



CPI Antitrust Chronicle

March 2012 (2)

“Solving” Net Neutrality: Regulation, Antitrust, Or More Competition

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I. INTRODUCTION

Since net neutrality first appeared in policy debates, its meaning has been less than crystal clear. Some advocates have argued that net neutrality demands that broadband internet service providers (“ISPs”) treat all bits equally: “a bit is a bit is a bit,” while others make exceptions for malware bits, spam bits, child porn bits, etc. Some advocates have argued that net neutrality must apply not only to wired broadband ISPs (cable, DSL, and fiber) but to wireless broadband providers as well, while others recognize that wireless broadband has a unique technological structure that requires more stringent and flexible capacity management than is consistent with “a bit is a bit is a bit.”

Whatever its definition, both the form and substance of the public policy response have been subject to much debate. Some have argued that the problem is one of market structure: the U.S.’s duopoly in wired broadband ISP services requires public control to protect the open internet that would not be needed in a competitive market. Others have argued that some form of public control is required no matter what the market structure. The outcome of this discussion informs the choice of public policy instrument: Should this be a problem addressed via regulation or should it be addressed via antitrust?

The Federal Communications Commission (“FCC”) has issued a Report and Order (“R&O”)² promulgating its network neutrality rules, which, as might be expected, strikes a middle ground between purists on each side of the debate. Curiously, the FCC itself seems to have foresworn the use of the term “network neutrality,” preferring to adopt phrases such as “preserving the Open Internet,” or “Open Internet rules.” In this paper, I continue to use the traditional terminology.

First I outline the FCC’s recently enacted regulation on network neutrality and then I ask three questions:

- What economic problem is net neutrality designed to solve? What is the empirical evidence concerning this problem?
- What is the EU doing, if anything, on net neutrality?

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² See Report & Order, FCC 10-201, available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-10-201A1.pdf.

- What is the more effective instrument for implementing net neutrality: regulation or antitrust?

II. CURRENT FCC NET NEUTRALITY REGULATIONS

The R&O specifies four “principles:”

A. Transparency

“...broadband Internet access service shall publicly disclose accurate information regarding the network management practices, performance, and commercial terms of its broadband Internet access services sufficient for consumers to make informed choices...” (§§54ff)

Broadband ISPs are required to publicly disclose the following:

1. *Network Practices*, such as congestion management, application-specific behavior, device attachment rules, and security.
2. *Performance Characteristics*, such as technology, speed, usefulness for certain applications, and what other specialized services are available.
3. *Commercial Terms*, such as pricing, privacy policy, and redress options should disputes arise.

The transparency rules are relatively flexible; some have argued for much more specific and detailed disclosures and are disappointed in the flexibility of the adopted rules. But generally, this principle of disclosure is rather close to best practice in the broadband ISP industry today, and the principle is strongly supported by scholarly work. The transparency principle is the least controversial of the FCC’s network neutrality rules.

B. No Blocking and No Unreasonable Discrimination

1. No Blocking:

...[a] broadband Internet access service [provider] ... shall not block lawful content, applications, services, or nonharmful devices, subject to reasonable network management.

This rule is also interpreted to prohibit broadband ISPs from degrading service (e.g., slowing it down) of applications, etc. Broadband ISPs are also prohibited from charging a fee in order to carry an application, etc. (i.e., blocking the application unless a fee is paid).

2. No Unreasonable Discrimination:

...[a] broadband Internet access service [provider] ...shall not unreasonably discriminate in transmitting lawful network traffic over a consumer’s broadband Internet access service. Reasonable network management shall not constitute unreasonable discrimination.

This rule contains a blockbuster clause: broadband ISPs are not permitted to charge application/content providers for access to their customers. I discuss this more below on two-sided markets.

While this rule seems a bit vague (note the use of the term “unreasonable/reasonable”), the R&O does specify ISP behaviors that help them become “reasonable:” transparency, end-user

(i.e., customer) control, use-agnostic discrimination, and adoption of industry best-practice standards.

The FCC suggests that any attempt by broadband ISPs to offer application/content providers services over and above plain-vanilla internet (i.e., pay for priority service, such as QoS (quality of service)), while not *per se* forbidden, would be looked upon quite negatively by the FCC (§76).

