

## Sabotaging Content Competition: Do Proposed Net Neutrality Regulations Promote Exclusion?

George S. Ford, PhD\*

Michael Stern, PhD†

March 4, 2010

### Introduction

Net neutrality, which has long been only vaguely defined, is beginning to take form as the FCC and Congress contemplate specific rules to implement the idea.<sup>1</sup> We now know, for example, that net neutrality regulation is motivated fundamentally by the belief that broadband service providers (“BSPs”) will, at some future date, seek to extract profits from the content segment of the Internet marketplace, and net neutrality aims to stop it.<sup>2</sup>

The sentiment is made plain in the FCC’s recent Notice of Proposed Rulemaking (“NPRM”) NPRM to preserve an “Open Internet”, where they observe, “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, particularly if the discrimination is motivated by anticompetitive purposes.”<sup>3</sup> Language in the proposed net neutrality legislation, sponsored by Representatives Markey and Eshoo, mirrors the concern: “legal and marketplace changes [permit] telecommunications network operators to control who can and who cannot offer content, services, and applications over the Internet utilizing such networks,” and “the national economy would be severely harmed if the ability of Internet content, service, and application providers to reach consumers was

frustrated by interference from broadband telecommunications network operators.”<sup>4</sup>

---

---

*Net neutrality regulation, as proposed by the FCC and Congress ...increases the incentive of BSPs to engage in exclusionary conduct in the content sector. \*\*\* [Accordingly,] the proposed rule encourages broadband service providers to take steps to reduce the diversity of voices on the Internet to the detriment of the public interest.*

---

---

These formal proposals for regulation echo the claims of neutrality supporters that fear surplus (profit) extraction will take the form of “exclusionary” practices such as unfair or discriminatory access prices,<sup>5</sup> “fast lanes” and “slow lanes” where preferential delivery is given to content firms willing and able to pay more, or outright monopolization of content. Van Schewick (2007), for example, asserts “absent network neutrality regulation, network providers will likely discriminate against or exclude independent producers of applications, content, or portals from their networks.”<sup>6</sup> More recently, Chettiar and Holladay (2010) opine

that “[w]ithout net neutrality, new technologies could lead to pricing practices that transfer wealth from content providers to ISPs.”<sup>7</sup>

While an important issue, whether or not this fear of exclusionary behavior is well founded is not the subject of this PERSPECTIVE. Rather, we merely evaluate the effect of the currently proposed net neutrality regulations on the incentive to engage in such exclusionary behavior.

---



---

*We learn (at least) two things from these proposals about what net neutrality entails. First, net neutrality is a response to fears regarding the extraction of profits from the content sector to the network sector via exclusionary tactics. Second, net neutrality is explicitly price regulation.*

---



---

Our analysis indicates the following: Net neutrality regulation, as proposed by the FCC and Congress, and in papers such as Van Schewick (2007), *increases* the incentive of BSPs to engage in exclusionary conduct in the content sector.<sup>8</sup> Put simply, firms always have an incentive to take those steps, which increase their profits. The degree of this incentive depends on the additional profits to be gained, less any costs associated with the conduct, which leads to the profit rise. Ironically, net neutrality rules, which are supposed to suppress privately profitable exclusionary conduct, will actually have an effect opposite of what is intended. Because net neutrality regulations now under consideration will not reduce the profits associated with monopolization of content, but only those associated with the participation in a competitive content market, the proposed rule encourages broadband service providers to take steps to reduce the diversity of

voices on the Internet to the detriment of the public interest. Demonstration of this result is straightforward and depends, for the most part, on little more than the axiom that price regulation of a firm with market power does not increase profits.<sup>9</sup>

Net neutrality is plainly an important issue for the present leadership, from the White House to the FCC, and perhaps to the nation. But, given that currently proposed rules exacerbate the very problem they aim to solve, it is clear the proposed implementation of net neutrality policy has lost its analytical footing. In our view, a sensible policy on net neutrality requires a return to first principles.

