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Derailed by the D.C. Circuit: Getting Network Management Regulation Back on Track

Edward B. Mulligan V

Indiana University Maurer School of Law

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Derailed by the D.C. Circuit: Getting Network Management Regulation Back on Track

Edward B. Mulligan V*

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* Edward, better known as “Ned,” graduated *cum laude* from Dickinson College, where he received a Bachelor of Arts in economics. As a law student, Ned served as Executive Editor of Volume 62 of the *Federal Communications Law Journal*. Ned expects to receive his Juris Doctor degree from Indiana University Maurer School of Law in May 2010. First and foremost, Ned would like to thank his fiancée, Laura MacLeod, for her love and support throughout the Note writing process and, more generally, law school. He would also like to express his appreciation for the members of the *Federal Communications Law Journal* who left this Note better than they found it.

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I. INTRODUCTION

Over the last two decades, the Internet has become one of the world's most popular and valuable tools. In fact, over the last nine years alone, the percentage of American adults using the Internet has increased over twenty-five percent—from fifty-three percent in 2000 to seventy-nine percent in 2009.¹ Because Americans have become increasingly reliant on the Internet in the course of their daily lives, the need for Internet regulation has become a topic of public debate.² Growing concerns about how Internet service providers (ISPs) manage network traffic have fueled this already-heated debate.³ While policymakers have remained reluctant to formally regulate the Internet, actions taken in recent years have indicated a shift in this policy—a sign that the days of a largely unregulated Internet may be coming to an end.

Despite this trend, recent attempts by the FCC to implement Internet regulations—particularly those addressing network management practices—have faltered. The most recent setback is the D.C. Circuit's decision in *Comcast v. FCC*.⁴ In that appeal, Comcast asked the D.C. Circuit to determine whether the FCC had the requisite authority to regulate its network management practices—a claim the FCC made in its August 2008 *Memorandum Decision and Order* (“FCC Order” or “Order”).⁵ The

1. See U.S. Census Bureau, Table 1121-Adult Computer and Adult Internet Users by Selected Characteristics: 2000 to 2009, available at <http://www.census.gov/compendia/statab/2010/tables/10s1121.pdf>.

2. See, e.g., Cade Metz, *U.S. Cable Giant To Throttle P2P*, THE REGISTER, Jan. 28, 2009, available at http://www.theregister.co.uk/2009/01/28/cox_traffic_delay/.

3. See *id.*

4. *Comcast Corp. v. FCC*, No. 08-1291 (D.C. Cir. Apr. 6, 2010).

5. Formal Complaint of Free Press and Public Knowledge Against Comcast Corp. for Secretly Degrading Peer-to-Peer Applications, *Memorandum Opinion and Order*, 23 F.C.C.R. 13028, para. 1 (2008) [hereinafter *FCC Order*]. In that *Memorandum Opinion and Order* (“FCC Order” or “Order”), the FCC took a major step toward regulation by condemning Comcast Corporation's network management practices as both “discriminatory” and “arbitrary.” *Id.* The FCC concluded that Comcast's network

D.C. Circuit first acknowledged that the Communications Act of 1934 did not grant the FCC *explicit* authority over cable Internet providers.⁶ The court then considered whether the FCC had *ancillary* authority to regulate network management practices.⁷ It answered this question in the negative as well.⁸

So, as of the publication of this Note, the FCC does not have the requisite authority to regulate network management practices.⁹ As the discriminatory nature of Comcast's former network management practices illustrates, that regulation *is needed* in this area. Therefore, conceding jurisdiction should not be an option for the FCC. It is merely the first step in getting its plans for network management regulation back on track. In fact, there are a variety of circumstances under which the FCC could gain authority over cable Internet providers.¹⁰ These include a possible appeal to and reversal by the United States Supreme Court of the D.C. Circuit's decision, congressional action granting the FCC explicit authority, or reclassifying cable Internet service so that it falls within the FCC's authority under either Title II or VI of the Communications Act (which grant the FCC explicit authority to regulate "telecommunications services" and "cable services," respectively).¹¹ However, as this Note cautions, overcoming the jurisdictional problem is only the first step of many required to solve the FCC's Internet regulation problems. More is needed, as evidenced by Comcast's failed attempt at compliance with the now-vacated *FCC Order*. The FCC must adopt clear rules that set identifiable boundaries for network management, enforced by monitoring procedures and serious consequences in the case of noncompliance.

Part II of this Note sets forth the historical context that gave rise to the current state of affairs, including a discussion of the *FCC Order* and the D.C. Circuit's recent decision. Part III anticipates how the FCC might "reestablish" jurisdiction over cable Internet providers in the future, while cautioning that, because other problems persist, jurisdiction is only the first step. In support of the latter assertion, Part III.B demonstrates how

management practices discriminated among certain applications and protocols by targeting peer-to-peer (P2P) uploads and downloads and subjecting them to slowdown regardless of whether the network was congested. *See id.* at para. 41. In its *Order*, the FCC required that Comcast take the following actions: (1) disclose, in detail, its discriminatory network management practices; (2) implement a new network management practice by the end of 2008 that would comply with the FCC's Internet principles; and (3) disclose the nature of any new practice to the FCC and subscribers. *Id.* at para. 54.

6. *Comcast Corp.*, No. 08-1291, slip op. at 5.

7. *Id.* slip op. at 6.

8. *Id.* slip op. at 36.

9. *See id.*

10. *See infra* Part III.A.

11. *Id.*

Comcast's new practices failed to comply with the framework set forth in the *FCC Order*. Part IV sets forth policy recommendations—suggesting that the FCC should not concede jurisdiction, but rather aggressively pursue it. It also suggests that, if need be, Congress should step in and grant the FCC explicit authority to regulate the network management practices of cable Internet providers. Part IV also argues that the FCC, once it secures jurisdiction, should take the next step forward by codifying the framework that it set forth in its *FCC Order* but backed by monitoring procedures and real consequences, such as a form of probationary period. Finally, Part V concludes that while jurisdiction may be the issue of the day, the D.C. Circuit's decision does not foreclose the possibility that the FCC will reenter the picture in the near future. As Comcast's actions—its prior employment of discriminatory management practices and failure to comply with the *FCC Order* (when it was assumed valid)—illustrate, future regulation of network management practices must be accomplished by more than just adjudicative proceedings based on vague principles. Clear rules backed by monitoring procedures and serious consequences must be adopted and enforced.

II. BACKGROUND—NETWORK MANAGEMENT

The following Sections discuss network management as a concept, why regulations are needed, and the initial steps taken by Congress and the FCC to regulate such practices. The Sections that follow then focus on the network management practices of one of the world's largest ISPs, Comcast Corporation, that led the FCC to pursue aggressive regulatory tactics. Part II.C outlines exactly how Comcast's former management practices worked. Part II.D discusses the *FCC Order* and the framework it employed in determining that Comcast's practices had violated federal Internet policies. Part II.E mentions Comcast's response to the *FCC Order*—the adoption of new network management practices and, in the alternative, an appeal to the D.C. Circuit challenging the FCC's authority to regulate its practices in the first place. Part II.F discusses the D.C. Circuit's long-anticipated decision, which focused on the FCC's authority to regulate in this area. Finally, Part II.G outlines the reactions by the FCC and Comcast to the D.C. Circuit's decision in an effort to anticipate the future direction of this dispute.

A. *Understanding Network Management*

Most users access the Internet by paying monthly access fees to an ISP. ISPs then grant customers access to their high-speed Internet service. Most high-speed Internet services consist of a shared network, meaning that customers “share upstream and downstream bandwidth with their

neighbors.”¹² Comcast’s Internet service is structured in this way. The shared nature of these networks makes them vulnerable to congestion during periods of peak demand; the network’s capacity is limited.¹³ Because different Internet activities require varying amounts of bandwidth, congestion can also occur during off-peak times if customers place “disproportionate demands on network resources” by engaging in activities that require large amounts of bandwidth.¹⁴ When congestion occurs, the Internet experience for all subscribers connected to the same “Optical Node” is degraded.¹⁵

In an age when demand for high-speed Internet service is growing at an exponential rate,¹⁶ ISPs are constantly exploring cost-effective ways to minimize congestion and accommodate increasing demand on existing networks. One of the primary ways that ISPs address these issues is by “managing” Internet traffic.¹⁷ As a result, most ISPs employ some form of network management practice. These practices are designed to avoid effects of network congestion by scaling back the bandwidth of certain users when overall network demand is high. This highly technical practice is most easily explained by analogy to highway traffic. Network congestion occurs when four or more cars attempt to drive side by side on a three-lane highway. Instead of slowing down all four cars, ISPs seek to design network management practices that slow down only *one* car—usually the *largest* car—so that the three other cars can continue uninterrupted, ensuring that no more than three cars are driving side by side at any given time. This practice is commonly referred to as “throttling traffic.”¹⁸ Sticking with the analogy, Comcast designed its former network management practices to target and throttle *specific* larger cars—makes and models that Comcast determined were particularly culpable in causing network traffic problems. It turns out that Comcast went so far as to slow targeted cars even when there were *no* other cars on the road.¹⁹ As this

12. Letter from Kathryn A. Zchem, Vice President of Regulatory Affairs, Comcast Corp., to Marlene H. Dortch, Sec’y, FCC, Attachment A (Sept. 19, 2008), available at http://downloads.comcast.net/docs/Attachment_A_Current_Practices.pdf [hereinafter Comcast’s Former Practices].