C. Reasonable Network Management

A network management practice is reasonable if it is appropriate and tailored to achieving a legitimate network management purpose, taking into account the particular network architecture and technology of the broadband Internet access service.

Network management is a core function for any network operator, be it voice telephony or internet data, which is poorly understood by the public and indeed many advocates for net neutrality. The FCC specifies the principles of transparency, end-user control, and use-agnostic methods as determinative of reasonableness. They also specify network management functions relating to network security, congestion management, and (customer-) unwanted traffic as the appropriate scope for network management.

While some net neutrality advocates believe network management is a thinly disguised cover for bad action on the part of broadband ISPs, the FCC has chosen an approach that recognizes the need for network management while seeking to ensure it is not misused for nefarious ends. Broadly speaking, the rule as written appears close to today's best practice by broadband ISPs.

D. Mobile Broadband

The FCC rules apply only the transparency rule and the no blocking rule to mobile broadband, relaxing the rules on discrimination and network management. This relaxation of rules for mobile reflects a view that mobile broadband is a different technology with different (and more significant) constraints than wired broadband. This is not a topic I cover in this paper, but see Faulhaber & Farber.³

III. TO WHAT PROBLEM IS NET NEUTRALITY THE SOLUTION?

Given the level of interest in network neutrality, one could be forgiven for thinking that the Internet is being violated by rapacious broadband ISPs and there is not a moment to lose in protecting its openness. Since we have had broadband ISPs in the United States for over a decade, one might think that the practices of blocking, discrimination, and disadvantaging competitors would be rife, and such practices well-documented, but one would be wrong.

The R&O (§§21-32) cites chapter and verse of all the incentives and opportunities that broadband ISPs have to abuse their position to enhance their profits at the expense of application/content providers and their own customers echoing the concerns expressed by van Schewick. The concerns expressed are concerns about the economics of broadband ISPs, but

³ G. Faulhaber & D. Farber, *Innovation in the Wireless Ecosystem: A CustomerCentric Approach*, INT'L J. OF COMMUNICATION 4, 73-112 (2010).

nowhere in the R&O can we find anything approaching an economic analysis of these hypotheses (or allegations). In fact, one has to read the R&O very closely to find any empirical support whatsoever that any of the suspect behaviors the FCC seeks to prevent have actually occurred. The FCC (§35) produces only four examples:

- In 2005, Madison River Communications, in its role as a broadband ISP in North Carolina, blocked its customers from using Vonage, a VoIP voice phone provider that competed with Madison River's main telephone business. After complaints to the FCC, Madison River paid a \$15,000 fine and stopped the practice.
- In 2007-08, Comcast was interfering with BitTorrent traffic (a video P2P site) it claimed was congesting its network. The FCC issued an order prohibiting their network management practices. Comcast duly changed its practices but took the FCC to court claiming it lacked jurisdiction. The DC District Court agreed, and the issue was remanded to the FCC.
- A letter from the ACLU alleged that a mobile service provider had blocked the use of an application because it had a competing application. This issue apparently never made it to the formal complaint stage.
- In 2009, Apple and AT&T blocked the use of WiFi connectivity rather than AT&T's own 2G and 3G services on their successful mobile iPhone. The issue was resolved by the FCC.

So in over a decade, there have been only four examples of purported misconduct (one which was denied by the courts and another which didn't even rise to the level of a complaint) for the entire broadband ISP industry. By any standard, four complaints about an entire industry in over a decade would seem to be cause for a commendation rather than restrictive regulation.

The FCC acknowledges this lack of evidence of actual wrongdoing by referring in the R&O to the proposed rules as "prophylactic," or preventive. Their purpose is to prevent things from happening that haven't actually happened thus far. Further, the R&O (§4) acknowledges explicitly that "...[the rules] incorporate longstanding openness principles that are generally in line with current practices and with norms endorsed by many broadband providers." If the rules are indeed aligned with current practices and norms, then why do we need them?