### Net Neutrality Takes Form

Today, there are two formal government proposals for implementing net neutrality, and both originate in the surplus extraction hypothesis. The most pressing example comes with the FCC’s recent NPRM to ensure an “open Internet.” There, the FCC specifically proposes a rule where

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 ....<sup>10</sup>

Similarly, the Markey-Eshoo bill mandates a zero price between content providers and BSPs, requiring that BSPs

not impose a charge on any Internet content, service, or application provider to enable any lawful Internet content, application, or service to be offered, provided, or used through the provider’s service, beyond the end user charges associated with providing the service to such provider.<sup>11</sup>

Both rules target pricing. The Markey-Eshoo bill forbids any price to content providers, whereas the FCC’s proposal prohibits only price differences for different qualities of service.<sup>12</sup>

(We direct the reader to Phoenix Center POLICY PAPER NO. 28 for an economic analysis showing the potential harms of such pricing restrictions.<sup>13</sup>)

We learn (at least) two things from these proposals about what net neutrality entails. First, net neutrality is a response to fears regarding the extraction of surplus from the content sector to the network sector via pricing or exclusionary tactics. Second, net neutrality is explicitly price regulation.<sup>14</sup> Both proposals are pricing rules on BSPs and little else.<sup>15</sup>

---



---

*Net neutrality rules of the type proposed by the FCC and the Markey-Eshoo Bill encourage exclusionary behavior rather than impede it. Current federal proposals to regulate in the name of net neutrality are in direct conflict with stated goals and exacerbate the alleged defects in the Internet marketplace.*

---



---

An important question is whether or not the proposed price regulations “promote consumer choice and competition among providers of lawful content, applications, and services” by addressing a BSP’s alleged motivation “to exclude independent producers of applications, content, or portals from their networks.”<sup>16</sup> The answer is “No.” Indeed, we demonstrate here that these proposals are fundamentally defective. *Net neutrality rules of the type proposed by the FCC and the Markey-Eshoo Bill encourage exclusionary behavior rather than impede it.* Current federal proposals to regulate in the name of net neutrality are in direct conflict with stated goals and exacerbate the alleged defects in the Internet marketplace.

## The Economic Model

Our model has the following setup. There is a content sector with many differentiated providers (e.g., Google, Food Network, YouTube, etc.). This content is “consumed” by end-users. The BSP is the middleman in this two-sided market, providing the network connection between the content and the end-user. Also, the BSP may offer its own content, which is represented by the vector of differentiated services,  $V$ . Assume that content providers obtain revenues from advertising.<sup>17</sup>

Our interest is in the choices of the BSP. In this setup, there are three price vectors to consider: (1)  $P$  denotes the vector of prices that the network provider’s charge the differentiated content providers for access to the network; (2)  $S$  denotes the vector of subscription prices charged to end users of the network; and (3)  $A$  denotes the vector of rates charged to those wishing to advertise on the network provider’s content affiliate.

In the most general case—no net neutrality regulation—the network provider’s revenue is

$$R(P, S, V, A) \quad (1)$$

where, as just described, the unaffiliated content providers face price vector  $P$ ; end users face price vector  $S$ ; and advertising revenue is generated on the BSPs content  $V$  based on the price vector  $A$ . (Recall that content providers are assumed to make money through advertising.)

Let  $C(V)$  denote the total cost for the network provider to directly produce the content  $V$ . (Other costs are assumed to be zero for simplicity.) In order to maximize profits, the BSP chooses the three prices ( $P$ ,  $S$ , and  $A$ ) and content  $V$ , yielding the optimal profit,

$$\pi_u^* = R(P_u^*, S_u^*, V_u^*, A_u^*) - C(V_u^*), \quad (2)$$

where the subscript “U” indicates the “unregulated” case and “\*” denotes optimal values. Although we assume optimal prices, these prices need not be positive.<sup>18</sup>

Now, suppose the network provider monopolizes content so that all content is provided directly from the network provider’s affiliate. In this case, the maximization of profits entails choosing only price vectors  $S$  and  $A$  (there is no one left to pay  $P$ ) along with content choice  $V$ , rendering profit

$$*_M R_M(S^*_M, V^*_M, A^*_M) - C(V^*_M), \quad (3)$$

where the subscript “M” denotes a monopolized content sector.

