commission would create consistency in the reporting of broadband network management practices. Currently, different providers highlight different information about their networks.\textsuperscript{281} Where consumers have the choice among multiple providers,
this smorgasbord of information does not facilitate accurate comparisons.\textsuperscript{282} Were the FCC to consolidate and publish information on its website, however, comparisons would be much more straightforward.\textsuperscript{283} The Commission could benefit from uniform data collection as well, perhaps leveraging it to publish an annual or semi-annual report in the same manner as, for example, the CMRS reports.\textsuperscript{284}

E. Format of an Information Collection

This Comment's proposed information collection would have two components, both of which would become part of the existing Form 477.\textsuperscript{285} First, Form 477 already collects information on a semi-annual basis, and this would not be changed to prevent undue administrative burden to filers.\textsuperscript{286} Instead, additional questions targeting network management practices would be incorporated into the existing form.\textsuperscript{287} Second, a separate, abbreviated form would be designed to enable broadband ISPs to report changes to their network management practices within about a week of occurrence.\textsuperscript{288}
1. Addendum to Form 477

The additional questions incorporated into Form 477 would be divided into three categories\(^{289}\) that parallel those suggested by the Commission in the Open Internet Order: network openness (capturing the four original principles articulated in the Internet Policy Statement),\(^{290}\) nondiscrimination,\(^{291}\) and transparency measures.\(^{292}\)

\(^{289}\) On the actual form, these questions may be divided however it is administratively convenient for the Commission. For the purposes of outlining these questions here, it is useful to divide them into categories.

\(^{290}\) Open Internet NPRM, supra note 5, ¶ 92.

\(^{291}\) Id. ¶ 104; Comments of Free Press, supra note 7, at 59-60.

\(^{292}\) Open Internet NPRM, supra note 5, ¶ 119.

\(^{293}\) Id. ¶ 92.

\(^{294}\) These questions are not intended to be comprehensive; if the FCC were to adopt such an information collection, it would need to appropriately tailor the information collection to the FCC’s, consumers’, and ISPs’ needs.


\(^{296}\) See generally SANDVINE COMMENTS, supra note 295 (noting two overarching approaches to network management).

\(^{297}\) Here, the word “rules” is used to describe the “if-then” conditions that trigger network management practices. Broadband ISPs should not be asked to submit technical documents describing the operation of the software. Infra Part III(F).

\(^{298}\) This question is designed to enable the Commission and consumers to compare apples to apples. Without establishing baseline network management practices that are widely established throughout the broadband Internet provider industry, neither the Commission

\(^{299}\) Suggested questions are the following:\(^{294}\)

(1) Please list the platform(s) over which you provide broadband Internet services (e.g., DOCSIS 3.0, LTE) and describe the QoS techniques you use to regulate them.\(^{295}\) Do you use network management techniques based on data rate restrictions or prioritization?\(^{296}\) Are those measures subjective (i.e., based on policy) or objective (i.e., based on mathematical analysis)?

(2) Please describe the network management rules\(^{297}\) that are applied to each and every one of your customers, regardless of the nature (i.e., the duration, price, or tier) of their subscription and their prior data usage history.\(^{298}\)
Is there a hard limit, or cap, on the amount of data customers can use? If so, what is that hard cap (in megabytes or gigabytes)? Does the cap apply to a particular data plan? If so, please list those plans that have caps and provide references. If not, please describe how the cap is applied to the end-user.

Is there a “soft cap” which, when customers exceed a particular value of data consumed, their broadband connection’s capacity is reduced? If so, what is that soft cap (in megabytes or gigabytes)? To what data rate is the customer’s connection reduced after he or she exceeds the soft cap? Does the cap apply to a particular data plan? If so, please list those plans that have caps. If not, please describe how the cap is applied to the customer.

Have you entered into any mutual agreements with ISPs, content delivery networks (‘CDNs’), or other telecommunications entities that have provisions that affect the way you manage your networks?

Do you perform deep packet inspection (‘DPI’), or otherwise examine at the content of your customers’ data traffic for the purpose of managing your network? Why or why not?

b. Nondiscrimination

Questions in this section of the form would relate to broadband ISPs’ network management practices that might treat consumers, content providers, other consumers can understand whether a particular network management practice is truly reasonable. In this regard, Ofcom’s voluntary Code of Practice on Broadband Speeds encourages ISPs to publish broad information on the restrictions applied to applications, services and protocols on their networks. Traffic Management and ‘Net Neutrality’, OFCOM, 38 (2010), http://stakeholders.ofcom.org.uk/binaries/consultations/net-neutrality/summary/netneutrality.pdf.

