

Addressing the Next Wave of Internet Regulation: Toward a Workable Principle for Nondiscrimination

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Abstract

The ultimate formulation of the Federal Communication Commission's "nondiscrimination on the Internet" principle could have a significant impact on economic welfare and on innovation. In this paper, we explain the economics of discrimination as it applies to the Internet, and we offer a new approach for identifying anticompetitive discrimination. Our proposal would require a complaining content provider to prove (1) the broadband service provider has discriminated in favor of some affiliated content provider that is "similarly situated" to the independent content provider, (2) such disparate treatment is based on affiliation and not on some other consideration, (3) the independent content provider has been unreasonably restrained in its ability to compete, and (4) the harm it suffers as a result of the discrimination would likely redound to the harm of broadband users.

Keywords: Internet, net neutrality, discrimination, Federal Communications Commission, broadband

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I. Introduction

In a September 2009 speech, the Chairman of the Federal Communication Commission (“FCC”), Julius Genachowski (2009), called for a new nondiscrimination principle that would govern the behavior of suppliers of high-speed Internet access called broadband service providers (“BSPs”). Chairman Genachowski has proposed that the FCC ensure that BSPs do not:

[B]lock or degrade lawful traffic over their networks or pick winners by favoring some content or applications over others in the connection to subscriber’s homes, nor can they disfavor an internet service just because it competes with a similar service offered by that broadband provider. (Genachowski 2009, p. 12)

The ultimate formulation of the nondiscrimination principle could have a significant economic effect on BSPs, Internet content and application providers (“content providers”), and end-users. Thus, any rules that are developed must be carefully drawn or they may give rise to significant rent-seeking on the part of participants without commensurate gains in economic efficiency. In other words, the FCC needs to be careful it does not unintentionally harm consumers. Following the speech referenced above, the Commission (FCC 2009, ¶11) released a Notice of Proposed Rule Making in which it asked for comment on how to implement a nondiscrimination principle.

How the FCC or any communications regulator defines discrimination for purposes of a nondiscrimination obligation is of paramount importance. A broad definition would be

tantamount to line of business restrictions for BSPs and content providers. For example, if discrimination is defined as offering customized services to content providers—as proponents of net neutrality are inclined to do—then a nondiscrimination rule would preclude a network operator from, among other things, selling prioritized delivery or enhanced quality of service (“QoS”) to a content provider at any price.¹ In contrast, if discrimination were defined more narrowly to mean offering the same opportunities to all content providers, then a surcharge on enhanced QoS for certain application providers would be allowed so long as the terms of that QoS offering were extended to all similarly situated content providers.

Without reclassifying Internet service from its current status as an “information service,” any framework that the FCC adopts to regulate BSPs, including the enforcement of a nondiscrimination principle, will likely need Congressional authority. This is especially true in light of the FCC’s recent legal setback in *Comcast v. FCC*. In *Comcast*, the U.S. Court of Appeals for the D.C. Circuit ruled that the FCC did not provide adequate justification for regulating a BSP’s (Comcast’s) traffic-management policies under the Commission’s Title I “ancillary jurisdiction.” If the FCC does not have authority to regulate a BSP’s traffic-management policies under Title I, then it follows that the more invasive price regulation embedded in the net neutrality proposals would also likely be rejected by the courts. In light of *Comcast*, the FCC now faces two primary paths: (1) abandon its effort to impose price controls embedded in net neutrality and instead focus on addressing after-the-fact discrimination against content providers; or (2) reclassify BSPs under Title II and continue to pursue its net neutrality agenda. The chairman of the FCC has embraced the second

option. The first option, which is our preferred approach,² likely requires Congressional authority.

Several legal scholars have offered antitrust-based frameworks to guide the FCC's design of a nondiscrimination regime in the Internet space. For example, Yoo argues that the best approach would be to rely on "basic principles animating antitrust law to fill in the content of the case-by-case analysis," and that antitrust principles correctly "plac[e] the burden of proof on the party challenging a particular practice," which "ensure[s] every economic actor has enough breathing room to experiment with different approaches" (Yoo 2009, p. 28). Sidak (2006, p. 374-77) and Nuechterlein (2009, p. 20-65) argue that a net neutrality rule should essentially mirror antitrust requirements. Our proposal differs from the strict importation of antitrust law in that it would not require a complainant to demonstrate that the BSP had market power—a critical component of antitrust analysis. Rather, the complaining content provider would have to demonstrate, among other things, that (1) it was discriminated against by a BSP on the basis of affiliation, and (2) as a result, it was impaired in its ability to compete effectively against the affiliated content provider. Discrimination on the basis of affiliation is not a recognized violation of the antitrust laws; the closest offense is a discriminatory refusal to deal, but to prevail in those cases, a plaintiff must prove, among other things, that the defendant has a duty to conduct business with the plaintiff, often by showing a prior conduct of dealing. Accordingly, we argue it is better to import the nondiscrimination principles that exist in communications law (in the Cable Act particularly) when designing a regulatory regime for the Internet space. Our proposal follows antitrust principles, however, in the sense that it places the burden of

proof on the complaining party, and would presume that any contract between a BSP and a content provider was welfare-improving.