In theory, the BSP will monopolize content if it is profitable. The incentive of the BSP to do so is

$$\Delta_U = *_M - *_U. \quad (4)$$

In such a general model, it is not possible to say whether or not  $\Delta_U$  is positive or negative. Practically and theoretically the incentive to monopolize depends on a wide range of factors, many of which have been formally modeled in the economics literature. The welfare effects of exclusion, even if accomplished, are often ambiguous.<sup>19</sup> Summaries of this literature are provided by Kaserman and Mayo (1993), Farrell and Weiser (2003), and a few others.<sup>20</sup> Whinston (1990) provides a thorough theoretical analysis of the topic.<sup>21</sup>

---

*... under network neutrality regulation, network providers have a stronger motivation to exclude independent producers of content.*

---

Plainly, under what conditions a BSP would seek to monopolize content (directly or indirectly) is an interesting question.<sup>22</sup> But, we do not attempt to answer that question here, and

cannot do so with this model. We do have other interests, however, which can be addressed using this framework.

While not the focus of our analysis, by comparing Expressions (2) and (3), we do obtain a few useful results on the issue of monopolization. It is likely that a monopolized content market is less valuable to consumers (that is certainly the common view), so the prices to end users ( $S$ ) will be lower, thereby reducing profits. The cost of producing content,  $C(V)$ , will likely rise in the monopolized state since all content is provided by the BSP. Therefore, if profits are to rise, then it presumably must happen through higher advertising prices,  $A$ . In other words, the value of monopolizing content is not the monopolization of content per se, but the monopolization of the source of the revenue—i.e., the advertising market, or the book market, and so forth—where the increased profits from advertising must offset the reduction in profits from lower demand for broadband and higher costs for the production of content. The ability for a BSP to do so, however, seems implausible.

Our primary interest is in the effect of net neutrality regulation on the incentive to monopolize, whatever that incentive may be. As such, consider a net neutrality rule, like those proposed to date, where regulators impose some restriction on prices that BSPs can charge content providers such that  $P = P_R$ .

With regulation of  $P$ , the BSP maximizes profits by again choosing only  $S$ ,  $A$ , and  $V$ , giving

$$*_NN R_{NN}(P_R, S^*_NN, V^*_NN, A^*_NN) - C(V^*_NN), \quad (5)$$

where the subscript “NN” denotes net neutrality regulation.

At this point, it is worth comparing Expressions (2) and (5). Any restriction on the BSP’s choices cannot increase profits, since the firm is free to choose the regulated price vector absent regulation. That is, if the regulated price vector

$P_R$  maximizes profit, then the BSP will choose  $P_R$  absent regulation. If the BSP does not choose  $P_R$ , then another price vector yields higher profits. Therefore, it must be the case that  $\Delta_U^* \geq \Delta_{NN}^*$ , which simply says the unregulated profit is at least as large as the regulated profit.<sup>23</sup>

In the presence of net neutrality regulation, the incentive for monopolization of content is

$$\Delta_{NN}^* - \Delta_M^* \quad (6)$$

where we assume  $\Delta_M^*$  is the same both with and without net neutrality regulation.<sup>24</sup> As with Expression (4), we cannot say whether Expression (6) is positive or negative, but this is not the question of interest. Rather, we wish to evaluate whether net neutrality regulation increases the incentive of the BSP to monopolize the content sector. The answer lies in a comparison of  $\Delta_U$  and  $\Delta_{NN}$  as defined in Expressions (4) and (6).

---

*... price is always the preferred tool for surplus extraction, and prohibiting its use only leads to the use of less efficient tools—like sabotage or even monopolization.*

---

By inspection, it is easy to see that the differences between these expressions depends solely on the difference between Expressions (3) and (5), which has already been established. That is, net neutrality regulation increases the incentive to monopolize via exclusion if  $\Delta_M^* > \Delta_{NN}^*$ , which must be true unless the regulated price is the same as the unregulated price. Therefore, it is possible to conclude that  $\Delta_{NN}^* > \Delta_U^*$ , which implies that under binding network neutrality regulation, network providers have a stronger motivation to exclude independent producers of content.<sup>25</sup>

### Example One: Madison River

Madison River Communications' blocking of VoIP service is a frequently used example of the need for net neutrality regulation.<sup>26</sup> Yet, the *Madison River* case does not suggest a general incentive to exclude, rather is simply a manifestation of the type of incentives described here.<sup>27</sup>

Federal and state regulators have long propped up access charges to levels well in excess of costs for rural phone companies, and these markups are an important source of revenues and profits for these carriers. At the same time, the FCC prohibited the application of such switched access charges to VoIP providers even though such calls were substitutes for traditional long distance services. Unable to levy the switched access charge to VoIP carriers, Madison River resorted to blocking. (Alternately, Madison River could have charged a higher price for a VoIP-capable broadband service, but did not.)