13. *Id.*

14. *Id.*

15. Each of Comcast subscribers’ cable modems are linked to an Optical Node. Multiple Optical Nodes are connected to Cable Modem Termination Systems (CMTSes) or “data nodes.” Multiple CMTSes share a connection to high-level routers which are finally connected to Comcast’s “Internet backbone facilities.” *Id.* at 2.

16. See U.S. Census Bureau, *supra* note 1.

17. *FCC Order, supra* note 5, at para. 47. Because most ISP networks are unique, management techniques vary from provider to provider. *Id.* at para. 31.

18. See *e.g., id.* at para. 6.

19. See *infra* Part II.C.1.

discussion illustrates, such practices can implicate important social policies that have encouraged both Congress and the FCC to take measures to prevent the open and competitive nature of the Internet.

B. *Precursors to the Regulation of Network Management Practices*

Section 230(b) of the Communications Act of 1934 sets forth Congress's national Internet policy.²⁰ That section states that it is the policy of the United States "to preserve the vibrant and competitive free market that presently exists for the Internet" and "to promote the continued development of the Internet."²¹ Congress enacted these policies in recognition of the fact that the Internet "represent[s] an extraordinary advance in the availability of educational and informational resources" and is "a forum for a true diversity of political discourse, unique opportunities for cultural development, and myriad avenues for intellectual activity."²² Citing these congressional policies, and claiming authority under Section 706(a) of the Communications Act of 1934,²³ the FCC took its first step toward regulating the Internet in 2005 when it issued its *Internet Policy Statement*.²⁴ In that statement, the FCC adopted the following four Internet principles:

To encourage broadband deployment and preserve and promote the open and interconnected nature of the public Internet,

[1] Consumers are entitled to access the lawful Internet content of their choice.

[2] Consumers are entitled to run applications and use services of their choice, subject to the needs of law enforcement.

[3] Consumers are entitled to connect their choice of legal devices that do not harm the network.

[4] Consumers are entitled to competition among network providers, application and service providers, and content providers.²⁵

The FCC qualified these principles, however, stating that the purpose of its *Internet Policy Statement* was not to adopt rules and that each principle was subject to "reasonable network management."²⁶

Shortly after adopting these principles, the FCC clarified its new

20. See *Appropriate Framework for Broadband Access to the Internet over Wireline Facilities*, *Policy Statement*, 20 F.C.C.R. 14986, para. 4 (2005) [hereinafter *Internet Policy Statement*].

21. 47 U.S.C. § 230(b)(1)-(2) (2006).

22. *Id.* § 230(a).

23. In its *Internet Policy Statement*, the FCC bases its authority on Section 706(a), stating that it "charges the Commission with 'encourag[ing] the deployment on a reasonable and timely basis of advanced telecommunications capability'—broadband—to all Americans." *Internet Policy Statement*, *supra* note 20, at para 2.

24. *Id.*

25. *Id.*

26. *Id.* at para. 5 n.15.

position regarding the Internet, warning that “[i]f in the future evidence arises that any company is willfully blocking or degrading Internet content, affected parties may file a complaint with the Commission.”²⁷ It was statements such as these that likely led to increased scrutiny over the ways in which ISPs regulated their networks. It was not long after the adoption of these principles that the FCC followed through on its promise.

C. *The FCC Condemns Comcast’s Network Management Practices*

Shortly after the FCC adopted its *Internet Policy Statement*, questions arose as to how Comcast was regulating its bandwidth. When the true nature of its network management practices finally surfaced, Comcast found itself facing significant political and legal challenges.²⁸ On November 1, 2007, Free Press, an Internet watchdog, filed a complaint against Comcast, requesting that the FCC declare “that an Internet service provider violates the [Commission’s] *Internet Policy Statement* when it intentionally degrades a targeted Internet application.”²⁹ Free Press also filed a petition³⁰ for a declaratory ruling requesting that the FCC “clarify that an [ISP] violates the FCC’s *Internet Policy Statement* when it intentionally degrades a targeted Internet application.”³¹ Another watchdog, Vuze, filed a petition of its own, requesting that the FCC “adopt reasonable rules that would prevent the network operators from engaging in practices that discriminate against particular Internet applications, content or technologies.”³² More than 20,000 Americans supported Free Press’s and Vuze’s demands for redress against Comcast by themselves requesting that the FCC take immediate action against “Comcast’s blatant and deceptive blocking of peer-to-peer [P2P] communications.”³³

1. Comcast’s Former Network Management Practices

At the time Free Press filed its complaint, Comcast’s network management practices addressed the disproportionate burden placed on its network by targeting certain high-bandwidth applications—particularly

27. *FCC Order*, *supra* note 5, at para. 35 (quoting Applications for Consent to the Assignment and/or Transfer of Control of Licenses, *Memorandum Opinion and Order*, 21 F.C.C.R. 8203, para. 220 (2006)) (internal quotation marks omitted).

28. See Saul Hansell, *F.C.C. Chief Would Bar Comcast from Imposing Web Restrictions*, N.Y. TIMES, July 12, 2008, at C1, C5, available at <http://www.nytimes.com/2008/07/12/technology/12comcast.html>.

29. *FCC Order*, *supra* note 5, at para. 10 (emphasis added).

30. See Petition of Free Press et al., *Petition for Declaratory Ruling*, WC Dkt. No. 07-52 (filed Nov. 1, 2007), available at www.freepress.net/files/fp_et_al_nn_declaratory_ruling.pdf.

31. *Id.* at i (emphasis added).

32. *FCC Order*, *supra* note 5, at para. 11 (internal quotation marks omitted).

33. *Id.* at para. 10 (internal quotation marks omitted).

P2P protocols. Comcast stated that it adopted such an approach because “in [its] experience . . . , the primary cause of congestion . . . has been the high-volume consumption of bandwidth associated [with such protocols].”³⁴ When Comcast determined that certain applications overly burdened its network, it added that software to a list of managed protocols.³⁵ As of 1997, Comcast had designated five P2P protocols for management: Ares, BitTorrent, eDonkey, FastTrack, and Gnutella.³⁶

To manage these protocols, Comcast claimed that it established “thresholds”³⁷—the maximum number of unidirectional uploads it would allow for each protocol in a geographic area.³⁸ When the threshold for a particular protocol was reached, Comcast’s network management system delayed and, in some cases, permanently blocked the initiation of new uploads for that protocol until the number of uploads returned to normal levels.³⁹ Perhaps more controversial was the way that Comcast “delayed” the upload sessions for protocols on its “list.” In such circumstances, when a Comcast customer’s computer established a “TCP connection”⁴⁰ with another computer, in attempting a P2P upload, Comcast would issue a “reset packet” or “RST packet,”⁴¹ which would effectively interrupt the upload, sometimes permanently.⁴² Because most P2P applications require a reliable and continuous connection, RST packets are most commonly sent by and between computers involved in a TCP connection when the

34. Comcast’s Former Practices, *supra* note 12, at 1.

35. *Id.* at 8.

36. *Id.* Interestingly, each of these applications competes with Comcast’s video-on-demand (VOD) service. See *FCC Order*, *supra* note 5, at para. 5.

37. Comcast’s Former Practices, *supra* note 12, at 4. “The thresholds for each protocol [varied] depending upon a number of factors . . . , including how the particular protocol operates and the burden that the particular protocol was determined to place on [Comcast’s] upstream bandwidth.” *Id.*

38. *Id.*

39. *Id.*

40. “TCP” refers to the Transmission Control Protocol, a type of connection that is usually established between the user’s computer and a server or another person’s computer when “an Internet user opens a webpage, sends an email, or shares a document with a colleague.” *FCC Order*, *supra* note 5, at para. 3. The success of the BitTorrent and other P2P applications is dependent on continuous and reliable TCP connections. See *id.* at paras. 3-4.

41. Because certain applications using a TCP connection will only work properly if the connection is uninterrupted, the computers involved in the connection are programmed to monitor the quality of the connection. “If either computer detects that ‘something seriously wrong has happened within the network,’ it sends a ‘reset packet’ or ‘RST packet’ to the other, signaling that the current connection should be terminated and a new connection established ‘if reliable communication is to continue.’” *Id.* at para. 3 (quoting Letter from Jack Zinman, Gen. Attorney, AT&T Servs., Inc., to Marlene H. Dortch, Sec’y, FCC, Attachment at 2 (Apr. 25, 2008)).