Several explanations for this lack of evidence have been offered. Some offer the opinion that broadband ISPs have not engaged in bad behavior because they know the regulators/legislators are watching and will enact punitive regulations should the ISPs engage in bad practices. Of course, this actually argues against actual regulations; if the mere threat of regulation is sufficient to deter bad behavior, then perhaps we should stick with mere threats.

Others have suggested that broadband ISPs formerly were subject to common carrier obligations, which are tantamount to network neutrality. This suggestion is historically false. In fact, cable firms have never been subject to common carrier obligations, and telephone companies' DSL service, while temporarily subject to mandated line-sharing, was never formally designated as a common carriage service.

Still others have argued that new technology for "deep packet inspection" (which permits an ISP to inspect data packets that transit its servers to determine source, destination, content,

and other data associated with that packet) permits ISPs to discriminate among data being delivered from application/content providers to their customers and therefore discriminate against competitive services. In fact, providers of internet servers such as Cisco have sold ISPs servers with the capability of detailed tracking of their data traffic since at least 1999. Packet inspection is an old technology, dating to the earliest days of broadband ISPs. It does not pose a new threat that might upset long-established behaviors in this market.

No problem actually exists for which network neutrality is a solution. The litany of evils imagined that might occur have almost never occurred in the past, and there is no evidence that the market environment of broadband ISPs is undergoing a change that might justify concerns about as-yet-unrealized threats. Are the problems that net neutrality purports to solve purely imaginary? Are “prophylactic” remedies to non-problems needed? I leave it to the reader to decide.

IV. WHAT IS THE EUROPEAN UNION DOING ABOUT NET NEUTRALITY?

The net neutrality debate arose in the United States and for years European analysts and policymakers viewed net neutrality as a U.S. problem that did not affect them. In large part, this view was justified by the rather different technical and market structure of broadband ISPs in Europe compared to the United States. As noted above, much of the U.S. broadband ISP market is a duopoly, consisting of a cable provider and a telephone company provider of DSL service (in some markets, there is a single monopoly provider, or in some rural areas perhaps even no provider at all). In Europe, the cable industry never developed broadly, as it did in the United States, and so most markets are served only by a monopoly telephone provider of DSL service.

However, the European Union has typically required that the monopoly provider of DSL *facilities* resell its “pipes” to internet *service* providers, at regulated (and low) wholesale rates. While the facilities remain a monopoly, there can be many service providers offering broadband customers a range of services, all using the monopolist’s pipes at low wholesale rates. In this way, the general view in the European Union is that the broadband ISP service market is competitive (even though the facilities market is monopolistic).

Recently, the European Union has expressed more interest in net neutrality, although with its own set of concerns. Principal concerns are (i) transparency and (ii) minimum quality of service, the latter concern focused on ISPs ability to degrade service to unacceptable levels. In an EU poll of national regulators, Britain’s OfCom mentioned these concerns as both paramount as well as the only concerns requiring regulation. At the other end of the spectrum, France’s ARCEP recommended net neutrality restrictions fully as tight as the FCC’s, but additionally extended neutrality to other firms in the value chain, insisting for example that search firms (such as Google and Bing) be subject to “search neutrality” (a proposal explicitly rejected by the FCC). The EU has expressed interest in regulating exclusion (blocking or throttling content) and ISP’s charging for data termination as important areas of regulation in the new FCC net neutrality rules.

Both transparency and minimum quality of service are easy to state but much more difficult to implement. For example, “transparency” implies that ISP terms, conditions, speed/capacity performance, and network management practices be available to potential and actual customers. But how must an ISP communicate these technically complex performance

measures to a customer base largely free of technical knowledge? Britain's OfCom has made important progress in the area, but more is needed. More broadly, all of these potential rules raise more questions than they answer; adopting them will require much interpretation and likely litigation.

The EU position on net neutrality developed after the U.S. debate, but appears to be moving toward the more restrictive FCC position. Astute analysts such as Martin Cave have raised the same issues as are raised above, arguing that net neutrality is a solution looking for a problem; since there is no market failure, public intervention can only harm, not help. It appears, however, that the EU may adopt the more restrictive approach.

V. THE CORRECT INSTRUMENT: REGULATION VS. ANTITRUST VS. MORE COMPETITION

Both the United States and the European Union have adopted a regulatory approach to net neutrality, rather than relying on existing antitrust laws and agencies to solve whatever problems arise, or adopting policies that increase competition in the broadband ISP industry.