In the absence of the VoIP exclusion on access charges and regulation-sponsored markups on access services, the *Madison River* case would not exist. Madison River Communications merely responded to the incentives created by federal and state regulation, and their actions were unsurprising under the circumstances. As the economic theory of sabotage shows so clearly, prohibiting surplus extraction via price only leads to the use of less efficient extraction tools like sabotage or even monopolization.<sup>28</sup>

### Example Two: Carterfone

The *Carterfone* case is another example where the explicit and primary role regulation played in creating the incentive for exclusionary conduct is well established.<sup>29</sup> As noted in a paper by Farrell and Weiser (2003), the Bell System's entry deterring behavior in telephone equipment was "because of the price regulation of local telephone service."<sup>30</sup> Economists recognize that it was classic public utility-type regulation that created the incentive for the Bell

System to leverage and exclude entry in the terminal equipment sector. Accordingly, it was the firm's efforts to evade regulation, not simply a monopolist's inherent desire to protect revenue and profits, which created the incentive to sabotage and necessitated the *Carterfone* decision.

## Conclusion

The justification for net neutrality regulation is that absent a bright-line, non-discrimination rule, network providers will employ exclusionary tactics to harm competition in the content and application sector. Yet, as we show here, the proposed net neutrality rules of both the FCC and Congress, and encouraged by Van Schewick (2007) and Chettiar and Holladay (2010),<sup>31</sup> can actually promote such exclusionary behavior. *That is, the incentive to monopolize is greater under net neutrality.*

The policy implications of this analysis are numerous, but can be summarized at a very high level as follows: the analytical foundation for net neutrality remains in its infancy and the concept needs more time to evolve. Since even the advocates of net neutrality regulation admit that there exists a "de facto net neutrality regime"<sup>32</sup> today, there seems to be little reason for a headlong rush into bright-line regulatory rules when so little is known about the issue (as shown clearly here). The rules proposed by both the FCC and Congress create incentives that may not even exist absent the regulation, and increase whatever incentives do exist for BSPs to behave badly in the content market.

Most troubling about the proposed rules is that net neutrality, it now appears, has become little more than a quibble over profits between providers, a far cry from the origins of the concept wherein the focus was on the freedom to distribute and consume information without undue interference. A return to first principles may be in order.

## NOTES:

\* **Dr. George Ford is Chief Economist of the Phoenix Center for Advanced Legal and Economic Public Policy Studies. The views expressed in this PERSPECTIVE do not represent the views of the Phoenix Center, its Adjunct Fellows, or any of its individual Editorial Advisory Board Members.**

† **Dr. Michael Stern is a Senior Scholar with the Phoenix Center and an Assistant Professor of Economics at Auburn University.**

<sup>1</sup> *In re Preserving the Open Internet*, GN Docket No. 09-01, Notice of Proposed Rulemaking, \_\_ FCC Rcd \_\_, FCC 09-03 (rel. Oct. 22, 2009) (*Open Internet NPRM*); Internet Freedom Preservation Act (H.R. 3458) (hereinafter *Markey-Eshoo Bill*) (available at: <http://markey.house.gov/images/PDFs/netneutralitybill.pdf>).

<sup>2</sup> Such sentiments are no doubt linked to AT&T Chief Executive Ed Whitacre's now infamous statement, "... what they would like to do is use my pipes free, but I ain't going to let them..." P. O'Connell, *At SBC, It's All About "Scale and Scope"*, BUSINESSWEEK: INFORMATION TECHNOLOGY/ONLINE EXTRA (Nov. 7, 2005) (available at: [http://www.businessweek.com/@n34h\\*IUQu7KtOwgA/magazine/content/05\\_45/b3958092.htm](http://www.businessweek.com/@n34h*IUQu7KtOwgA/magazine/content/05_45/b3958092.htm)).