42. *Id.* at paras. 8-9.

connection is unreliable and should be terminated.⁴³ By falsifying these RST packets, Comcast was tricking the computers involved in the TCP connection into terminating the connection.⁴⁴ Both Comcast customers and their computers were falsely led to believe that the connection was unreliable.⁴⁵ Furthermore, because reset packets were issued by equipment installed adjacent to Cable Modem Termination Systems (CMTSes),⁴⁶ this network management practice affected customers across relatively large geographical areas—large cities as opposed to small neighborhoods, for example—which could have been avoided had the equipment been installed next to the more common Optical Nodes.⁴⁷

Adding to the discriminatory way that it managed its network, Comcast, like most ISPs,⁴⁸ had opted not to disclose the nature of its management practices.⁴⁹ However, when customers began to experience significant performance problems with Comcast broadband connections, specifically when using certain P2P applications, questions arose as to how Comcast was managing its Internet traffic.⁵⁰ When first questioned about its management methods, Comcast denied throttling any traffic, maintaining that its “policy was to ‘pro-actively contact’ those customers using what Comcast deemed to be excessive bandwidth ‘via phone to work with them and address the issue or help them select a more appropriate commercial-grade Comcast product.’”⁵¹ Not satisfied with Comcast’s explanation, the Associated Press (AP) and the Electronic Frontier Foundation (EFF) conducted independent tests to investigate the allegations⁵² and concluded that their suspicions were accurate—Comcast was selectively targeting customers who used certain P2P protocols.⁵³

Then, when Comcast finally admitted that that it targeted these five protocols, it insisted that it only did so when the network became congested.⁵⁴ However, around the same time, a Comcast official admitted that its “P2P management is triggered . . . *regardless of the level of overall network traffic at that time*, and regardless of the time of day.”⁵⁵ Therefore,

43. *See id.* at para. 3.

44. *See id.* at para. 8.

45. *See id.* at paras. 3, 8.

46. *See supra* note 15 and accompanying text.

47. *FCC Order, supra* note 5, at para. 48 (finding that, by managing its network over a wider geographic area, Comcast’s technique was over-inclusive).

48. *See Metz, supra* note 2.

49. *FCC Order, supra* note 5, at para. 1.

50. *Id.* at para. 6.

51. *Id.*

52. *Id.* at paras. 7-8.

53. *Id.*

54. *See Comcast’s Former Practices, supra* note 12, at 3-4.

55. Letter from Kathryn A. Zachem, Vice President of Regulatory Affairs, Comcast

Comcast was not managing congestion at all; it was singling out certain protocols for disparate treatment. So, not only did Comcast fail to disclose its practices, it made every effort to cover them up.

In what was perhaps the final blow to Comcast customers' trust—following the publication of the AP's and EFF's test results—Comcast admitted, contrary to its previous disclosures, that it did in fact target P2P traffic.⁵⁶ However, Comcast insisted that it did so only when “upload sessions . . . reach a pre-determined congestion threshold in a particular neighborhood.”⁵⁷ Ultimately, through a series of public concessions, Comcast disclosed the nature of its true management method, confirming that its previous statements had not been entirely forthcoming.⁵⁸

2. The FCC's Analysis of Comcast's Practices

The threshold question in the FCC's analysis was whether Comcast's network management practices implicated the federal Internet principles⁵⁹ that it had adopted in its *Internet Policy Statement*.⁶⁰ Ultimately, the FCC concluded that Comcast's network management practices were “discriminatory and arbitrary” and “unduly squelche[d] the dynamic benefits of an open and accessible Internet.”⁶¹ Comcast's practices implicated three of the FCC's four principles. Specifically, Comcast's practices (1) limited consumers' ability “to access the lawful Internet content of their choice” (the first principle); (2) impeded consumers from

Corp., to Marlene H. Dortch, Sec'y, FCC 5 (July 10, 2008) (emphasis added) (quoted in *FCC Order, supra* note 5, at para. 9).

56. *Id.* at para. 9.

57. See Comments of Comcast Corp., Broadband Industry Practices, FCC WC Docket No. 07-52, 27 (rel. Feb. 12, 2008), available at <http://fjallfoss.fcc.gov/ecfs/document/view?id=6519840991>.

58. *Id.*

59. *FCC Order, supra* note 5, at para. 43.

Recognizing the Internet's dynamic potential, Congress set forth the federal policies of “promot[ing] the continued development of the Internet” and of “encourag[ing] the development of technologies [that] maximize user control over what information is received by individuals . . . who use the Internet” as part of the Telecommunications Act of 1996.

Id. at para. 12 (citing 47 U.S.C. § 230 (2006)). To enforce these policies, Congress has deferred to the FCC. *Internet Policy Statement, supra* note 20, at para. 2. In 2005, the Supreme Court confirmed the FCC's jurisdiction and unrestricted ability “to impose additional regulatory obligations” on ISPs. *Nat'l Cable & Telecomm. Ass'n v. Brand X Internet Serv's*, 545 U.S. 967, 976 (2005) (“the [FCC] has jurisdiction to impose additional regulatory obligations under its Title I ancillary jurisdiction to regulate interstate and foreign communications, see §§ 151–161”). With an apparent endorsement from Congress and the Supreme Court in hand, the FCC pledged that it would regulate the Internet. *Internet Policy Statement, supra* note 20, at para. 4.

60. *Internet Policy Statement, supra* note 20.

61. *FCC Order, supra* note 5, at para. 1.

running “applications of their choice,” but not those favored by Comcast (the second principle); and (3) discouraged the “development of technologies” by impeding consumers from “run[ning] applications . . . of their choice” (the fourth principle).⁶²

Despite these findings, Comcast maintained that its network management practices did not violate federal Internet policy because they constituted “reasonable network management.”⁶³ To establish reasonableness, the FCC required that Comcast’s “justification for its practice[s] . . . clear a high threshold,” namely, that Comcast’s practice “should further a critically important interest and be narrowly or carefully tailored to serve that interest.”⁶⁴ The result was not good for Comcast. The FCC determined that Comcast’s practices were both over- and under-inclusive.⁶⁵ Its practices were over-inclusive because (1) they affected customers using little bandwidth “simply because they [were] using a disfavored application,” (2) they were employed regardless of congestion levels at the time, and (3) Comcast deployed its management equipment a few steps further upstream than was possible—exposing more customers to throttling than was necessary.⁶⁶ Conversely, Comcast’s practices were under-inclusive because a “customer [could] use an extraordinary amount of bandwidth during periods of network congestion,” free from network management, “so long as he [did] not utilize a disfavored application.”⁶⁷

Furthermore, the FCC concluded that Comcast’s practices were *presumptively* unreasonable because Comcast had failed to disclose its practices.⁶⁸ The FCC then set forth a requirement that customer disclosure be made “in a manner that customers of ordinary intelligence would reasonably understand.”⁶⁹ This additional requirement, the FCC argued, would “enhance the ‘vibrant and competitive free market . . . for the Internet and interactive computer services’ by allowing consumers to compare and contrast competing providers’ practices.”⁷⁰

62. *Id.* at para. 43 (internal quotation marks omitted).

63. *Id.* at para. 45.

64. *Id.* at para. 47. The FCC did not decide whether “easing network congestion” is a critically important interest. *Id.* at 48.

65. *Id.*

66. *Id.*

67. *Id.*

68. *Id.* at para. 53 (stating that “[a] hallmark of whether something is reasonable is whether a provider is willing to disclose to its customers what it is doing”). Despite this statement, the FCC refrained from adopting “general disclosure requirements for the network management practices of providers of broadband Internet access services.” *Id.* at para. 52.

69. *Id.*

70. *Id.* at para. 52 (internal quotation marks omitted).

3. Post-Order Fallout for Comcast and Other ISPs

Concluding that Comcast's network management practices ran afoul of its Internet principles, the FCC required that Comcast

(1) disclose to the Commission the precise contours of the network management practices at issue here, including what equipment has been utilized, when it began to be employed, when and under what circumstances it has been used, how it has been configured, what protocols have been affected, and where it has been deployed;

(2) submit a compliance plan to the Commission with interim benchmarks that describes how it intends to transition from discriminatory to nondiscriminatory network management practices by the end of the year; and

(3) disclose to the Commission and the public the details of the network management practices that it intends to deploy following the termination of its current practices, including the thresholds that will trigger any limits on customers' access to bandwidth.⁷¹

The FCC gave Comcast thirty days to comply with these disclosure requirements.⁷² Pursuant to the compliance requirements set forth by the FCC in its *Order*, Comcast adopted a new network management practice that, on its face, appeared far less objectionable than its former practices.⁷³

This was great news for consumers who value the open and competitive nature of the Internet—characteristics that have enabled the Internet to become a vital tool and valuable resource in the daily lives of hundreds of millions of people around the globe. On the other hand, the *FCC Order* represented a major change of scenery for many of the United States' largest ISPs, who found themselves in uncharted waters.

D. Comcast's Response to the FCC Order

Despite filing an appeal with the D.C. Circuit challenging the FCC's authority to enforce its network neutrality rules,⁷⁴ Comcast assured the FCC that it would nonetheless comply with the *Order* by deploying a new network management plan built around a protocol-agnostic approach that "does not manage congestion based on the protocol or application a consumer uses," an excessive usage threshold, and full consumer disclosure.⁷⁵ On August 28, 2008, Comcast disclosed that it would be

71. *Id.* at para. 54.

72. *Id.* at para. 55.

73. *See infra* Part III.B.

74. *See e.g.*, Posting of Sam Gustin to Daily Finance, <http://www.dailyfinance.com/2009/10/05/comcast-suit-over-fccs-net-neutrality-smackdown-heats-up/> (Oct. 5, 2009, 21:30 EST).