Our paper is organized as follows. In Part II, we explain the economics of discrimination. Discrimination in its standard sense raises concerns when it interferes with what is often referred to by philosophers, sociologists, and economists as “equality of opportunity” or “freedom of opportunity.” However, a nondiscrimination policy that would limit the ability of BSPs and content providers to contract on terms that are (1) mutually agreeable to both parties, (2) available to all prospective consumers, and (3) do not impose significantly externalities on third parties is inimical to promoting equality of opportunity. Given the two-sided nature of the Internet access market, a blanket rule forbidding BSPs from offering QoS and charging for it would necessarily prevent BSPs from using incremental revenues garnered from the content side of the market to subsidize end-users. In other words, banning companies from being able to contract with each other for mutually desirable objectives and on mutually agreeable terms will have immediate and measurable impact on consumers.

In Part III, we propose a case-by-case approach to identify anticompetitive discrimination. Our proposal would require a complaining content provider to prove (1) the BSP has discriminated in favor of some affiliated content provider that is “similarly situated” to the independent content provider, (2) such disparate treatment is based on affiliation and not on some other consideration, (3) the independent content provider has been unreasonably restrained in its ability compete, and (4) the harm it suffers as a result of the discrimination would likely redound to the harm of broadband users. The first prong highlights the importance of affiliation for the nondiscrimination standard; without it, a

BSP lacks the incentive to discriminate in an anticompetitive way. The second prong is needed to rule out the possibility that the disparate treatment is not based on some efficiency consideration. The third prong, which requires a showing of competitor injury, is needed to prevent spurious cases from draining the FCC's resources. The fourth and final prong is required to differentiate cases of foreclosure (where a rival is harmed) and anticompetitive foreclosure (where both a rival and end-users are harmed). We conclude by evaluating how cases like *Madison River* and *Comcast-Bit Torrent* would be treated under our proposed framework. In sum, the regulator must identify the key elements of those cases that made them anticompetitive (for example, affiliation, competitor injury), and incorporate those elements in its case-by-case framework.

II. The Economics of Internet Discrimination

From an economic perspective, any nondiscrimination policy must be evaluated based on its effect on the allocation of society's scarce resources in the short term, and on innovation and economic welfare in the longer term. Defining discrimination in such a way as to bar voluntary agreements between BSPs and content providers for superior QoS would reduce society's economic welfare in the aggregate, and is inconsistent with the standard meaning of the term discrimination. In Part II.A below, we articulate a standard for defining the term discrimination that is consistent with the principles that normally underlie nondiscrimination policies and that is useful for distinguishing good economic policy from bad economic policy. In Part II.B, we discuss the potential harm that forbidding contracts for superior QoS would have on BSPs, content providers, and end-users in terms of the efficiency criteria described above. Finally, in Part II.C, we discuss how

discrimination that is likely to reduce economic efficiency can be distinguished from legitimate business conduct.

A. An Economic Definition of Discrimination

Economic discrimination is a form of discrimination based on some exogenous factors (Becker 1971). It is related to but not the same as price discrimination; there, a firm with market power charges different prices for the same good or service based on a customer's willingness to pay, a characteristic that is by definition fixed. The most studied form of economic discrimination occurs with workers, in the form of wage discrimination or hiring discrimination (Donohue & Siegelman 1991). For example, wage discrimination has been studied by comparing the wages of certain minorities to the wages paid to others for the same job with the same experience and the same responsibilities. From the perspective of the discriminator, an entity that is subject to discrimination is identical to an entity that is not subject to discrimination except for the former's membership in the category that prompts the discrimination. Consequently, in the absence of that categorical difference, the entities would be treated equally. Economic discrimination against an individual can be motivated for several reasons, including racism, sexism, or ageism. Economic discrimination against a rival firm can be motivated for private efficiency reasons or for anticompetitive reasons. When a firm is vertically integrated, it may have incentives to discriminate against an unaffiliated upstream rival, depending on whether the associated gains to the affiliated upstream division (from less competition) offset the associated losses to the affiliated downstream division (from fewer upstream inputs) (Rubinfeld & Singer 2001). Economic discrimination can have both positive and negative effects, and the actual impact is necessarily a fact-specific investigation.

From a policy standpoint, economic discrimination raises concerns when it interferes with “equality of opportunity” (Arneson 2002; Friedman 2002, p. 208)³ or “freedom of opportunity” (Sen 2004, p. 8-13). Discrimination against an individual may reduce consumer welfare when it limits the ability of that person to avail himself of the best technology or environment to be a productive member of society. Discrimination against a rival firm may reduce welfare when it impairs the rival’s ability to compete effectively. In a competitive market, an individual firm will not be able to effectively limit the opportunities of individuals via discrimination because market forces will undermine the firm’s incentive and ability to discriminate. As Nobel-prize-winning economist Gary Becker explained, a firm that specialized in hiring equally productive minorities could force incumbent firms to relinquish their taste for discrimination. Similarly, competitive markets can be relied upon to undermine the impact of discrimination by firms against their rivals, as consumers can substitute to other firms that do not engage in the discriminatory practice—for example, to obtain content that is not accessible on the discriminator’s network. On the other hand, where competition is significantly imperfect, a well-designed government policy may increase economic efficiency and consumer welfare.

With this understanding of economic discrimination in mind, in the remainder of this section, we assess the policy implications of the broad discrimination standard suggested by net neutrality proponents. We demonstrate that the best economic policy towards the provision of broadband Internet service would encourage equality of opportunity rather than codifying laws that would actually institutionalize discrimination against content providers and consumers who would benefit from superior service.

Policies designed to promote equality of outcomes will counterproductively reduce economic efficiency if they are directed at legitimate business conduct.