See Features and Limits of Service, COX (July 1, 2010), http://ww2.cox.com/aboutus/northernvirginia/policies/limitations.cox. Note that Cox does not detail what occurs to the broadband customer’s connection should he or she exceed the limit specified in the chart Cox provides. Features and Limits of Service, COX (July 1, 2010), http://ww2.cox.com/aboutus/northernvirginia/policies/limitations.cox.

This question is designed to reveal whether contractual arrangements are governing the use of particular network management techniques; in other words, to reveal arrangements for paid prioritization. See Comments of Free Press, supra note 7, at 15-23 (discussing broadband ISP incentives to implement paid prioritization); See also In re Applications of Comcast Corporation, General Electric Company and NBC Universal Inc. For Consent to Assign Licenses or Transfer Control of Licensees, Petition to Condition or Deny of Earthlink, Inc., MB Docket No. 10-56, at 51 (Jun. 21, 2010) (proposing that the merger be conditioned on Comcast offering a broadband wholesale access service to prevent Comcast from discriminating against content providers and consumers).

Sandvine, a global company that provides network management solutions, notes that DPI could be considered a necessary element of any network management solution because sophisticated applications may themselves attempt to hide their activities from the network to circumvent restrictions. See SANDVINE COMMENTS, supra note 295.
er broadband ISPs, and/or applications, services and devices differently.\textsuperscript{303} Suggested questions include the following:

(1) Are there software applications or devices whose use by customers triggers network management rules that operate differently than the default rules?\textsuperscript{304} If so, please list those applications, describe the network management rules that apply to each of them, and explain why those applications merit different treatment.

(2) Are customers charged a different price per amount of data consumed after they have exceeded hard or soft caps?\textsuperscript{305} If so, what are those rates? Does exceeding those caps trigger different network management practices?

(3) Do you offer different tiers of service?\textsuperscript{306} What are those tiers, to whom are they marketed, and what do they cost?

(4) Do you provide managed services over your customers' Internet connectivity service?\textsuperscript{307} If so, describe these offerings. For example, are there particular classes of users that receive differential treatment based on their bandwidth, QoS needs, and/or subscription to particular services that require a more robust delivery mechanism than best-effort delivery?

c. Transparency to Consumers

This section of the form would ask questions related to how broadband ISPs inform their customers about their network management practices. Suggested questions include the following:

(1) List the means by which you inform your customers of your network management practices (e.g., website, customer service representative, etc.).\textsuperscript{308} If you provide no

\begin{itemize}
\item[\textsuperscript{303}] This Comment does not suggest that there should be a presumption that differential treatment should automatically be presumed to be equivalent to discriminatory treatment. \textit{Open Internet Order}, supra note 4, \textsuperscript{\$} 39.
\item[\textsuperscript{304}] For example, does the use of Bittorrent trigger network management rules applied only to the Bittorrent user's connection?
\item[\textsuperscript{305}] Wireless broadband ISPs, for example, charge overage rates when customers exceed pre-defined data usage limits. See, \textit{e.g.}, \textit{DataConnect Plans}, AT&T, http://www.wireless.att.com/cell-phone-service/cell-phone-plans/data-connect-plans.jsp (last visited May 14, 2011) (listing overage charges for data usage beyond 200MB or 5GB).
\item[\textsuperscript{306}] Currently many providers of both wired and wireless broadband service offer different levels or tiers of service based on the speed of the service. Cox, for example, provides four different packages of broadband Internet service, ranging from 3Mbps download to 50Mbps download. \textit{High Speed Internet}, Cox, http://ww2.cox.com/residential/northernvirginia/internet.cox (last visited May 14, 2011).
\item[\textsuperscript{307}] Managed services for the purposes of collecting data can be defined as "better than 'best-effort' delivery." \textit{See} Marcus Weldon, \textit{Managed Services Declaration}, I (Jan. 14, 2010), \textit{attached to Open Internet Comments of TIA}, supra note 6.
\item[\textsuperscript{308}] This section of the addendum is designed to establish whether and how broadband ISPs communicate with their customers to let them know the limitations of their service. \textit{See}
such information to your customers, please state why not.