75. Lynn Stanton, *Comcast Reveals Thresholds for Triggering 'Protocol-Agnostic' Traffic Management Approach*, TELECOMM. REP., Oct. 1, 2008, at 47.

implementing a monthly 250 gigabyte (GB) “bandwidth threshold.”⁷⁶ On September 19, 2008, Comcast submitted to the FCC a detailed description of its then-discriminatory network management practices⁷⁷ and its forthcoming “protocol-agnostic” approach.⁷⁸ Then, in a January 5, 2009, letter to the FCC, Comcast confirmed that it had fully implemented its new protocol-agnostic network management practice in compliance with the *FCC Order*.⁷⁹

E. *The D.C. Circuit Vacates the FCC Order*

Over two years after Comcast had fully implemented its new network management practices, in a decision dated April 6, 2010, the U.S. Court of Appeals for the D.C. Circuit vacated the *FCC Order*.⁸⁰ This was a major setback for the FCC in its efforts to regulate the Internet. In its decision, the D.C. Circuit addressed neither the framework that the FCC employed in its *Order* nor the outcome. Rather, it narrowly addressed whether the FCC “ha[d] [statutory] authority to regulate [Comcast’s] network management practices.”⁸¹

To determine whether the FCC’s foray into Internet regulation was lawful, the court addressed whether Congress had, in fact, provided the FCC with the requisite authority.⁸² Recognizing that the FCC has “no express statutory authority” to regulate ISP network management practices—a conclusion that the FCC itself implicitly acknowledged by not arguing it on appeal,⁸³ the D.C. Circuit focused its attention on whether the FCC had “ancillary authority” pursuant to Section 4(i) of the Communications Act of 1934.⁸⁴ That Section “authorizes 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

76. Comcast.net Terms of Service, Announcement Regarding an Amendment to Our Acceptable Use Policy, <http://www.comcast.net/terms/network/amendment/> (last visited Apr. 13, 2010) [hereinafter Comcast’s Acceptable Use Policy].

77. Comcast’s Former Practices, *supra* note 12.

78. Letter from Kathryn A. Zachem, Vice President of Regulatory Affairs, Comcast Corp., to Marlene H. Dortch, Sec’y, FCC, Attachment B (Sept. 19, 2008), available at http://downloads.comcast.net/docs/Attachment_B_Future_Practices.pdf [hereinafter Comcast’s New Practices].

79. See Letter from Kathryn A. Zachem, Vice President of Regulatory Affairs, Comcast Corp., to Marlene H. Dortch, Sec’y, FCC (Jan. 5, 2009), available at <http://downloads.comcast.net/docs/comcast-nm-transition-notification.pdf>.

80. Comcast Corp. v. FCC, No. 08-1291 (D.C. Cir. Apr. 6, 2010).

81. *Id.* slip op. at 2.

82. *Id.*

83. See *id.* slip op. at 1.

84. *Id.* slip op. at 3.

execution of its functions.”⁸⁵ As the D.C. Circuit held in an earlier case, the FCC “may exercise this ‘ancillary’ authority only if it demonstrates that its action . . . is ‘reasonably ancillary to the . . . effective performance of its statutorily mandated responsibilities.’”⁸⁶ Pursuant to the Communications Act, these “statutorily mandated responsibilities” include the following: “express and expansive authority to regulate [1] common carrier services, including landline telephony,” under Title II, [2] “radio transmissions, including broadcast television, radio, and cellular telephony,” under Title III, and [3] “cable services, including cable television,” under Title VI.⁸⁷

The D.C. Circuit employed the two-part test that it had adopted in *American Library Association v. FCC*⁸⁸ to determine whether the FCC had ancillary jurisdiction to regulate Comcast’s network management practices.⁸⁹ Under that test, “[t]he Commission . . . may exercise ancillary jurisdiction only when two conditions are satisfied: (1) the Commission’s general jurisdictional grant under Title I [of the Communications Act] covers the regulated subject and (2) the regulations are reasonably ancillary to the Commission’s effective performance of its statutorily mandated responsibilities.”⁹⁰ Because Comcast had conceded the first element, the second element became the dispositive issue.⁹¹

85. *Id.* slip op. at 2-3 (citing 47 U.S.C. § 154(i) (2006)).

86. *Id.* slip op. at 3 (citing *Am. Library Ass’n v. FCC*, 406 F.3d 689, 692 (D.C. Cir. 2005)).

87. *Id.* slip op. at 5 (internal citations omitted).

88. 406 F.3d 689 (D.C. Cir. 2005).

89. *Comcast Corp. v. FCC*, No. 08-1291, slip op. at 7 (D.C. Cir. Apr. 6, 2010).

90. *Id.* slip op. at 7 (citing *American Library Ass’n*, 406 F.3d at 691-92) (internal quotation marks omitted).

91. *Id.* slip op. at 8. The FCC advanced two threshold arguments in addition to numerous other arguments. *See generally id.* It first argued that Comcast should be estopped from challenging the FCC’s jurisdiction over its network management practices because Comcast had taken a contrary position in a California lawsuit. *Id.* The court dismissed this argument, finding that Comcast’s California argument was not “clearly inconsistent” with the argument it presented on appeal. *Id.* slip op. at 8-12. The second threshold argument was that “the Supreme Court’s decision in *Brand X* ‘already decided the jurisdictional question’” presented in Comcast’s appeal. *Id.* slip op. at 12 (citing *Nat’l Cable & Telecomms. Ass’n v. Brand X Internet Servs.*, 545 U.S. 967, 978 (2005)). In *Brand X*, the Court reviewed an FCC *Declaratory Ruling* “which removed cable Internet service from Title II and Title VI oversight by classifying it as an “information service.” *Id.* slip op. at 12. When reviewing the challenge to the FCC’s action, the Supreme Court ultimately held that, although cable Internet service does contain a telecommunications component, “the Commission remains free to impose special regulatory duties on [cable Internet providers] under its Title I ancillary jurisdiction.” *Id.* slip op. at 13 (internal quotation marks omitted). These determinations placed cable Internet providers under Title I jurisdiction. *Id.* The D.C. Circuit held that *Brand X* had not abandoned the “fundamental approach to ancillary authority set forth in [prior case law].” *Id.* slip op. at 16. Refusing to deviate from this case law, the D.C. Circuit insisted that the FCC’s jurisdiction over Comcast’s network management practices must be “independently justified as reasonably ancillary” to the FCC’s express jurisdiction under Title I of the Act. *Id.* slip op. at 15 (emphasis omitted).

In support of its claim that the second element was satisfied, the FCC cited a number of provisions within the Communications Act.⁹² The first category of provisions consisted of, as Comcast labeled them, “statements of policy.”⁹³ Comcast argued that because such policy statements “are not an operative part of the statute, and do not enlarge or confer powers on administrative agencies. . . . [they] fail to set forth statutorily mandated responsibilities.”⁹⁴ The D.C. Circuit agreed, noting that “[a]lthough policy statements may illuminate [ancillary] authority, it is Title II, III, or VI to which the authority must ultimately be ancillary.”⁹⁵ Ultimately, the D.C. Circuit found “‘no relationship whatever’ . . . between the *Order* and services subject to Commission regulation.”⁹⁶

Unlike the first category, the second category of provisions, upon which the FCC relied in defending the appeal, “could at least arguably be read to delegate regulatory authority to the Commission.”⁹⁷ The first is Section 706 of the Telecommunications Act of 1996.⁹⁸ That Section provides that the Commission “shall encourage the deployment on a reasonable and timely basis of advanced telecommunications capability to all Americans . . . by utilizing . . . price cap regulation, regulatory forbearance, measures that promote competition in the local telecommunications market, or other regulating methods that remove barriers to infrastructure investment.”⁹⁹ Although this Section provides a direct mandate, the D.C. Circuit determined that the FCC was bound by “an earlier, still-binding order, [in which] the Commission ruled that section 706 ‘does not constitute an independent grant of authority.’”¹⁰⁰ In fact, the court knocked down every other section of the Communications Act—

92. *Id.* slip op. at 17.

93. *Id.* (internal quotation marks omitted).

94. *Id.* slip op. at 18 (internal quotation marks omitted).

95. *Id.* slip op. at 22. It is this language, specifically, which injects some irony into the situation. In fact, it is the FCC that is responsible for the 2002 *Order* which removed cable Internet providers from Title II and VI jurisdiction. *See supra* note 84.

96. Comcast Corp. v. FCC, No. 08-1291, slip op. at 23 (D.C. Cir. Apr. 6, 2010) (internal citations omitted).

97. *Id.* slip op. at 30.

98. *Id.*

99. *Id.*

100. *Id.* (citing *In re Deployment of Wireline Servs. Offering Advanced Telecomm. Capability, Order on Reconsideration*, 13 F.C.C.R. 20,012, para 77 (1998)).

Sections 256,¹⁰¹ 257,¹⁰² 201,¹⁰³ and 623¹⁰⁴—to which the FCC attempted to tie its ancillary authority to regulate network management practices.¹⁰⁵

Finding that the FCC had “failed to tie its assertion of ancillary authority over Comcast’s Internet service to any statutorily mandated responsibility,” the D.C. Circuit vacated the *FCC Order*.¹⁰⁶

F. *Comcast and the FCC Respond to the D.C. Circuit Decision*

The D.C. Circuit’s decision, which had been pending for over a year, garnered significant and widespread response from the parties involved—both Comcast and the FCC issued press releases addressing the opinion. Comcast issued the following statement:

We are gratified by the Court’s decision today to vacate the previous FCC’s order. Our primary goal was always to clear our name and reputation. We have always been focused on serving our customers

101. Section 256 directs the FCC to “establish procedures for . . . oversight of coordinated network planning . . . for the effective and efficient interconnection of public telecommunications networks.” 47 U.S.C. § 256(b)(1) (2006). The D.C. Circuit deflected this argument by pointing to additional language in that section, which states that “[n]othing in this section shall be construed as expanding . . . any authority that the commission [otherwise has under law].” *Comcast Corp. v. FCC*, No. 08-1291, slip op. at 32 (D.C. Cir. Apr. 6, 2010) (citing 47 U.S.C. § 256(c) (2006)).