The European Union seems to have successfully deployed mandatory resale in order to create a competitive market in broadband ISP services, by establishing low wholesale rates for existing (often monopoly) telephone DSL facility providers. It may be argued that adopting mandatory resale of broadband facility providers in the United States may result in a competitive market, obviating the need for net neutrality regulation. For a number of reasons, mandatory resale has not worked well in the United States, and it is unlikely, based on this experience, to have the same results as it has had in France or Japan.

A much more promising approach involves substantially increasing the amount of spectrum available to mobile operators so that they may introduce new 4G LTE high-speed wireless broadband. Both Verizon Wireless and AT&T Wireless are currently rolling out LTE, which deliver higher speeds than "plain vanilla" DSL services (although much more capacity constrained than wired service, such as DSL and cable). As these systems are deployed more fully, the ability of wireless LTE connectivity to offer speeds (if not capacity) competitive with cable broadband promises to significantly improve the competitive landscape in broadband. I have argued elsewhere that the FCC's stated objective of expanding broadband nationwide competitively is best achieved via wireless broadband. To achieve this, however, requires that the FCC make substantially more spectrum available to mobile operators, a project which both Congress and the FCC appear to be taking on as quickly as the legal/political process permits.

However, the introduction of broadband competition via wireless will take some time to deploy, while the demands of net neutrality advocates are for action *now*. To satisfy the demand for immediate action (although there is no actual evidence that any action is required) suggests either a regulatory solution or an antitrust solution.

The nature of the alleged problem will seem to suggest an antitrust solution. Most agree that it is the market structure of the broadband ISP market (monopoly/duopoly) in the United States that leads to net neutrality concerns and, of course, market structure is the focus of antitrust policy. In fact, in 2006, then-FTC Chairperson Deborah Majoras stated:

... let me make clear that if broadband providers engage in anticompetitive conduct, we will not hesitate to act using our existing authority. But I have to say,

thus far, proponents of net neutrality regulation have not come to us to explain where the market is failing or what anticompetitive conduct we should challenge; we are open to hearing from them.

Her comments make specific a fundamental problem with net neutrality demands: What is the market failure here? What anticompetitive conduct is going on? It does suggest, however, that if any such problems arise in the future, the antitrust authorities stand ready to intervene. The simple empirical observation that there have been practically no such problems in the U.S. history of broadband ISPs suggest that a firm announcement of intent to prosecute under antitrust laws should be sufficient to deter any such bad behavior in the future.

But instead, the FCC has chosen to treat this as a regulatory issue, in which the regulatory commission announces *per se* rules of what constitutes bad behavior, and stands ready to enforce these rules as it finds violations.

Why is this so different than antitrust enforcement? With a regulatory solution, the regulator must first decide what behavior is deemed objectionable. It must then interpret these rules as situations arise, giving opportunity for various parties with market interests to intervene at every stage. With an antitrust solution, complainants (public or private) would be required to apply specific antitrust statutes to specific incidents, and to demonstrate injury done to them as a consequence. The court would decide on a “rule of reason” basis whether the alleged injury (i) actually occurred, and (ii) whether there are countervailing efficiency effects to the alleged behavior. The only parties involved in such an action are parties with “standing:” parties who can reasonably claim to be affected by the behavior in question. With a regulatory solution, virtually anyone can intervene in an FCC proceeding, whether with standing or not—potential competitors, aggrieved suppliers, etc.

But the most important difference between regulation and antitrust is that the former is much more prone to what economists call “rent-seeking.” Rather than focusing on the regulations themselves, it is likely that the real costs of regulation will arise from the *presence of a regulator positioned to intervene in the broadband ISP market*, whatever the actual regulations are. The presence of a regulator in a market ensures that market participants (buyers, sellers, employees, special interest groups, and competitors) will petition the regulator for actions against others (e.g., competitors) that will give the petitioners market advantage (or otherwise forward the petitioner’s agenda). If the FCC shows itself as willing to wield government power in the broadband ISP market, there will be no shortage of supplicants demanding the FCC use its power to force others to serve their interests, claiming, of course, that their demands are in the “public interest.” Virtually all regulation has been suffused with such “rent-seeking,” in which interest groups seek to create rents for themselves by suborning government power via the regulators on their own behalf.