<sup>3</sup> *Open Internet NPRM* at ¶ 103.

<sup>4</sup> *Markey-Eshoo Bill*, *supra* n. 1, at §2(7) and (8).

<sup>5</sup> Generally, prices are not unfair or discriminatory, but an essential tool for the allocation of goods and services in an economy.

<sup>6</sup> B. Van Schewick, *Towards and Economic Framework for Network Neutrality Regulation*, 5 JOURNAL ON TELECOMMUNICATIONS AND HIGH TECHNOLOGY LAW 329-392 (2007), at 239. Van Schewick's analysis never states what restrictions are imposed on the BSP in a network neutrality scheme and never defines the objective function of the BSP, so this statement is merely assertion.

<sup>7</sup> I. Chettiar and J. Holladay, *Free to Invest: The Economic Benefits of Preserving Net Neutrality*, Institute for Policy Integrity, New York University School of Law, Report No. 4 (January 2010) at viii (available at: [http://www.policyintegrity.org/documents/Free\\_to\\_Invest.pdf](http://www.policyintegrity.org/documents/Free_to_Invest.pdf)).

<sup>8</sup> *Supra* n. 6.

<sup>9</sup> Price regulation of competitive firms could clearly increase profits. Agricultural price supports are an example. We assume BSPs have market power since that is the assumption made by advocates of net neutrality regulation.

<sup>10</sup> *Open Internet NPRM* at ¶ 106.

<sup>11</sup> *Markey-Eshoo Bill*, *supra* n. 1 at §12(b)(2).

<sup>12</sup> The FCC rule, on its face, is odd in that only a price difference justified by a quality difference is prohibited. BSPs, under this rule, are permitted to charge a uniform price to content providers and may also levy different prices for the same level of service, an outcome that is discriminatory pricing by any definition.

<sup>13</sup> T. Beard, G. Ford, T. Koutsky and L. Spiwak, *Network Neutrality and Foreclosing Market Exchange*, 1 INTERNATIONAL JOURNAL OF MANAGEMENT AND NETWORK ECONOMICS 160-175 (2009). An earlier version of this paper is available as PHOENIX CENTER POLICY PAPER NO. 28 (March 2007)(available at: <http://www.phoenix-center.org/pcpp/PCPP28Final.pdf>).

<sup>14</sup> This uniform application of price regulation is somewhat puzzling, since even the most ardent of net neutrality supporters describe such regulation as "heavy handed." *Comments of Free Press*, GN Docket No. 09-191, WC Docket No. 07-52 (Jan. 14, 2010)("Some regulation is heavy-handed, designed to control retail prices in a monopoly market (at 27).")

<sup>15</sup> It could be argued that the actual purpose of net neutrality regulation is to prohibit any quality differential rather than block price differences for different qualities. For our analysis, however, we analyze the proposals as they appear, which is as price regulation.

<sup>16</sup> *Markey-Eshoo Bill*, *supra* n. 1 at §12(a)(3) and (11).

<sup>17</sup> The same assumption made in Van Schewick (2007), *supra* n. 6, at 343.

## NOTES CONTINUED:

<sup>18</sup> In fact, the only case of which we are aware where money is exchanged in this manner between a BSP and a content provider, the BSP pays for that content. See, e.g., D. Goetzl, *ESPN360 Cuts Distribution Deal with Comcast*, *MEDIA DAILY NEWS* (May 19, 2009) (available at: [http://www.mediapost.com/publications/?fa=Articles.showArticle&art\\_aid=106390](http://www.mediapost.com/publications/?fa=Articles.showArticle&art_aid=106390)). Quality content is scarce and difficult to produce. In all likelihood, the BSP will pay for it, rather than be paid by it, as is the case in cable television.

<sup>19</sup> In the classic textbook example, if the content market is not competitive, the BSP may wish to enter the content market to reduce prices, thereby increasing the demand for broadband service by end-users. In such cases, the monopolization of content would increase economic welfare since the act of monopolization reduces prices to end-users while also increasing profit. R. Blair and D. Kaserman, *ANTITRUST ECONOMICS* (1985) at 295-301.