102. Section 257 gave the FCC fifteen months to “complete a proceeding for the purpose of identifying and eliminating, by regulations pursuant to its authority under this chapter (other than this section), market entry barriers for entrepreneurs and other small businesses in the provision and ownership of telecommunications services and information services.” 47 U.S.C. § 257(a) (2006). While the FCC has completed this proceeding, the FCC is still required “to report to Congress every three years on any remaining barriers.” *Comcast Corp.*, No. 08-1291, slip op. at 32. The D.C. Circuit disagreed, stating that “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 ‘ancillarity.’” *Id.* slip op. at 33.

103. Section 201 provides that “[a]ll charges, practices, classifications, and regulations for and in connection with [common carrier] service shall be just and reasonable.” 47 U.S.C. § 201(b) (2006). The FCC cited this Section in support of its jurisdiction in the original *FCC Order*. It claimed that “by blocking certain traffic on Comcast’s Internet service, the company had effectively shifted the burden of that traffic to other service providers,” thereby increasing their variable costs. *Comcast Corp.*, No. 08-1291, slip op. at 33 (citing *FCC Order*, *supra* note 5, at para. 17). The FCC claimed jurisdiction on the basis that some of those providers were “operating their Internet access services on a common carrier basis subject to Title II.” *Id.* slip op. at 32 (citing *FCC Order*, *supra* note 5, at para. 17). However, on appeal, the FCC presented its section 201 argument under the guise of Voice-over-Internet Protocol (VoIP) services. *Id.* slip op. at 34. The D.C. Circuit refused to consider the merits of either argument because it found that the FCC (1) had waived the first argument by not presenting it on appeal and (2) could not rely upon the second argument because it “must defend its action on the same grounds advanced in the *Order*.” *Id.* slip op. at 33-34.

104. For an in-depth discussion of Section 623’s applicability in this context, see *Comcast Corp.*, No. 08-1291, slip op. at 34-35.

105. See *id.* slip op. at 30-35.

106. *Id.* slip op. at 36 (internal quotation marks omitted).

and delivering the quality open-Internet experience consumers want. Comcast remains committed to the FCC's existing open Internet principles, and we will continue to work constructively with this FCC as it determines how best to increase broadband adoption and preserve an open and vibrant Internet.¹⁰⁷

Whether Comcast will continue to adhere to its post-*FCC Order* network management practices (i.e., current practices) is unclear. However, Comcast's commitment to those practices is somewhat misleading because, as Part III of this Note argues, Comcast was never actually in compliance with the *FCC Order*.¹⁰⁸

The same day, the FCC also responded by issuing a number of press releases. The statement issued on behalf of the entire FCC stated, among other things, that

[t]he FCC is firmly committed to promoting an open Internet and to policies that will bring the enormous benefits of broadband to all Americans. It will rest these policies--all of which will be designed to foster innovation and investment while protecting and empowering consumers--on a solid legal foundation.¹⁰⁹

It also acknowledged that the D.C. Circuit's decision did not "close the door to other methods for achieving" an open Internet.¹¹⁰ A statement issued by Commissioner Michael Copps provided a more detailed response and suggested possible FCC responses to the D.C. Circuit's opinion:

Since 2002, I have warned about the dangers of moving the transmission component of broadband outside of the statutory framework that applies to telecommunications carriers. The only way the Commission can make lemonade out of this lemon of a decision is to do now what should have been done years ago: treat broadband as the telecommunications service that it is. . . .

It is time that we stop doing the "ancillary authority" dance and instead rely on the statute Congress gave us to stand on solid legal ground in safeguarding the benefits of the Internet for American consumers. We should straighten this broadband classification mess out before the first day of summer.¹¹¹

Commissioner Clyburn added that the decision gives the FCC "the kind of guidance that will enable [it] to develop the most effective and legally

107. Press Release, Comcast, Comcast Statement on U.S. Court of Appeals Decision on Comcast v. FCC, Apr. 6, 2010, available at <http://www.comcast.com/About/PressRelease/PressReleaseDetail.aspx?PRID=984> (internal quotation marks omitted).

108. See *supra* Part III.B

109. Press Release, FCC, FCC Statement on Comcast v. FCC Decision, Apr. 6, 2010, available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-297355A1.pdf.

110. *Id.*

111. Press Release, FCC, Statement of Commissioner Michael J. Copps on the Comcast v. FCC Decision, Apr. 6, 2010, available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-297368A1.pdf [hereinafter Statement of Commissioner Copps].

sound rules of the road to preserve Internet openness”¹¹²

What is apparent from these statements is the FCC’s commitment to preserving and advancing the openness of the Internet. How it continues to pursue this goal—and how, if at all, it plans to regulate network management practices in the future—is unclear.¹¹³ However, if the statements by Commissioners Copps and Clyburn are any indication, the battle is not over yet. Nor should it be.

III. WHAT NEXT? JURISDICTION AND BEYOND

Following the D.C. Circuit’s decision, speculation about how the FCC would rebound from this setback began to spread.¹¹⁴ Part III.A explores the various routes that the FCC could take to “reestablish” jurisdiction over network management practices. However, while the FCC must focus on jurisdiction, it is only the first step that the FCC must take to get back on track. As Comcast’s failure to comply with the requirements set forth in the *FCC Order* demonstrate, the second step is designing, implementing, and enforcing Internet regulation that will *require* strict compliance with Internet principles. To emphasize this second point, Part III.B discusses the lingering network management regulation problems that the FCC must face, even after the jurisdictional issue is resolved.

A. *Securing Jurisdiction over Network Management Practices*

There are a variety of ways that the FCC can “reestablish” jurisdiction over cable Internet providers such as Comcast. Perhaps the most obvious option procedurally would be to appeal to the Supreme Court. There are a number of reasons to believe that this option would prove unsuccessful, however. First, the FCC has given no clear indication of its plan to appeal the D.C. Circuit’s decision. Even if it had (or does in the future), and the Supreme Court actually grants certiorari (which is also not a given), it is hard to envision a different outcome. Notably, the D.C. Circuit’s unanimous decision was written by Judge David S. Tatel, one of the court’s more liberal members.¹¹⁵ On that basis alone, it is hard to believe that the right-leaning Supreme Court would come to a different conclusion, especially with respect to such a narrow decision.

Another potential source of jurisdiction is Congress itself. In fact, the

112. Press Release, FCC, Statement of Commissioner Mignon Clyburn Regarding the D.C. Circuit’s Decision in *Comcast v. FCC*, Apr. 6, 2010, available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-297365A1.pdf.

113. Many of the possible courses of action will be discussed in Part IV.

114. See Edward Wyatt, *U.S. Court Curbs F.C.C. Authority on Web Traffic*, N.Y. TIMES, Apr. 6, 2010, available at <http://www.nytimes.com/2010/04/07/technology/07net.html>.

115. *Id.*

D.C. Circuit's decision may have been exactly what the FCC needed in order to get Congress to delegate explicit authority to the FCC to regulate network management practices.¹¹⁶

A third option, implied in the D.C. Circuit's decision¹¹⁷ and alluded to by Commissioner Copps,¹¹⁸ would be to reclassify¹¹⁹ broadband service so that it falls within the explicit regulatory authority afforded the FCC under Titles II and VI of the Communications Act.¹²⁰ This option is perhaps the most realistic because it requires the least amount of cooperation from outside entities (Congress or the Supreme Court). As the Supreme Court noted in *National Cable & Telecommunications Association v. Brand X Internet Services*, there is a "presumption that Congress, when it left ambiguity in a statute for implementation by an agency, understood that the ambiguity would be resolved first and foremost, by the agency, and desired the agency (rather than the courts) to possess whatever degree of discretion the ambiguity allows."¹²¹ In *Brand X*, the Court was asked to determine whether the FCC's resolution of a statutory ambiguity—the definition of "telecommunications service"—that it set forth in its 2002 *Declaratory Ruling* was a permissible reading of the Communications Act.¹²² Under the two-part framework established in *Chevron*, the Court first asked "whether the statute's plain terms 'directly address[s] the precise question at issue.'"¹²³ Then, "[i]f the statute is ambiguous on the point, [the Court] defer[s] at step two to the agency's interpretation so long as the construction is 'a reasonable policy choice for the agency to make.'"¹²⁴ The Court concluded that the FCC's interpretation was permissible at both steps.¹²⁵ It also noted that "*the Commission is free within the limits of reasoned interpretation to change course if it adequately justifies the*

116. See *id.* (noting that this could "prove difficult politically . . . since some conservative Republicans philosophically oppose giving the agency more power, on the grounds that Internet providers should be able to decide what services they offer and at what price").

117. Comcast Corp. v. FCC, No. 08-1291, slip op. at 12-13 (D.C. Cir. April 6, 2010).

118. See Statement of Commissioner Copps, *supra* note 111.

119. In fact, the FCC single-handedly removed broadband service from the ambit of its explicit regulatory authority when it classified cable modem service as an "information service," rather than a "telecommunications service" under the Communications Act. See *In re High-Speed Access to the Internet over Cable and Other Facil's, Declaratory Ruling and Notice of Proposed Rulemaking*, 17 F.C.C.R. 4798, at para. 7 (2002), *aff'd*, Nat'l Cable & Telecomms. Ass'n v. Brand X Internet Servs., 545 U.S. 967 (2005).