Economists have known about these costs of regulation for decades. In previous work, I describe the problem:

Regulation ... opens wide opportunities for regulatory rent-seeking, in which firms seek market advantage via regulation, rather than via serving customers well. When regulators are open for business, firms understand that pleasing/manipulating the regulators is far more important than innovating, investing, and pleasing customers. It is precisely because regulators have *not* been

open for business on the Internet that it has been such an innovative and successful enterprise.

Advocates of regulation often ignore this seamy side of regulation, hoping that proposed network neutrality regulation will work perfectly, with no unintended consequences, implemented by an all-wise, lobby-proof, above-politics FCC. Those of us with actual experience with regulators (such as the author) find this Pollyanna attitude naïve in the extreme.

In the short time that the FCC has announced its new net neutrality regulations, one would expect that there has not been sufficient time for rent-seeking to get under way. One would expect, but one would be wrong; several attempts to press the FCC to order changes in commercial arrangements have already occurred. A particularly egregious example involves Level 3, an internet backbone provider, who recently agreed to distribute movies for Netflix, which makes them a content delivery network (“CDN”). Level 3 was notified by Comcast that it would no longer “peer” with Level 3 (in which traffic is exchanged between peers without charge), as their new CDN status made them a “transit” network (in which the transit network is charged a fee by the backbone). For the past twenty-five years, the basis of peering relationships has been rough equality of traffic flows. If traffic flows are unbalanced, as would occur with a CDN, the network generating the excess traffic is a transit network and is charged a fee, according to long-standing contracts and industry practice.

In this case (just after the FCC announced its new net neutrality rules), Level 3 complained to the FCC that Comcast was violating the net neutrality rules by charging them to carry their content. Although these rules were explicitly to apply only to last-mile ISPs and not backbone networks, Level 3 asked for FCC intervention so they could continue to get free carriage of their traffic even though their business model had changed. The issue was described eloquently in a recent blog by Mueller:

On Tuesday (November 30, 2010) Internet backbone provider Level3 publicly accused cable-based ISP Comcast of trying to thwart competing video services delivered through the internet. Comcast was, according to Level3, suddenly choosing to charge it more because of its carriage of Netflix traffic. The accusation was consciously framed to raise net neutrality alarms. It appeared as if a cable TV giant was using its control of internet access to make access to a competing, over the top video service more expensive,

Then the full story came out. This was a peering dispute. In peering agreements, two ISPs exchange traffic without paying each other, on the assumption that both parties have roughly balanced traffic and benefit equally from the interconnection. When there is no balance—that is, when ISP A reaps more benefit from the interconnection than ISP B—it is common practice for ISP A to pay ISP B for the service.

The Level 3 maneuver is a good example of what can and will happen with an over-regulated internet: one business interest complains about another about a commercial negotiation and attempts to bring in the feds simply to get a better business deal. Opening up these contractual arrangements to political mediation is a slippery slope. The scope of regulation—and the costs of participating in the industry—steadily rise as more and more aspects of the industry are sucked into this vortex.

Regardless of the outcome of this particular issue, we can rest assured that very soon, the FCC will be "...sucked into this vortex," in Mueller's words. And it is this ineluctable process which creates the true costs of regulation, not the actual regulations themselves. The ultimate tragedy of the FCC's net neutrality regulation is that the FCC will slide down the slippery slope to the depths of rent-seeking whether it wishes to or not.

The empirical evidence and the political economy all point to the correct solution to the net neutrality "problem," which is more competition, and that this competition is most likely to arise from high-speed wireless broadband now emerging in the mobile marketplace.

However, if policymakers insist on immediate action, then antitrust is the preferred solution; when specific problems arise, they can be handled most effectively via antitrust (private or public). Regulatory solutions involve costs far beyond the actual impact of the rules, and are likely to cause substantial inefficiencies within the industry but impede innovation as well. The regulatory net neutrality cure will certainly be worse than the imagined disease it is meant to treat.