(2) Have any customers filed complaints related to your network management practices? If so, how many complaints were there since you last filed, and what proportion of the total number of complaints you have received do they constitute?\textsuperscript{309}

2. The Abbreviated Form

A fundamental conflict exists between the FCC’s limited resources and the rapid pace of Internet innovation. FCC reports published annually or semi-annually are not likely to be able to match that pace, so broadband ISPs should be required to file updates with the Commission describing only changes to (1) hard or soft caps, (2) to overage charges for exceeding hard or soft caps, and (3) to systemic changes in network management rules within one week of those changes taking place.\textsuperscript{310}

F. Maintaining Broadband ISP Confidentiality

Some of the answers to these questions potentially depend on the submission of information that maps the contours of a broadband ISP’s network.\textsuperscript{311} One of the most obvious problems related to such specific disclosure is security for both the broadband ISPs and their customers.\textsuperscript{312} The Commission has


\textsuperscript{309} These questions are designed to provide the Commission, in particular, with an empirical— if imprecise— way to measure whether customers are being personally affected by network management practices. \textit{Traffic Management and “Net Neutrality”, OFCOM, 35-36 (2010), http://stakeholders.ofcom.org.uk/binaries/consultations/net-neutrality/summary/netneutrality.pdf}.

\textsuperscript{310} \textit{Supra Part III.E.1} (elaborating on rationales for each of these questions). The third proposed requirement deliberately uses the word “systemic” in order to differentiate between network management employed automatically (i.e., without human intervention), and the rules created to govern those systems. It would be absurd to require a formal notification to the Commission every time the rules were changed, because computer systems could be programmed to make slight changes to the rules within certain parameters in order to adapt to specific problems without changing the substantive effect of the rules. Therefore, broadband ISPs should be required to file only when the structure of their network management rules is changed. For example, if network computers were to determine that a customer needs more upload bandwidth and allocates another 6 MHz channel to that user to accommodate that need, no filing would be required. On the other hand, if a network engineer were to change the total amount of upload bandwidth the network computers are allowed to allocate to a customer, a filing would be required.

\textsuperscript{311} \textit{Supra Part III.E.1}.

\textsuperscript{312} \textit{In re Preserving the Open Internet; Broadband Industry Practices, Comments of Comcast Corp., GN Docket No. 09-191, 46-50 (Jan. 14, 2010),
recognized this issue with respect to broadband data collection, because it aggregates Form 477 data to anonymize the business data submitted by filing parties.\textsuperscript{313} Anonymizing data has the drawback of reducing transparency, however, so it must be used with caution.\textsuperscript{314} Were the Commission to impose a data collection requirement related to open Internet rules, the default assumption should be that all data submitted would be publicly available, unless filing parties request confidentiality through the Commission’s existing mechanisms.\textsuperscript{315} Public availability would allow not only the FCC to make use of the data, but consumers also.\textsuperscript{316} The Commission could thus serve an important public service function by organizing the data to enable the public to compare broadband ISPs’ network management practices simply by comparing responses across each question.\textsuperscript{317}

IV. THE FCC’S AUTHORITY TO IMPLEMENT A MANDATORY INFORMATION COLLECTION

An information collection regime will be effective so long as the Commission mandates that broadband ISPs submit answers to a uniform questionnaire. Otherwise, broadband ISPs have an incentive to choose a response format that favors their position, creating inconsistencies that would lessen the usefulness.

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\textsuperscript{314} Nowhere in the latest broadband deployment report does the FCC refer to a specific broadband ISP. See generally id. Therefore, this data cannot be used to compare broadband ISPs.


\textsuperscript{317} The FCC has recently created new tools to harness existing data to enable better public disclosure. Paul de Sa, FCC Reform: Data, http://reboot.fcc.gov/reform/data (last visited May 14, 2011) (“Data underpins every activity at the Federal Communications Commission. By better involving data in open and transparent rule-making, the FCC can better serve the public while enabling public innovation. The FCC has long published relevant data, though the process of improving its quality, openness, accessibility, and utility warrants continuous progress.”).
of the data to the Commission and the public. This section outlines the Commission's authority to make such information collection mandatory.

A. Piggybacking on Existing Authority

One of the strongest advantages of an information collection requirement is that it would not require the FCC to navigate difficult jurisdictional arguments. By folding questions that probe network management practices into the existing Form 477, the statutory framework on which Form 477 relies could be extended to support those questions as well. Specifically, Form 477 uses section 706 of the 1996 Act to justify the Commission's authority. When the Broadband Data Improvement Act ("BDIA") was passed in 2009, 47 U.S.C. § 157 note was re-codified as 47 U.S.C. § 1302. Section 1302(a) reads:

The Commission and each State commission with regulatory jurisdiction over telecommunications services shall encourage the deployment on a reasonable and timely basis of advanced telecommunications capability to all Americans (including, in particular, elementary and secondary schools and classrooms) by utilizing, in a manner consistent with the public interest, convenience, and necessity, price cap regulation, regulatory forbearance, measures that promote competition in the local telecommunications market, or other regulating methods that remove barriers to infrastructure investment.