B. The Economic Consequences of a Broad Discrimination Standard

A careful consideration of the economic forces underlying the provision of broadband internet services makes clear why a communications regulator should design rules that promote competitive outcomes rather than restricting choice. The provision of broadband Internet service is what is known in economics as a “two-sided” market because BSPs interact with two distinct groups of consumers, content providers and end-users (Evans 2003; Rochet & Tirole 2003). Content providers’ demand for broadband service is driven by their desire to reach end-users, and end-users’ demand for broadband service is driven by the content on the Internet. Consequently, BSPs must consider this interdependence when setting their prices. As economists Jean-Charles Rochet and Jean Tirole (2003) explained in their seminal paper on competition in two-sided markets: “To succeed, platforms in industries such as software, portals and media, payment systems and the Internet, must ‘get both sides of the market on board.’” Economic research on two-sided markets has demonstrated that socially optimal pricing (the set of prices that maximizes the value of the network) requires the platform to charge lower prices to the side of the market that is more sensitive to price increases (Bolt & Tieman 2005, p. 1).⁴ A blanket rule forbidding BSPs from charging content providers for QoS would necessarily prevent BSPs from using incremental revenues garnered from the content side of the market to subsidize end-users.⁵ Although BSPs would seek to recoup the foregone revenues earned from content providers by raising prices somewhat on end-users (the “seesaw” principle of two-sided markets (e.g. Rochet & Tirole 2006)), because end-users

are more price sensitive than content providers, the BSP's revenues and thus profits would likely decline relative to a world without net neutrality. As end-user prices increase, fewer end-users join the network, thereby reducing the value of the network to content providers. Thus, a broad discrimination standard as embraced by net neutrality proponents would perversely attenuate the value of the Internet to both content providers (due to fewer end-users) and end-users (due to higher access prices) in aggregate.

This potential harm resulting from a blanket prohibition against contracts for QoS would likely be exacerbated when transaction costs are considered. Each end-user consumes a variety of content while each content provider is focused on maximizing the value of its unique offering. Thus, content providers undoubtedly have a better initial understanding of their QoS requirements for a particular application than end-users do; under a net neutrality regime, end-users would not only bear the cost of paying for superior service, but they also would be forced to make more complex decisions when purchasing broadband service. Although BSPs have to provide service and contract with end-users, including contracts that contain a menu of *bandwidth* options (for example, download speeds of 5 Mbps or 50 Mbps), the introduction of a new dimension of choices relating to the QoS requirements by individual applications would represent a significant increase in transaction costs. For example, end users might need to assess the QoS requirements of their favorite online portal or VoIP service. These assessments are would likely be quite difficult for a typical end-user to make.

Furthermore, consumer contracts for broadband service are not perfectly malleable, but instead generally entail specific capacity constraints. Even if end-users perfectly understood their bandwidth and QoS requirements, the practical limitations inherent in

contracting for broadband service would likely mean that end-users consider their general bandwidth and QoS needs rather than optimizing their QoS requirement for each type of application individually.

Rules forbidding contracting for QoS between content providers and BSPs would also increase transaction costs. Because the content side of the market is more concentrated than the end-user side of the market (that is, there are more end-users than content providers), BSPs can reduce their costs by contracting directly for QoS with content providers who serve large numbers of end-users. In this sense, net neutrality would be tantamount to a rule that required credit cards to negotiate fees for purchases a given establishment with end-users rather than with merchants.

Net neutrality regulation is also likely to reduce innovation in both the development of network infrastructure and the provision of Internet-based content. Proponents of net neutrality regulation have tried to co-opt the innovation argument by contending that small content-providers at the fringe of the network will be less innovative as a result of contracting for QoS (with positive prices). Taken to its logical conclusion, however, this argument implies that Internet access should be provided free of charge to all content providers to maximize fringe innovation. But this argument assumes that the network infrastructure of the internet is simply a commodity product that can be supplied by a number of fungible BSPs. It ignores the fact that both the initial establishment of the network and its ongoing management require significant investment. Because innovation occurs at both the content level and the network level, the following economic considerations must be taken into account in contemplating the outcome of a broad discrimination standard.

- *First*, forbidding content providers from contracting for superior QoS is likely to deter innovation from content providers whose business strategy involves gaining a competitive advantage through investment in superior QoS to end-users. Constraining rivals who want to invest in offering a superior product to end-users that requires QoS to run effectively is tantamount to a policy that is aimed at deterring innovation for the purpose of maintaining absolute equality of outcome.
- *Second*, constraining BSPs' ability to maximize their profits may retard network innovation.
- *Third*, to the extent that there is a large amount of demand for superior service, the likely outcome is higher prices for broadband service to end-users—an outcome that will perversely deter the fringe content innovation that net neutrality advocates ostensibly aim to protect.
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In contrast, a policy that rejects net neutrality and instead protects and fosters equality of opportunity (and not equality of outcome) promotes economic efficiency, both in the static sense of resource allocation and in the dynamic sense of facilitating more efficient investment and innovation. The best way to promote competition and entry among content providers is to ensure entrants that they will have all the tools they need, including the appropriate level of QoS, to compete against incumbents. Permitting (nondiscriminatory) contracting for QoS promotes equality of opportunity in the sense that similarly situated content providers share the same opportunity to advance. The advent of new applications that make use of greater-than-average QoS would stimulate demand for those (often higher-value) services, allowing those content providers to earn profits. Finally, investment will flow away from first-generation content applications to the next-generation, QoS-needy applications in search of those higher returns.