120. See, e.g., Wyatt, *supra* note 114.

121. *Brand X*, 545 U.S. at 982.

122. *Id.* at 986-87.

123. *Id.* at 987 (citing *Chevron U.S.A. Inc. v. Natural Resources Defense Council, Inc.*, 467 U.S. 837 (1984)).

124. *Id.*

125. *Id.*

change.”¹²⁶ Therefore, in order to reclassify cable Internet service so that it falls within the FCC’s explicit authority under the Communications Act, the FCC will have to provide adequate justification for the change. Pointing to the discriminatory way in which Comcast managed its network and the impact that such behavior has had on the competitive and open nature of the Internet, as well as other ISPs, may provide such justification.

As this Section illustrates, there are a variety of possible alternatives the FCC could pursue to secure jurisdiction in this area. Only time will tell which, if any, will succeed.

B. Lingering Hurdles to an Open Internet—How the FCC Order Failed

Even if the FCC manages to finagle jurisdiction through one of the methods discussed in Part III.A, its ability to effectively regulate network management practices will still be in question. This becomes especially apparent when evaluating Comcast’s new network management practices under the framework employed in the *FCC Order*, an analysis which this Section undertakes.

1. Protocol-Agnostic Network Management

Under Comcast’s fully deployed protocol-agnostic network management practice,¹²⁷ all traffic to and from users’ computers connected to the Comcast high-speed Internet network is examined and then designated either Priority Best Effort (PBE) or Best Effort (BE),¹²⁸ with PBE being the default status for Internet traffic.¹²⁹ A Comcast customer’s service will only be susceptible to degradation if that user’s activity warrants a designation of BE.¹³⁰ A customer’s traffic will only be degraded to BE if two situations occur.¹³¹ First, the aggregate usage level of a particular upstream or downstream port of a CMTS, measured over the past fifteen minutes,¹³² must be near congestion.¹³³ Second, a subscriber must be

126. *Id.* at 1001 (emphasis added) (noting that the FCC’s justification for classifying cable modem services as an “information service”—that “broadband services should exist in a minimal regulatory environment that promotes investment and innovation in a competitive market”—was adequate at the time).

127. For a more in-depth explanation of the hardware and software required by Comcast’s protocol-agnostic network management, see Comcast’s New Practices, *supra* note 78.

128. *Id.* at 6.

129. *Id.*

130. *Id.*

131. *Id.* at 6-7.

132. *Id.* at 9.

133. *Id.* at 6-7. This is referred to as the “Near Congestion State” and it occurs when “traffic flowing to or from that CMTS port . . . exceed[s] a specified level (the ‘Port

making a “*significant* contribution to the bandwidth usage on the particular port” that is approaching congestion, which Comcast calls the “Extended High Consumption State.”¹³⁴ A subscriber must sustain consumption of more than seventy percent¹³⁵ of his or her provisioned upstream or downstream bandwidth for a period of fifteen minutes.¹³⁶ Only when both of the aforementioned conditions occur will a subscriber’s upstream or downstream traffic be designated as BE.¹³⁷ Once a subscriber’s status has been designated BE, “such traffic will not be delayed so long as the network segment is not actually congested.”¹³⁸ Ultimately, however, when congestion does occur, it will affect subscribers with BE status before those with PBE status.¹³⁹ A subscriber’s status will remain BE so long as his or her bandwidth consumption rates continue to exceed the thresholds.¹⁴⁰ A subscriber’s status will return to PBE once his or her consumption has returned to levels below the thresholds for more than fifteen minutes.¹⁴¹

This is a complicated system to be sure. To clarify, Comcast provided a simplified explanation in its FCC filings:

Simply put, there are four steps to determining whether the traffic associated with a particular cable modem is designated as PBE or BE:

1. Determine if the CMTS port is in a Near Congestion State.
2. If yes, determine whether any users are in an Extended High Consumption State.
3. If yes, change those users’ traffic to BE from PBE. If the answer at either step one or step two is no, no action is taken.
4. If a user’s traffic has been designated BE, check user consumption at next [15 minute] interval. If user consumption has declined below predetermined threshold, reassign the user’s traffic as PBE. If not, recheck at next interval.¹⁴²

To implement its new practices, Comcast deployed new hardware and

Utilization Threshold’),” which is “measured as a percentage of the total aggregate upstream or downstream bandwidth for the particular port during [the past fifteen minutes].” *Id.* at 7. Comcast set its upstream threshold at seventy percent and its downstream threshold at eighty percent. *Id.* at 8. “Thus, over any 15-minute period, if an average of more than 70 percent of a port’s upstream bandwidth capacity or more than 80 percent of a port’s downstream bandwidth capacity is utilized, that port will be determined to be in a Near Congestion State.” *Id.* Comcast has further reserved the right to adjust these threshold levels as it deems necessary. *Id.* at 7.

134. *Id.* (emphasis added).

135. Referred to as the “User Consumption Threshold.” *Id.* at 9.

136. *Id.* The provisioned upstream or downstream bandwidth is determined by the level of service a customer has purchased. *Id.*

137. *Id.* at 7.

138. *Id.* at 2.

139. *Id.* at 7.

140. *See id.* at 10-11.

141. *Id.* at 2.

142. *Id.* at 10-11.

software adjacent to the Regional Network Routers (RNRs), which are further upstream than its CMTSes.¹⁴³ Despite the upstream location of the new hardware, Comcast claims that it uses the RNRs to manage network congestion further downstream through the CMTSes, on a scope similar to its previous network management.¹⁴⁴

Comcast has appeared confident in its new practices, boasting that “on average less than one-third of one percent of subscribers have had their traffic priority status changed to the BE state on any given day.”¹⁴⁵ It has further asserted that its protocol-agnostic network management practice “has nothing to do with the applications a customer uses and everything to do with the total bandwidth being used in the last few minutes,”¹⁴⁶ and that this new technique “ensure[s] that all customers get their *fair share* of bandwidth every hour of the day.”¹⁴⁷

At first glance, Comcast’s protocol-agnostic approach appears far less discriminatory than its former practices. While the FCC’s main complaint with the ISP’s former network management was its arbitrary and discriminatory targeting of certain protocols,¹⁴⁸ the new approach does not explicitly target any protocols or applications.¹⁴⁹ In fact, the new approach appears to incorporate the FCC’s suggestion that Comcast implement new practices that “throttle back the connection speeds of high-capacity users (rather than any user who relies on [P2P] technology).”¹⁵⁰ In sum, Comcast’s new approach improves upon past practices in the following ways: (1) it degrades user access only when congestion occurs; (2) it does not explicitly target certain applications; (3) it does not involve fraudulent practices, such as deceiving computers and users by sending falsified RST packets; (4) it delays, rather than interrupts, consumer access; and (5) the nature of the approach is fully disclosed and available for subscriber review on Comcast’s Web site.¹⁵¹

Nevertheless, critics have remained skeptical.¹⁵² This is understandable in light of Comcast’s predisposition for changing its story

143. *Id.* at 4.

144. As a result, “bandwidth usage on one CMTS port will have no effect on whether the congestion management practices . . . are applied to a subscriber on a different CMTS port.” *Id.* at 5.

145. *Id.* at 10.

146. *Latest Comcast Traffic Shaping Techniques Similar to That of NetEqualizer APconnections, Inc.*, BIOTECH WK., Oct. 8, 2008, at 3022, available at 2008 WLNR 18740638.

147. Stanton, *supra* note 75, at 47 (emphasis added).

148. *FCC Order*, *supra* note 5, at para. 1.

149. See generally Comcast’s New Practices, *supra* note 78.

150. *FCC Order*, *supra* note 5, at para. 49.

151. See generally Comcast’s New Practices, *supra* note 78.

152. See Stanton, *supra* note 75.

as it relates to network management.¹⁵³ In fact, a closer look at Comcast's protocol-agnostic practices reveals that this skepticism is well-founded. Such an inspection reveals that Comcast's new practices fall short of compliance with the *FCC Order*. The first step in this inquiry is to determine whether the new practices violate one of the four Internet principles.¹⁵⁴ This is not difficult, as simply subjecting Internet access to degradation likely implicates the first principle—entitling subscribers to access the lawful Internet content of their choice.¹⁵⁵ Upon such a showing, Comcast would have to establish that its network management practices are reasonable by demonstrating that they are “carefully tailored to its interest in easing network congestion.”¹⁵⁶

The new approach fails the reasonableness test in two distinct ways. First, it is over-inclusive because it subjects subscribers to service degradation even when that subscriber is not contributing to network congestion on a particular CMTS port *at that moment*.¹⁵⁷ This results because a subscriber's priority status is determined by the amount of bandwidth that subscriber has used in the past fifteen minutes.¹⁵⁸

Second—identical to its former practices—Comcast's new approach manages congestion at the CMTS level. As a result, “Comcast's technique may impact numerous nodes within its network simultaneously, regardless of whether any particular node is experiencing congestion.”¹⁵⁹ Without more information, it is hard to understand why Comcast cannot manage congestion further downstream through its Optical Nodes, which the FCC has explicitly stated would be more narrowly tailored to Comcast's interest in easing network congestion.¹⁶⁰ The most likely reason for managing the

153. See *supra* Part II.C.1.

154. See *supra* Part II.C.2.

155. See *supra* note 25 and accompanying text.

156. *FCC Order*, *supra* note 5, at para. 48.