An information collection requirement for network management practices would give effect to this language by better enabling the FCC to understand the state of competition in the broadband market and would allow it to more effectively carry out its goal of widespread broadband deployment. The FCC has explicitly recognized the advantage of an information collection program in the context of broadband deployment:

[An] information collection program will also enable us to better assess the availability of broadband services such as high-speed Internet access, so that we can better satisfy our duty to encourage the deployment of advanced telecommunications capability as Congress directed us to do in section 706 of the

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318 See discussion supra note 273.
319 See Comcast, 600 F.3d at 659 ("We readily accept that certain assertions of Commission authority could be 'reasonably ancillary' to the Commission's statutory responsibility to issue a report to Congress. For example, the Commission might impose disclosure requirements on regulated entities in order to gather data needed for such a report.").
320 Broadband Deployment NOI, supra note 279, ¶ 1 n.1.
321 Id.
323 In re Local Competition and Broadband Reporting, Report and Order, 15 F.C.C.R. 7717, ¶ 3 (Mar. 24, 2000) ("this information collection program will also enable us to better access the availability of broadband service such as high-speed Internet access").
Competition ISPs would be able to see this data as well.\textsuperscript{325} This transparency promotes competition by enabling broadband ISPs to monitor and react to their competitors’ moves with respect to network management.

The FCC could initiate a rulemaking to modify section 1.7000 of its rules\textsuperscript{326} to include questions within the existing Form 477 information collection to address broadband ISPs’ implementation of network management practices.\textsuperscript{327} As demonstrated above, network management and network efficiency are wholly intertwined.\textsuperscript{328} Without information on network management, the FCC cannot assess the services offered to consumers, which means that the FCC cannot monitor the progress of broadband deployment in the United States.\textsuperscript{329}

The language of the statute (specifically, subsection (b)) is directly on point: \textsuperscript{330}

The Commission shall, within 30 months after the date of enactment of this Act [enacted Oct. 10, 2008], and annually thereafter, initiate a notice of inquiry concerning the availability of advanced telecommunications capability to all Americans.... In the inquiry, the Commission shall determine whether advanced telecommunications capability is being deployed to all Americans in a reasonable and timely fashion.\textsuperscript{331}

Section 1302(b) supports ongoing Commission data collection to determine whether broadband is being widely deployed.\textsuperscript{332} The latest Commission report on the state of broadband was released in September 2010, and Commission has maintained ongoing Form 477 collection efforts.\textsuperscript{333}

Apart from jurisdictional arguments tied to Form 477, the FCC may have an

\textsuperscript{324} In re Local Competition and Broadband Reporting, Report and Order, 15 F.C.C.R. 7717, ¶ 3 (Mar. 24, 2000).
\textsuperscript{325} The FCC publishes a web page listing its broadband reports based on Form 477, Local Telephone Competition and Broadband Deployment, FCC, http://www.fcc.gov/web/iatd/comp.html (last visited May 14, 2011). Presumably, network management data, if implemented via Form 477, would be reported in this listing.
\textsuperscript{326} 47 C.F.R. § 1.7000 (2010) et seq.
\textsuperscript{327} 47 C.F.R. § 1.411 (2010).
\textsuperscript{328} See discussion supra Part III.A-B.
\textsuperscript{329} See Broadband Deployment NOI, supra note 279, ¶ 3 (Aug. 6, 2010) (“[t]he ultimate purpose of this Inquiry is to inform ourselves about the state of broadband deployment and its progress so that we can consider what additional actions, if any, should or should not be taken by the Commission to bring broadband to all Americans”).
\textsuperscript{330} Instructions for Local Telephone Competition and Broadband Reporting (FCC Form 477), FCC, http://www.fcc.gov/Forms/Form477/477inst.pdf (last visited May 14, 2011).
\textsuperscript{331} 47 U.S.C. § 1302(b) (Supp. III 2006).
\textsuperscript{332} 47 U.S.C. § 1302(b) (Supp. III 2006).
\textsuperscript{333} See generally In re Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996, as Amended by the Broadband Data Improvement Act, Seventh Broadband Deployment Notice of Inquiry, GN Docket No. 10-159 (Aug. 6, 2010).
argument that an information collection is valid on ancillary authority. The Comcast court, speaking in the context of section 257, said that ancillary authority might allow the Commission to “gather data needed for such a report.” In contrast, only affirmative regulation would violate the boundaries of ancillary authority. Since this Comment suggests an information collection based on an existing, and ongoing, Commission obligation, as opposed to positive regulation, there is a possibility that the Commission could cite ancillary authority to bolster the authority it wields under section 706.