C. An Economic Approach for Distinguishing Discriminatory Conduct that Threatens Economic Efficiency from Legitimate Business Conduct

To design a nondiscrimination policy that promotes economic efficiency, one must first understand the conditions under which a BSP has both the incentive and the ability to discriminate in an economically inefficient manner. In the absence of significant market power in the access market, it is unlikely that a BSP would have the *ability* to engage in anticompetitive discrimination. Indeed, a necessary condition for adverse welfare effects in nearly every economic model of vertical foreclosure is that the firm in question has market power—that is, the ability to raise price above competitive levels or exclude rivals. When a firm lacks market power, vertical restraints cannot in theory be motivated by anticompetitive reasons (Carlton 2001), and are therefore more likely motivated for efficiency reasons.

Market power is the ability of a firm to raise prices above competitive levels. Although it is difficult to know with certain what competitive levels look like for broadband service, in our opinion, BSPs generally lack market power. This lack of market power is reflected by the rapidly declining prices for broadband services (e.g. International Telecommunications Union 2009, p. 65-66; OECD 2008, Figure 1.14; Pew Internet 2009, p. 25)⁶ and the significant expansion of output (Pew Internet 2009, p. 3; SNL Kagan 2008; Federal Communications Commission 2008A, Appendix B, Table 14; CTIA 2008, Attachment 1),⁷ both of which are inconsistent with the notion of market power. Of course, other factors, such as declining costs, might be partially responsible for the broadband price declines, but we think fiber deployments along with wireless broadband offerings are the primary drivers behind the broadband price declines.⁸ More importantly, a *local* BSP

lacks the ability to foreclose a content provider that generates content with *nationwide* or *global* appeal. Most content providers are not vying for the consumers in one particular locality. When viewed in this light, the market structure of the U.S. broadband market is not conducive to an exercise of market power. Table 1 shows the national market shares for the major BSPs in the United States.

TABLE 1: U.S. BROADBAND MARKET SHARES FOR TOP 15 PROVIDERS (THIRD QUARTER 2008)

Rank	BSP	Subscribers (millions)	Market Share
1	AT&T (business and consumer DSL, U-Verse, and satellite)	14.8	15.4%
2	Comcast (cable broadband)	14.7	15.3%
3	Time Warner (cable broadband, business and residential)	8.6	9.0%
4	Verizon (FiOS and DSL)	8.5	8.8%
5	America Online (all U.S. AOL brand accounts) [†]	7.5	7.7%
6	EarthLink (DSL, cable, satellite) [†]	3.0	3.1%
7	Charter (cable broadband)	2.9	3.0%
8	Qwest (DSL only)	2.8	2.9%
9	Cablevision (cable broadband)	2.4	2.5%
10	United Online (counting paid access only)	1.5	1.5%
11	Embarq (DSL only, formerly part of Sprint)	1.4	1.4%
12	Windstream (DSL only, formerly ALLTEL and Valor)	.96	1.0%
13	Mediacom (cable broadband, dialup, and SMB broadband)	.73	0.8%
14	CenturyTel (DSL only, no dialup)	.63	0.7%
15	Citizens (DSL only)	.57	0.6%

Source: ISP-Planet, Top 23 U.S. ISPs by Subscriber: Q3 2008, Dec. 2, 2008 (based on analysis from Jupiter Research), available at <http://www.isp-planet.com/research/rankings/usa.html>.

Note: [†] Includes dialup customers. To the extent that dialup customers were removed from the table, the shares would not change significantly so long as former dialup customers converted to broadband customers in proportion to the existing broadband shares.

As Table 1 shows, the largest two BSPs each control a mere 15 percent of the market. Unfortunately, the data combine business and residential subscribers, as this is how BSPs typically record their broadband subscribers. To assess an allegation of discrimination by a content provider that served just residential customers (or just business customers), more granular data would be needed. Finally, the share data are from the second quarter of 2008; while it is possible that one BSP or even a class of BSPs (for example, cable modem providers) has realized faster customer growth than others, the overall structure of the market could be affected through consolidation only—yet we are not aware of any such activity.

Relevant markets do not exist in a vacuum; they depend on the nature of the conduct and the type of product at issue. Proponents of net neutrality assume incorrectly that the relevant geographic market to assess the alleged anticompetitive effects from enabling BSPs and content providers to *contract for QoS* is the local market—that is, they assume that a content provider is offering content that is particular to a given locality and therefore requires access to a BSP's subscribers in a given locality. (We later discuss a different type of conduct in *Madison River*, which might warrant a different relevant geographic market.) The problem with that argument, however, is that nearly all Internet content that might require enhanced QoS is not local. An online gaming portal may sell its wares to customers beyond Toledo, while a telemedicine application seeks access to customers beyond Fort Worth. In contrast, a professional sports team with a pre-determined television footprint established by a league is constrained to compete for distribution rights in something closer to a local market. At a minimum, the relevant geographic market for most QoS-needy Internet content is national, and it is more likely

international. As Table 1 shows, the national broadband access market is so unconcentrated (the largest provider, AT&T, has less than 16 percent market share) that no single BSP could foreclose a national content provider from a significant share of the broadband market. Indeed, if BSPs possessed the market power vis-à-vis content providers that net neutrality proponents assert, then BSPs would exploit such power today by raising the price of broadband Internet access to content providers. Although broadband Internet access is a complementary input to enhanced QoS in the production process for content providers, broadband Internet access has *not* (at least for now) been the subject of the net neutrality debate.