157. See Stanton, *supra* note 75, at 47; Comcast's New Practices, *supra* note 78, at 8-11. The following illustrates how such a scenario might occur: *A* logs onto the Internet and engages in activity requiring large amounts of upstream bandwidth. Despite *A*'s usage, congestion does not result due to light traffic on the CMTS upstream port. However, after fifteen minutes of extensive bandwidth use, *A*'s status is degraded to BE for the next fifteen minutes. Shortly after having his status degraded (unbeknownst to him), *A* incidentally cuts back on his bandwidth demand, thereby reducing his consumption to levels below the threshold. Despite reducing his bandwidth consumption, *A*'s service is then subject to management and slowed five minutes later, when the CMTS port becomes congested. It is very likely, at this point, that other subscribers have begun using large amounts of bandwidth, contributing to the congestion, but have not had their service statuses downgraded to BE yet. This example illustrates why Comcast's new approach, while a major improvement over its former practices, still falls short under the FCC's framework with respect to its lack of “real time” management.

158. See *supra* notes 133-34 and accompanying text.

159. *FCC Order*, *supra* note 5, at para. 48.

160. *Id.*

network further upstream is cost minimization. However, this argument does not fully explain Comcast's choices because the management equipment is located further upstream, adjacent to the RNRs, but manages congestion through the CMTSes.¹⁶¹ If Comcast can manage downstream traffic from an upstream location, why does it not use the same equipment to manage the network through the Optical Nodes, as the FCC suggested?

This analysis demonstrates the ways in which Comcast's protocol-agnostic network management practices fall short of compliance with the *FCC Order*. To ensure full compliance in the future, the FCC needs to take a more proactive monitoring approach similar to Ronald Reagan's "trust but verify" philosophy, which the FCC indicated it would favor in its *Order*.¹⁶²

2. Excessive Use Threshold

In addition to deploying its new protocol-agnostic approach, Comcast responded to the *FCC Order* by announcing that it was "amending" its excessive use policy, effective October 1, 2008, by imposing a 250GB monthly bandwidth usage threshold.¹⁶³ In response to complaints, Comcast emphasized that such a threshold was not new.¹⁶⁴ In fact, it emphasized that, as part of its ongoing "Acceptable Use Policy," it has "long had an 'excessive use' limit" and that the announcement of the adjusted cap simply "provides clarity to customers" as required by the FCC in its August *Order*.¹⁶⁵ According to Comcast, its excessive use threshold is designed "to prevent any one residential account from consuming excessive amounts [of bandwidth]" in any given month.¹⁶⁶ Ultimately, any subscriber who exceeds the threshold twice within six months is "subject to having his or her Internet service account terminated for one year."¹⁶⁷

Not considered by the FCC in its *Order*, most likely because Comcast did not disclose it until August 28, 2008, the usage threshold has also generated skepticism.¹⁶⁸ Specifically, critics question the need for such a threshold in light of Comcast's new protocol-agnostic approach to network management.¹⁶⁹ In response, Comcast has insisted that the cap is

161. See *supra* notes 136-37 and accompanying text.

162. *FCC Order*, *supra* note 5, at para. 54.

163. Lynn Stanton & Ted Gotsch, *Comcast Appeals FCC Order on Traffic Management; MAP, Vuze Seek Faster End to P2P Throttling*, TELECOMM. REP., Sept. 15, 2008, available at 2008 WLNR 17230008.

164. See Comcast's New Practices, *supra* note 78, at 1 n.3.

165. *Id.* at 1 n.3.

166. *Id.* at 1-2 n.3.

167. *Id.* at 1 n.3.

168. See Stanton, *supra* note 75, at 46-47.

169. *Id.*

“independent” of and “should not be confused with” its “congestion management practices.”¹⁷⁰ In fact, in its September 19, 2008, compliance letter to the FCC, Comcast limited its discussion of its excessive use threshold to a footnote.¹⁷¹ In a somewhat academic attempt to distinguish this threshold from the ambit of network congestion management, Comcast stated that, while the threshold “provides clarity to customers regarding the specific monthly consumption limit per account,” it “does not address the issue of network congestion, which results from traffic levels that vary from minute to minute.”¹⁷² Alternatively, Comcast emphasized that such criticism is misplaced because the 250GB threshold is very high—so high, in fact, that it will only affect a very small percentage of its customers.¹⁷³

The excessive use threshold is likely to implicate the second and fourth Internet principles, which provide that consumers are entitled to “run applications and use services of their choice” and “competition among network providers, application and service providers, and content providers,” respectively.¹⁷⁴

While Comcast asserts that its excessive use threshold is unrelated to its network congestion management, this distinction distorts reality.¹⁷⁵ In fact, the only cognizable differences between the threshold and its protocol-agnostic practices are the unit of time by which Comcast measures bandwidth consumption and Comcast’s response to excessive consumption. Ultimately, the threshold is likely to produce effects similar to Comcast’s

[T]here are a number of questions raised to which we do not have the answers. Why, for example, does Comcast need both its real-time network management system and the 250 GB [gigabyte] monthly cap on consumer usage? Will consumers end up paying more for less bandwidth to use? Is it fair to consumers to punish them based on usage lower than the advertised speed? Is it a problem to punish a consumer now for what transpired on the network 15 minutes ago, even if a customer [is] not contributing to congestion at the moment? Will there be anticompetitive aspects to limiting consumer use of video over the Internet, but not on the Comcast cable network?

Id. at 48 (quoting Gigi Sohn, President and Cofounder, Public Knowledge).

170. Comcast’s New Practices, *supra* note 78, at 1 n.3.

171. *Id.* at 1 n.3.

172. *Id.*

173. Comcast maintains that the threshold level is “sufficient to download 125 standard-definition movies or upload 25,000 high-resolution digital photos” and “that median residential usage is only 2 to 3 gigabits per month.” Stanton & Gotsch, *supra* note 163.

174. *Internet Policy Statement*, *supra* note 20, at para. 4.

175. The FCC did not consider Comcast’s former excessive use threshold because the company had not publicly disclosed this policy at the time. The company also did not disclose this policy in its description of its former network management practices, as submitted to the FCC on September 19, 2008. See generally Comcast’s Former Practices, *supra* note 12. It is also unlikely that the FCC would take this distinction seriously. In fact, the former FCC chairman indicated his interest in the specifics of Comcast’s threshold as it relates to its network management practices. *FCC Order*, *supra* note 5, app. at 13065-68 (Chairman Kevin J. Martin, statement).

former practices, which degraded P2P protocols that Comcast had determined were the primary cause of bandwidth congestion.¹⁷⁶ Ultimately, the threshold (1) disfavors those applications that require large amounts of bandwidth and those customers that access them the most and (2) provides Comcast with an alternative method of limiting competition for its video-on-demand service—a violation of the FCC's fourth Internet principle.

Comcast countered by arguing that (1) it has always had a threshold (we just did not know about it), and (2) the threshold is so high that it is unlikely to affect any of its customers.¹⁷⁷ Even if these assertions are true, as applications become more complicated—requiring larger amounts of bandwidth—it is not difficult to envision how this threshold could easily inhibit the technological development of new protocols and applications, especially if Comcast does not habitually readjust the threshold. Comcast itself has undermined its very need for such a threshold—indicating that the threshold is *so* high, in fact, that very few, if any, subscribers will be affected by it. Furthermore, the merits of this argument are limited by the fact that, as new applications require increasing amounts of bandwidth, more and more subscribers will be affected by the threshold.

Comcast's plans to terminate a subscriber's service for a year, if that subscriber exceeds the threshold twice within six months, should also be addressed through regulation.¹⁷⁸ In fact, it is hard to see how terminating a customer's Internet service entirely does not implicate the FCC's Internet principles. If Comcast is concerned with excessive bandwidth usage, it should take the FCC's advice and charge those customers who exceed the threshold.¹⁷⁹ Regardless, to avoid new issues, the FCC clearly needs to implement a monitoring system to continuously evaluate changing practices as well as those that are downplayed by ISPs.

3. Consumer Disclosure

The *FCC Order* required Comcast to disclose to the FCC and to the public the details of its network management practices, "including the thresholds that will trigger any limits on customers' access to bandwidth."¹⁸⁰ In addition to fulfilling its disclosure obligations to the FCC, Comcast has also made efforts to communicate with customers about the specifics of its network management practices.¹⁸¹ Specifically, it

176. *Id.* at para. 1.

177. *See infra* note 185 and accompanying text.

178. Comcast's New Practices, *supra* note 78, at 2 n.3.

179. *FCC Order*, *supra* note 5, at para. 49. In fact, in its *Opinion and Order*, the FCC suggested that Comcast "cap the average users' capacity and then charge the most aggressive users overage fees." *Id.*

180. *Id.* at para. 54.