B. Enforcement Authority

To give the information collection some teeth, the Commission must also be able to levy penalties against noncompliant entities. Fortunately, that authority has been articulated before in the context of the original Form 477 data collection.

Here, the Commission’s primary enforcement authority is derived from 47 U.S.C. § 502, which prohibits “knowing and willful” violations of any “rule, regulation, restriction, or condition made or imposed by the Commission under authority of this Act.” Assuredly, an information collection designed pursuant to a congressional mandate falls within the Commission’s authority. Section 502 lays the groundwork for Commission enforcement authority. Section 503 takes the next step, permitting forfeitures against persons who have “willfully or repeatedly” failed to comply with regulations promulgated under the 1934 Act. Section 403 enables the Commission to begin an enforcement

334 Section 257 is an ongoing, Congressionally-mandated report on the effect of regulation on market entry barriers. 47 U.S.C. § 257(c).
335 Comcast, 600 F.3d at 659.
336 See Comcast, 600 F.3d at 659-60 (“But the Commission’s attempt to dictate the operation of an otherwise unregulated service based on nothing more than its obligation to issue a report defies any plausible notion of ‘ancillariness.’”).
337 In re Local Competition and Broadband Reporting, Report and Order, 15 F.C.C.R. 7717, ¶ 22 (Mar. 24, 2000).
338 47 U.S.C. § 502 (2006) (“Any person who willfully and knowingly violates any rule, regulation, restriction, or condition made or imposed by the Commission under authority of this Act...shall, in addition to any other penalties provided by law, be punished, upon conviction thereof, by a fine”).
339 In re Local Competition and Broadband Reporting, Report and Order, 15 F.C.C.R. 7717, ¶ 105 (Mar. 24, 2000) (“Moreover, we note that the Commission has authority pursuant to sections 502 and 503 of the Act to enforce compliance with its rules by fine or forfeiture.”).
340 47 U.S.C. § 502 (2006) (“Any person who willfully and knowingly violates any rule, regulation, restriction, or condition made or imposed by the Commission under authority of this Act...shall, in addition to any other penalties provided by law, be punished, upon conviction thereof, by a fine”).
341 47 U.S.C. § 503(b)(1) (“Any person who is determined by the Commission, in accor-
proceeding on its own.\textsuperscript{342} Finally, 47 C.F.R. § 7001(f) explicitly puts broadband ISPs on notice that failure to file Form 477 may lead to an enforcement action under the above-stated statutes and rules.\textsuperscript{343} Collectively, these provisions would enable the Commission to back a network management information collection with penalties that would ensure compliance.

V. CONCLUSION

The Commission finds itself in a difficult position.\textsuperscript{344} On the one hand, it recognizes that there may be a future need to regulate broadband ISPs to prevent a nascent, but looming, harm.\textsuperscript{345} On the other, it is experiencing uncertainty with respect to the method and authority it should use in order to reassert itself.

Fundamentally, this Comment's proposed solution is a compromise among the several powerful interests that shape the open Internet debate. Although it is likely not the robust solution that the Commission would like to adopt, it does provide a way to move forward without triggering the regulatory difficulties that arise from classifying components of Internet service into either the telecommunications or information services silos.\textsuperscript{346} From the public interest stakeholders' perspective, it may not be strong enough, at least in the near term, because it does not explicitly solve the immediate problem they perceive. And from the broadband ISPs' perspective, it adds yet another layer of reporting requirements.\textsuperscript{347}

Nonetheless, the importance of broadband communications to our economy mandates action so that these interests may be balanced and the public interest may be served. The author hopes that this Comment at least advances the debate forward.

\textsuperscript{342} 47 U.S.C. § 403 ("The Commission shall have full authority and power at any time to institute an inquiry, on its own motion, in any case and as to any matter or thing concerning which complaint is authorized to be made, to or before the Commission by any provision of this Act, or concerning which any question may arise under any of the provisions of this Act, or relating to the enforcement of any of the provisions of this Act.").

\textsuperscript{343} 47 C.F.R. § 1.7001(f)(2010) (failure to file Form 477 may lead to enforcement action).

\textsuperscript{344} See supra Part II.H.

\textsuperscript{345} Supra Part II.I.

\textsuperscript{346} Supra Part II.I.

\textsuperscript{347} Open Internet Order, supra note 4, ¶ 59.