Even if one were to assume there is market power in the supply of broadband access,⁹ in the absence of vertical integration into the content space, a BSP will lack any *incentive* to discriminate between content providers who demand the same service. In particular, a vertically integrated BSP will only have an incentive to discriminate against content that competes directly with content provided by an upstream affiliate of the BSP. This incentive arises from the fact that harm to the rival content provider will aid the affiliated content provider, leading to greater profits for the BSP. Accordingly, as a gateway issue, a content provider that seeks to bring a discrimination complaint against a BSP should be required to demonstrate that it is “similarly situated”—that is, it competes in some meaningful sense for end-users and advertisers—to the upstream *affiliate* of a BSP. Without evidence of affiliation, there is no incentive to discriminate.

It is essential to define “similarly situated” such that the regulator’s nondiscrimination policy promotes equality of opportunity. As discussed above, discrimination, as far as the term is construed in an economically useful sense, involves an

entity withholding an opportunity, good, or service from one group but providing it to another based solely on a fixed, identifying characteristic. On the other hand, offering different services at different prices does not represent discrimination under this standard *so long as the offering is available to all consumers on equal terms*. Consequently, discrimination is a relative concept—one cannot prove discrimination by looking at the absolute level of treatment afforded to one entity. In the context of the net neutrality debate, the crucial consideration is whether a content provider has been denied the *same* treatment afforded to a BSP's affiliated content provider because of its lack of affiliation with the BSP.

In sum, if there is no difference in the treatment across two similarly situated applications, then there is no discrimination. If there is a difference in the treatment across two similarly situated applications, but if the difference in treatment is not predicated on affiliation, then the BSP has no incentive to degrade the opportunities available to the content provider; the ostensible difference in treatment at issue should be treated as legitimate business conduct. To make matters concrete, the possibility that Verizon (to pick one BSP) might charge Sony (to pick one content provider) more for providing it a different service (enhanced QoS) from *all other* application providers does not constitute discrimination. Discrimination would only be a concern if (1) Verizon refused to extend the same terms that it offered to Sony for enhanced QoS to a *similarly situated* content provider, and (2) Verizon's disparate treatment of that content provider was based on its affiliation with Sony. But these requirements would only be the beginning of our inquiry. As we describe below, even if those two conditions were satisfied, intervention would not be justified without additional evidence of competitive harm.

D. The Ill-Conceived Economic Bases for Barring Contracts between BSPs and Content Providers

Proponents of net neutrality offer two reasons why, even in the absence of market power, BSPs cannot be trusted to choose the “right” price for QoS. *First*, some proponents, including Barbara Van Schewick (2007, p. 378),¹⁰ argue that the mere “potential for such [QoS] fees may deter outsiders from investing in long-term research and development that could benefit all of society” (Federal Communications Commission 2009, ¶63). We have already addressed this argument above; to reiterate, this concern is purely speculative (no one has estimated a content provider’s elasticity of demand for capital given an increase in the price of QoS), and it appears to place an inappropriate amount of weight on investment at the “edge” of the network (by content providers) relative to investment at the “core” of the network (by BSPs). Moreover, it presumes incorrectly that content providers with no demand for QoS enhancements—likely a large swath of all applications—could not decline the QoS offerings without incurring a significant degradation of their current service level.

Second, proponents of net neutrality, including Nicholas Economides (2008; Economides & Tåg 2007), offer a novel, collective-action theory to explain a purported market inefficiency in broadband that leads to the wrong price for QoS: “Even where there is effective competition in the Internet access market, individual broadband Internet access service providers may charge inefficiently high prices to content, application, and service providers, even though it may be in the *collective interest* of all providers to charge a lower price or zero price in order to maximize innovation at the edge of the network and thereby increase the overall value of broadband Internet access” (Federal Communications Commission 2009, ¶68). According to this logic, if BSPs could somehow coordinate in the

setting of prices for QoS, they would choose a zero price; yet competition among BSPs drives them to set an inefficiently positive price. (Of course, if the jointly profit-maximizing price for QoS were zero, and if net neutrality allowed BSPs to achieve that allegedly optimal solution, then BSPs would favor net neutrality regulation! Alas, they do not.) Again, this basis for intervention is purely theoretical. Accordingly, we conclude that proponents of net neutrality have not developed a strong economic argument for barring contracts for QoS between BSPs and content providers.

III. A Consumer-Oriented Policy Approach

In addition to offering guidance on the definition of discrimination, we describe how a regulator could implement a case-by-case approach to adjudicate discrimination complaints brought by content providers. Of course, the development of a regulatory solution such as the one we propose here presumes (perhaps incorrectly) that anticompetitive behavior by a BSP cannot be remedied through antitrust enforcement. Rather than taking sides in that debate, we assume that there is a good basis for discrimination complaints in the Internet space to be adjudicated at the Commission (or, more precisely, by an administrative law judge appointed by the Commission). Possible justifications for FCC involvement could include (1) the FCC may develop a special expertise in handling such complaints, (2) market participants would know in advance how each case would be treated at the FCC (whereas the standards applied in a court could vary by circuit), and (3) the FCC's public interest standard might accommodate other interests (such as diversity) that are beyond the narrow objective of antitrust enforcement (maximizing consumer welfare).