181. Comcast.net, Comcast Network Management, <http://networkmanagement.comcast.net>.

provides (1) an explanation on its Web site relating to its protocol-agnostic management practices;¹⁸² (2) information on its Web site relating to the 250GB monthly bandwidth threshold;¹⁸³ and downloadable copies of the *FCC Order* and its correspondence with the FCC, including a highly technical description of both its former and current network management practices.¹⁸⁴ The Web site also features network management updates and a page devoted entirely to frequently asked questions.¹⁸⁵

Comcast's about face with regards to disclosure of its network management practices was smart thinking for two reasons: (1) disclosing network management practices is easy and cheap; and (2) under the framework of the *FCC Order*, Comcast's practices are no longer presumptively unreasonable on the basis of disclosure.¹⁸⁶

Despite the availability of this information, these disclosures are hardly made "in a manner that customers of ordinary intelligence would reasonably understand."¹⁸⁷ While the portions of Comcast's Web site dedicated to discussing its protocol-agnostic approach are set forth in simple terms, they are lacking in detail.¹⁸⁸ For example, the company indicates that its "new congestion management technique will only ever impact *a tiny fraction* [(less than one percent)] of [its] customers who consume extraordinary amounts of bandwidth."¹⁸⁹ Does this mean that the technique will affect only a small fraction of *all customers* or only a small fraction of those customers who use an "extraordinary" amount of bandwidth? How much is an *extraordinary* amount of bandwidth? How long must a customer exceed the threshold of *extraordinary* bandwidth usage before he or she is subject to degradation? Once a customer has attained this status, how long will Comcast manage his or her bandwidth? A quick glance at Comcast's Network Management Web site does not produce quick answers to these questions.

comcast.net/ (last visited Apr. 13, 2010) [hereinafter Comcast's Network Management Disclosures].

182. *See id.*

183. *See* Comcast's Acceptable Use Policy, *supra* note 76.

184. The documents available for download include the following: Comcast's FCC Compliance Plan and Descriptions of [Former] and [New] Network Management Techniques. *See* Comcast's Network Management Disclosures, *supra* note 181. Following the D.C. Circuit's decision, this correspondence remains. *Id.*

185. *Id.*

186. *See FCC Order, supra* note 5, at para. 53.

187. *Id.* at para. 52.

188. *See* Comcast, Frequently Asked Questions About Network Management, <http://help.comcast.net/content/faq/Frequently-Asked-Questions-about-Network-Management#how> (last visited Apr. 13, 2010).

189. Comcast.net, Network Management, <http://networkmanagement.comcast.net/NM-update-01052009.htm> (last visited Apr. 13, 2010).

In fairness, Comcast has provided the answers to all of these questions; they are just buried and excessively complicated.¹⁹⁰ The actual specifics, including threshold levels and other important values, are only available in the documents listed under the Downloads section on the right-hand side of the Web site.¹⁹¹ Even if a customer is able to locate this information, the descriptions provided in these documents are highly technical and confusing. When describing how its new network management practices work, Comcast creates various terms to refer to each of its many thresholds, such as “near congestion state,” rather than just simply stating the value.¹⁹² Whether intended or not, naming the thresholds in this way gives Comcast the flexibility to (1) bury the threshold values in the hopes that the majority of its customers will give up after being confronted by the vague and confusing description of its network management practices and (2) subtly adjust threshold values without having to change their “detailed” descriptions.

Does this rise to “misdirection and obfuscation”?¹⁹³ Regardless, it would not be too difficult for Comcast to generate a more thorough, yet simple description of *exactly* how its practices work, including all *numerical* threshold levels and *numerical* time intervals in a straightforward manner. To illustrate this point, this may be a more suitable description:

When a subscriber continuously uses more than [insert numerical threshold] bandwidth over a period of [insert time interval (minutes)], his or her status will be degraded. However, only when the network enters a state of congestion [which occurs when . . .], will Comcast slow a degraded user’s connection speed. Degraded users will experience slowed service equal to [insert bandwidth amount] for [insert time interval (minutes)].

The bottom line is that it is hard to imagine a more complicated description of network management practices than the one Comcast provided to the FCC. In light of this discussion, the final Part of this Note encourages the FCC to adopt a clear set of rules—similar to the framework set forth in its *Order*—for ISP network management regulation.¹⁹⁴

IV. POLICY RECOMMENDATIONS—BEYOND JURISDICTION, REGULATIONS ARE NEEDED

The significance of the Internet in the lives of Americans underscores

190. *See supra* Part III.B.1.

191. *Id.*

192. *See, e.g.,* Comcast’s New Practices, *supra* note 78, at 7.

193. *FCC Order, supra* note 5, at para. 53.

194. This is suggested in order to provide certainty for the benefit of both consumers and ISPs.

the importance of maintaining continued and widespread access. The first step in achieving this goal is overcoming the FCC's current lack of jurisdiction. As this Note discussed in Part III.A, the FCC could pursue several alternative options to "reestablish" jurisdictional authority to regulate network management practices. However, even if successful in that endeavor, that is only the first step to effective regulation.

As the events that gave rise to the *FCC Order* suggest, explicit regulations that monitor procedures and consequences are needed to maintain the openness of the Internet. In Comcast's defense, it is not fair to require for-profit corporations to follow nonexistent or vague rules and then punish them on a case-by-case basis when they misstep. Despite a growing need for such regulation, Congress and the FCC have indicated their reluctance to adopt hard-and-fast rules, citing the dynamic nature of both the Internet and the individual networks run by different ISPs.¹⁹⁵ This is a weak excuse. Regulation is needed to ensure that customers receive continued access to the Internet and to provide ISPs with some idea as to the framework within which they can manage bandwidth. The real question then becomes this: how should regulations be designed?

This Note recommends that the FCC adopt, as a rule, the regulatory framework outlined in its now-vacated *Order*. As the *Order* illustrated, the standard is flexible enough to account for the government's concerns relating to the dynamic nature of the Internet. Adopting the framework that the FCC used in its adjudicative proceeding would not be inconsistent with its past actions. The need to provide guidance for ISPs is another reason to implement such regulations. This is exacerbated by the fact that network management practices are costly and highly difficult to develop and deploy. Without clear-cut rules, it is unfair for ISPs to make good-faith efforts to implement "fair" or "acceptable" bandwidth management practices when regulators have not provided any guidance as to what constitutes "fair" or "acceptable" in the context of bandwidth management.

Until the D.C. Circuit derailed its efforts, the FCC was well on its way to accomplishing this. On September 21, 2009, new FCC Chairman Julius Genachowski outlined his commitment to "preserv[ing] the free and open Internet" in a speech given at the Brookings Institute.¹⁹⁶ In his speech, Genachowski proposed the addition of two new principles to the four set forth in the *Internet Policy Statement*.¹⁹⁷ The first principle "would prevent

195. *See supra* note 70.

196. Press Release, FCC, FCC Chairman Julius Genachowski Outlines Actions To Preserve the Free and Open Internet (Sept. 21, 2009), available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-293567A1.pdf [hereinafter Genachowski Press Release].

197. *Id.*

Internet access providers from discriminating against particular Internet content or applications, while allowing for reasonable network management.”¹⁹⁸ The second “would ensure that Internet access providers are transparent about the network management practices they implement.”¹⁹⁹ If these two new principles sound familiar, it is because they come straight out of the *FCC Order*.²⁰⁰ Genachowski also indicated that the revision process would include codifying the six Internet principles and clarifying that each applies “to all platforms that access the Internet.”²⁰¹ In late 2009, the FCC voted to codify the original four Internet principles as well as the two new principles.²⁰²

However, merely adopting the framework set forth in the FCC Order would not go far enough. The FCC needs to adopt a proactive monitoring procedure for those ISPs who violate Internet regulations to ensure that they actually fully comply with the Commission’s regulatory mandates. Asking an ISP to merely disclose what it is doing to remedy a violation does not go far enough. Think of it as a form of corporate probation. Finally, there also needs to be clear consequences for failing to comply during this probationary period—consequences that will ensure that ISPs play by the rules.

V. CONCLUSION

As Comcast has demonstrated, the lack of clear network management rules opens the door for ISPs to engage, potentially, in both deceptive and discriminatory network management practices. Comcast’s pre-*FCC Order* network management practices and its failure to design new network management practices that fully comply with the *FCC Order* demonstrate the need for clear rules and mandatory compliance monitoring by the FCC. The first step in getting the move toward Internet regulation back on track is “reestablishing” jurisdiction. Although the D.C. Circuit’s decision is a setback, it is not insurmountable. As this Note indicates, there are a number of ways that the FCC can “reestablish” jurisdiction over network management practices.

Anticipating that the FCC will succeed in “reestablishing” its authority over these practices, this Note recommends that the FCC take a hard look at whether Comcast actually complied with its *FCC Order* before moving ahead with its planned regulatory regime. As this Note argues,

198. *Id.*

199. *Id.*

200. See *supra* notes 58-63 and accompanying text.

201. Genachowski Press Release, *supra* note 196.

202. Preserving the Open Internet Broadband Industry Practices, *Notice of Proposed Rulemaking*, 24 F.C.C.R. 13064, at paras. 88-132 (2009).

Comcast's efforts fell short. Such a conclusion underscores the shortcomings of the approach taken by the FCC in its *Order* and the importance of adopting clear and enforceable Internet regulations. Comcast also demonstrated that such regulations are only as good as the enforcement mechanisms employed to ensure continued compliance. Regulation should be backed by both FCC monitoring and significant consequences for continued violations. By encouraging ISPs to develop better network management practices, such an approach will ensure that the Internet remains competitive and open long into the future.