<sup>20</sup> D. Kaserman and J. Mayo, *Monopoly Leveraging Theory: Implications for Post-Divestiture Telecommunications Policy*, Center for Business and Economic Research: The University of Tennessee (1993); J. Farrell and P. Weiser, *Modularity, Vertical Integration, and Open Access Policies: Towards a Convergence of Antitrust and Regulation in the Internet Age*, 7 *HARVARD JOURNAL OF LAW AND TECHNOLOGY* 85-134 (2003). These papers provide a legitimate economic analysis of the leveraging issue in communications markets. Van Schewick's (2007) analysis of leveraging, *supra* n. 6, is a-theoretic, inaccurate and, as such, not recommended.

<sup>21</sup> M. Whinston, *Tying, Foreclosure, and Exclusion*, 80 *AMERICAN ECONOMIC REVIEW* 837-859 (1990).

<sup>22</sup> Unfortunately, theoretical analysis cannot provide an unambiguous answer, but it may be able to produce a leaning in one direction or the other. Even so, it is only the actions of buyers and sellers that will confirm incentives and abilities, and to date, no BSP has monopolized any form of content, made any attempt to do so, nor appears to have any plans to do so. The production of highly desirable and profitable content is no easy task, and there is no reason to believe the BSPs would have any advantage in doing so.

<sup>23</sup> See, e.g., Van Schewick (2007), *supra* n. 6, at 388 ("network neutrality regulation reduces network providers' profits").

<sup>24</sup> Net neutrality, as currently proposed, addresses arrangements between firms. In the monopolized state, there are no inter-firm transactions to regulate, so the assumption seems reasonable.

<sup>25</sup> Unless the regulation is not binding, in which case the incentive is equal.

<sup>26</sup> *In the Matter of Madison River Communications, LLC and affiliated companies*, CONSENT DECREE, DA 05-543, FCC File No. EB-05-IH-0110, FRN: 0004334082 (March 4, 2005) (available at: <http://www.fcc.gov/eb/Orders/2005/DA-05-543A2.html>).

<sup>27</sup> Van Schewick (2007), *supra* n. 6, incorrectly attributes the *Madison River* case to an inherent exclusionary motive of some "new" sort rather than to regulation.

<sup>28</sup> This analysis also brings up a theoretical and practical issue typically ignored in the net neutrality debate. Economic theory shows clearly that the incentive to sabotage rivals occurs only in the presence of price regulation (sabotage is loosely defined as a network firm using non-price measures to handicap rivals that require access to its network). The theory of "sabotage" originated in T. Beard, D. Kaserman and J. Mayo, *Regulation, Vertical Integration and Sabotage*, 49 *JOURNAL OF INDUSTRIAL ECONOMICS* 319-33 (2001). Subsequent papers confirm that regulation is a necessary condition for sabotage. See, e.g., D. Mandy and D. Sappington, *Incentives for Sabotage in Vertically Related Industries*, 31 *JOURNAL OF REGULATORY ECONOMICS* 235-260 (2007); T. R. Beard, G.S. Ford and L.J. Spiwak, *Why ADCo? Why Now? An Economic Exploration into the Future of Industry Structure for the "Last Mile" in Local Telecommunications Markets*, 54 *FED. COMM. L. J.* 421 (2002).

<sup>29</sup> See *Use of the Carterfone Device in Message Toll Tel. Serv.*, 13 F.C.C.2d 420, 423 (1968); see also *Hush-A-Phone Corp. v. Am. Tel. & Tel. Co.*, 20 F.C.C. 391, 419 (1955), *rev'd per curiam*, 238 F.2d 266 (D.C. Cir. 1956).

<sup>30</sup> *Supra* n. 18.

<sup>31</sup> Van Schewick (2007), *supra* n. 6; Chettiar and Holladay (2010), *supra* n. 7.

<sup>32</sup> Chettiar and Holladay (2010), *supra* n. 7, at 1 ("Currently, ISPs (such as Time Warner and Verizon) operate under a de facto net neutrality regime: they do not charge content providers (such as Yahoo and Wikipedia) for access to their subscribers.").