A. *The Appropriate Policy Concern Is Anticompetitive Discrimination*

A key purpose of regulatory policy should be to promote consumer welfare. We have already shown that if discrimination is defined in a non-standard and broad manner, the resulting policy is likely to harm consumers despite its best intentions. In this section, we use the definition of discrimination adopted in the previous section to develop a policy that focuses on deterring discriminatory conduct that is likely to harm consumers—that is, anticompetitive discrimination. The welfare effect of banning certain conduct by BSPs is ambiguous. In a June 2007 Staff Report, the Federal Trade Commission (2007, p. 8) noted that the principal concerns of net neutrality proponents—namely, exclusive dealing, vertical integration, and discriminatory conduct vis-à-vis content providers—are anticompetitive *only under certain conditions*.¹¹ Because there are plausible, procompetitive reasons for these strategies, the concerns raised by net neutrality advocates are probably best addressed on a case-by-case basis, using an *ex post* enforcement regime. Any policy that seeks to achieve “nondiscrimination” should, at a minimum, be flexible enough to accommodate certain types of voluntary business agreements.

B. *Identifying Anticompetitive Discrimination*

Based on our analysis above, antitrust principles, and existing FCC procedures for resolving discrimination in other contexts, a content provider should have to show the following if it wanted to prevail in a discrimination complaint against a BSP:

- (1) the BSP has offered inferior terms to a “similarly situated” independent content provider vis-à-vis an affiliated content provider;
- (2) the resulting disparate treatment is based on affiliation and not based on some efficiency rationale;

- (3) as a result of the disparate treatment, the content provider has been unreasonably restrained in its ability to compete;
- (4) the resulting harm the content provider suffers would likely redound to the harm of broadband users.

The first three elements of our proposed framework are largely transplanted from the FCC's evidentiary requirements in discrimination complaints in the video programming space. In particular, an independent cable network must demonstrate certain elements to prevail in a discrimination complaint against a cable operator. In accordance with the 1992 Cable Act, the Commission adopted an implementing regulation under Regulation section 76.1301(c), which provides that:

No multichannel video programming distributor shall engage in conduct the effect of which is to *unreasonably restrain the ability of an unaffiliated video programming vendor to compete fairly* by discriminating in video programming distribution *on the basis of affiliation* or non-affiliation of vendors in the selection, terms, or conditions for carriage of video programming provided by such vendors. (47 C.F.R. §76.1301(c), emphasis added)

To prove discrimination, independent network operators have been required to show that their networks are "similarly situated" to the affiliated network that is allegedly getting preferential treatment (our first prong) (Sippel 2009, p. 9-17).

Applied here, the first requirement is intended to rule out discrimination complaints brought by a content provider that does not compete in any significant way against the affiliated offering of a BSP. As we demonstrated above, a BSP lacks the *incentive* to engage in anticompetitive discrimination in any case where the complaining content provider does not threaten an affiliated application. Accordingly, a complaining content provider should be required to demonstrate that its application is "similarly situated" with the BSP's affiliated application. Examples of two similarly situated applications that could take

advantage of similar QoS offerings are Sony's online gaming portal, Station.com (available at <http://www.station.sony.com>) and Nintendo's online gaming portal, Nintendo's Wi-Fi connection (available at <http://www.nintendo.com/games/wifi>). So long as the BSP were not affiliated with either Sony or Nintendo, there is no reason for the BSP to offer preferential terms for QoS to one application over the other. Moreover, there is no reason why a content provider with basic text and graphics, such as a brick-and-mortar vendor of high-end chocolates or even a newspaper with a graphical-intensive website such as the WashingtonPost.com, would seek the same QoS offering as an online game portal—the end-user experience cannot be enhanced because those applications do not depend on it. It should be noted that a content provider that does not compete directly with online gaming portals—for example, an online healthcare application—could demand a similar level of QoS as that of an affiliated, online gaming portal. Given the lack of competition with the affiliated application, however, we cannot conceive of any anticompetitive motivation leading the BSP to offer inferior terms to that content provider. In that instance, the regulator should allow the marketplace to dictate the terms of the enhanced QoS.

Assuming the first requirement is met—that is, the BSP is shown to have afforded disparate treatment to two similarly situated applications—the complaining content provider must next demonstrate that the disparate treatment is based on affiliation. Consider the case in which a BSP is affiliated with content provider *A*, content provider *A* and *B* are similarly situated, and the BSP offers enhanced QoS to content provider *A* free of charge but seeks a positive price for QoS from content provider *B*. It is possible that the BSP seeks a positive price from content provider *B* for reasons unrelated to affiliation. For example, suppose that content provider *B*'s application places greater demands or imposes

greater costs on the BSP's network. In that instance, the BSP would be justified in seeking a higher price from content provider *B*. Accordingly, the second evidentiary requirement is intended to rule out discrimination complaints that would seek to ban conduct that was motivated for efficiency reasons.

Assuming that the first two requirements are met, the complaining content provider would then have to show that, as a result of the disparate treatment by the BSP, the content provider has been unreasonably restrained in its ability to compete against the BSP's affiliated application. Given the current market structure of the broadband access market (see Table 1 above), we believe that it would be very difficult for any content provider to satisfy this requirement. Even if a BSP with 16 percent market share (the largest share among current U.S. BSPs) were to offer QoS on inferior terms to a content provider, that content provider could still access the BSP's customers—albeit in an impaired state *relative* to a world in which it secured its desired level QoS at reasonable terms. We cannot envision a situation in which a BSP would foreclose a content provider from its customers entirely. The relevant question becomes: Does “degraded” access to 16 percent of U.S. broadband customers constitute significant foreclosure such that the content provider is unreasonably restrained in its ability compete effectively against the affiliated content provider? To the extent that antitrust law provides any guidance to this question, the answer is no. According to the leading antitrust treatise, foreclosure shares below 20 percent are not considered to be anticompetitive by U.S. courts (Areeda 1991, p. 375, 377, 387; Hovenkamp, p. 152, 160). It is possible that future consolidation among BSPs could give a single BSP a nationwide market share in excess of 20 percent, at which point a complaining content provider would have a better chance of satisfying this requirement.

Finally, assuming that the first three requirements are met, the complaining content provider would have to demonstrate that its resulting impairment would redound to the harm of end-users. This inquiry would turn on the level of competition for the application at issue. To continue our example, suppose that a BSP with 25 percent nationwide market share affiliates with an online gaming portal and offers that portal enhanced QoS on terms that are superior to those offered to the complaining content provider. Suppose further that the market for online gaming portals is subject to imperfect competition, but that most suppliers have achieved the requisite economies of scale despite the challenged conduct. Given this fact pattern, it would be highly difficult for the complaining content provider to establish that its impairment would redound to the harm of end-users. There is a large economic literature, including the literature on raising-rivals'-costs, that explains the conditions under which *competitor* foreclosure leads to *competitive* harm (Salop & Scheffman 1987; Rey & Tirole 2007; Carlton & Perloff 2005, p. 371). Unless the complaining content provider can empirically ground its case in one of these models, its discrimination complaint should be dismissed.

Failure to satisfy any one of those evidentiary requirements would imply that the challenged conduct is likely procompetitive, and therefore should extinguish the complaining party's case.

C. Application of Our Proposed Standard

It is useful to analyze how our proposed framework would apply in prior discrimination cases that have been brought to the FCC. In *Madison River*, a local telephone company and provider of digital subscriber line (DSL) service was allegedly blocking ports that were typically used by Vonage customers to make VoIP telephone calls. In 2005, the

Enforcement Bureau entered into a consent decree with Madison River (Federal Communications Commission 2005) that halted that practice. In *Comcast*, a local provider of cable modem service was allegedly blocking BitTorrent uploads, which were used to transfer large files such as movies. In 2008, the FCC (2008B) required Comcast to disclose its network-management practices so that the agency could ensure compliance with Comcast's voluntary commitment to end its challenged practice.

How might Vonage and BitTorrent fare as complaining parties under our proposed framework? We begin with the Vonage case. Vonage would have to demonstrate that Madison River offered it inferior terms vis-à-vis an affiliated content provider. Here, the "affiliated content provider" was arguably Madison River's affiliated voice-service division, and the inferior treatment afforded to Vonage was straightforward. Assuming there was no compelling efficiency rationale that could explain Madison River's disparate treatment of two similarly-situated applications, Vonage would have to demonstrate that it was unreasonably harmed in its ability to compete in the provision of voice services. At this point, the inquiry would turn on Madison River's "foreclosure share"—that is, the percentage of voice customers foreclosed from Vonage in the relevant geographic market. If the relevant geographic market was deemed to be the nation, then the foreclosure share would be trivial. On the other hand, if the relevant geographic market was deemed to be Madison River's local telephone footprint, then the foreclosure share would be significant. To address that question, the FCC would have to determine whether Vonage could compete effectively in the supply of voice services without access to Madison River's DSL customers.

Finally, even if Vonage could demonstrate injury, it would have to show that end-users were harmed as a result of Madison River's conduct. This analysis would turn on the

extent to which other voice providers, including cable operators, imposed sufficient price discipline on Madison River such that the impairment of a VoIP provider would not materially increase Madison Rivers' power to raise prices. Although we are not certain how such a case would have fared, it is clear that the case could not be rejected out of hand under our framework.

In the BitTorrent-Comcast matter, the initial sticking point for BitTorrent would be to demonstrate that Comcast's affiliated video service was similarly situated to the Internet content (which included movies) being transferred via BitTorrent. Without evidence of competition, Comcast would lack a plausible basis for discriminating against BitTorrent on the basis of affiliation. Assuming that BitTorrent could satisfy the similarly-situated prong, the inquiry would turn to whether Comcast had an efficiency basis for throttling BitTorrent users. Comcast has argued that BitTorrent's users imposed significantly greater burdens on Comcast's cable modem network, which relies on a shared architecture, than non-BitTorrent users. In the absence of a pricing mechanism to discourage overuse of the network's resources, the throttling of BitTorrent traffic may constitute a reasonable network management tool. Assuming BitTorrent could demonstrate that Comcast's conduct was based on affiliation, BitTorrent would then have to demonstrate injury and harm to end-users. Again, the inquiry would turn on the relevant geographic market; if the provision of file transferring services used to provide Internet video was deemed a national market, then the associated foreclosure share would be small. Moreover, BitTorrent would have to prove that, but for its impairment, Comcast would be forced to lower the price of its affiliated video service. In sum, we believe that Vonage would stand a much better chance under our proposed framework than would BitTorrent.

Our framework is not meant to resolve these cases *ex post*. Instead, it is meant to provide guidance for the Commission on whether and how to consider a discrimination complaint brought by a content provider. The four-pronged test would serve as a filter for making sure that the “right” types of cases reached the Commission in the first place. For example, a key factor in both the Vonage and BitTorrent cases was the critical role of affiliation in generating the potential for competitive harm. If a content provider could not demonstrate that the alleged discrimination was predicated on affiliation, then the case would not survive under our standard. Even in the presence of an affiliation, however, the regulator should not automatically intervene to breathe life into a competitor who would otherwise wilt under natural market forces. Instead, the objective should be to preserve the competitive process and to promote consumer welfare.

A final issue concerns remedies. Conditional on a complaining content provider satisfying the four prongs of our proposed standard, the inquiry would turn to the appropriate price of access for a BSP’s customers or the appropriate price of a QoS contract. The but-for price is the price that would be charged in the absence of vertical integration. The price that a vertically integrated BSP charges its affiliated content provider may not serve as the but-for price, as that price is an internal transfer and thus can be raised without repercussion. Similar issues have emerged in the Commission’s review of program access complaints by video distribution rivals against a vertically integrated cable television provider. A full analysis of but-for prices is beyond the scope of this paper, but a logical starting place would be the prices charged for QoS by non-vertically integrated BSPs for the same level of QoS for the same type of application. As of the time of this paper, most BSPs were not vertically integrated into content. However, in late 2009, Comcast

announced its planned acquisition of NBCU, which would convey an equity interest in the popular online video portal Hulu.com. The Commission's treatment of that component of the proposed acquisition could have a significant impact on the net neutrality debate. In particular, if the Commission were to permit Comcast to maintain NBCU's ownership in Hulu.com, then the prospect of discriminatory conduct—for *one* vertically integrated ISP—would increase materially.

IV. Conclusion

Regulatory economics teaches that, in the absence of any good reasons not to trust market-based outcomes, intervention will likely reduce social welfare. By embracing net neutrality, a regulator must reject the notion that markets can be trusted to set prices for enhanced services, such as QoS. According to its proponents, any positive price for QoS constitutes the wrong price from society's perspective. The reason why economists prefer the market mechanism over regulatory fiat is that, in the absence of market failure, prices can be relied upon to efficiently allocate scarce resources in an economy. But net neutrality proponents seem willing to embrace the notion that no prices for such services are better than a positive price. The unintended consequence of interfering with the price-setting process in this way would likely be to divert resources away from applications that could make use of QoS and to place upward pressure on the price of broadband for end-users.

1. The precise definition of net neutrality has evolved over time. An early strand of the net neutrality literature argued that there should be no tiered pricing of QoS to either end-users or to content providers. A current strand of the literature, as manifested in the Commission's net neutrality proposal, would permit tiered pricing to end-users but not to content providers. We critique the more recent strand of the net neutrality literature in this paper. For an example of an economic analysis of the (tenuous) conditions under which a zero-pricing rule for content providers could improve welfare, see Economides and Tåg (2009). But those conditions are not necessarily satisfied in practice, (Caves2010).

2. The authors have written extensively on the economics of net neutrality (e.g. Hahn, Litan and Singer2007; Litan and Singer2007; Singer 2007; Hahn and Litan 2007).

3. Arneson (2002) states, “Social mobility may be possible in a caste society, but the process whereby one is admitted to a different level of the hierarchy is open only to some individuals depending on their initial ascriptive social status. In contrast, when equality of opportunity prevails, the assignment of individuals to places in the social hierarchy is determined by some form of competitive process, and all members of society are eligible to compete on equal terms.”

4. Bolt and Tieman (2005, p. 1) write, “In two-sided markets, one widely observes skewed pricing strategies, in which the price mark-up is much higher on one side of the market than the other. Using a simple model of two-sided markets, we show that, under constant elasticity of demand, skewed pricing is indeed profit maximizing. The most elastic side of the market is used to generate maximum demand by providing it with platform services at the lowest possible price. Through the positive network externality, full participation of the high-elasticity, low-price side of the market increases market participation of the other side. As this side is less price elastic, the platform is able to extract high prices. Our skewed pricing result also carries over when analyzing the socially optimal prices.”

5. Although it is true that content providers already make contributions to revenue via access charges, some content providers would be willing to make even greater contributions to revenue if offered higher QoS.

6. *See, e.g.*, International Telecommunications Union (2009, p. 65-66) (finding that the United States is the most affordable on a currency-exchange-rate basis, and fourth most affordable on a PPP basis); OECD (2008, Figure 1.14) (finding that the low end of U.S. broadband prices in 2007 ranked *fifth* in a 30-country survey of prices); Pew Internet (2009, p. 25), (finding that average U.S. broadband prices fell by four percent between December 2005 and April 2008, even as speeds increased).

7. Pew Internet (2009, p. 3) (finding increases in broadband penetration from 47 percent in 2007 to 63 percent by 2009); SNL Kagan (2008) (finding that 92 percent of U.S. homes have access to cable modem service); Federal Communications Commission (2008A, Appendix B, Table 14) (finding that 82 percent of U.S. homes have access to DSL); CTIA-The Wireless Association, (2008, Attachment 1) (finding that 92 percent of the population has access to a wireless 3G network in their primary place of residence).⁸ A formal proof of lack of market power is beyond the scope of this paper.

9. Thus, assuming for argument’s sake that the BSP market is defined on a local basis, there may be cases where the four conditions for potential harm that we outline below are present. In that event, the Commission could then address discrimination on a *case-by-case* basis—an approach that, as we later discuss, is consistent with the case law in this area.

10. Van Schewick (p. 378) (arguing that network neutrality regulation increases the amount of application-level innovation).¹¹ Federal Trade Commission, (2007, p. 8) (“Such leveraging may take the form of exclusive dealing arrangements, refusals to deal, vertical integration, or certain unilateral conduct. All of these types of conduct can be anticompetitive and harmful to consumers under certain conditions.”).

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