Perspectives from FSF Scholars
May 19, 2015
Vol. 10, No. 20

Regulating Interconnection (Lightly!)

by

Daniel A. Lyons [*]

Of the many potential land mines lurking in the Open Internet order, perhaps the most surprising is the Commission's assertion of jurisdiction over interconnection agreements. When he first launched the net neutrality proceeding in 2009, then-Chairman Julius Genachowski was quick to snuff out any concern that the Commission sought to regulate the Internet. He explained to anyone who would listen that the FCC was interested only in the "on-ramps to the Internet," the last-mile broadband networks that connect end-users to the network.[1] Similarly, the 2014 Notice of Proposed Rulemaking tentatively concluded that the Open Internet rules should not affect agreements for the exchange of traffic between networks.[2] Although the Commission invited comments on this conclusion, Chairman Tom Wheeler explained during the comment period that interconnection is "not a net neutrality issue" and a Commission spokesman clarified that "[p]eering and interconnection are not under consideration in the Open Internet proceeding."[3]

But changing dynamics within the Internet ecosystem, specifically the rise of over-the-top video as the single largest driver of Internet traffic, brought interconnection disputes increasingly into the public's eye in 2014. Policymakers and advocates grew concerned that ISPs could use interconnection disputes to make an end-run around net neutrality restrictions. These concerns were fanned by Netflix, generator of up to one-third of peak-time Internet traffic, which sought regulatory intervention to correct its failure to negotiate settlement-free interconnection agreements with several prominent ISPs. As a result, the Open Internet order explicitly grants the

Commission potentially broad authority to review broadband providers' interconnection practices and to hear interconnection-related complaints filed by consumers.[4]

In part because of this about-face, the interconnection provisions may be one of the portions of the Open Internet order most vulnerable to reversal on judicial review. But a reversal on procedural grounds does not address the issue of what role the Commission *should* play when governing interconnection in a Title II world. Interconnection is an important issue, and the FCC should play a role in its oversight – particularly since reclassification has displaced the FTC's antitrust authority over broadband providers – but not necessarily the role that the Open Internet order and various commenters contemplate. Rather, the Commission should operate as a type of sector-specific antitrust authority, intervening in significant instances where there is credible evidence of anticompetitive harm, but otherwise allowing a robust interconnection market to evolve along with the changing Internet ecosystem.

Interconnection and the Open Internet Order

The Commission claims that authority to regulate interconnection agreements flows from its decision to reclassify broadband providers as Title II telecommunications services. Sections 201 and 202 prohibit broadband providers from engaging in unjust or unreasonable practices when providing broadband service to consumers. The Open Internet order explains that this includes the exchange of Internet traffic by an edge provider or an intermediary with the broadband provider's network.[5] These exchanges of traffic, governed by interconnection agreements, are provided "for and in connection with" broadband service and therefore fall within the Commission's purview.[6]

Interestingly, the order did not explicitly rely upon the portions of the Communications Act that specifically govern interconnection. The Commission forebeared from applying Sections 251(a)(1) and 251(c)(2), which requires telecommunications carriers to interconnect directly or indirectly with one another and foists additional obligations on incumbent local exchange carriers.[7] Section 201(a) also gives the Commission authority to order interconnection if the public interest so demands.[8] The order does not forebear from applying Section 201(a). And in light of its explicit statement that Section 201 applies to broadband providers, the order at least implicitly suggests that this authority is available to the Commission. But throughout the discussion of interconnection, the order relies primarily upon the Section 201(b) duty to avoid unjust and unreasonable practices rather than Section 201(a).

To its credit, the Commission thus far has chosen to wade into the interconnection market slowly. It explicitly declined to impose the full panoply of net neutrality provisions to a broadband provider's interconnection practices, such as the prohibitions on blocking, throttling, and paid prioritization, and the awkwardly-named no unreasonable interference/disadvantage standard.[9] The Commission recognized that it lacks the experience and background necessary to craft specific rules governing Internet traffic exchange.[10] Instead, it will develop its interconnection jurisprudence on a case-by-case basis in response to claims filed with the Commission under Section 208 alleging that broadband providers are engaged in unjust or unreasonable practices.[11]

While this regulatory humility is commendable, the requirement that any interconnection practices be just and reasonable provides little guidance to networks seeking to interconnect. The Commission's prior telephone interconnection decisions are largely inapposite, as they involve very different market conditions and generally apply a more comprehensive regulatory regime including tariffing that the agency (quite correctly) chose not to apply to broadband providers. As noted above, a reviewing court may strike the Open Internet order's interconnection provisions on procedural grounds, because the notice of proposed rulemaking did not adequately signal to interested parties, in a way that invited substantive comment, that the agency might regulate interconnection. But even if the rules survive, they merely provide the Commission with the jurisdiction to regulate interconnection agreements. They provide little explanation about how the Commission should go about exercising that authority.

Interconnection Disputes and the Need for a (Limited) Regulatory Response

As the Free State Foundation scholars discussed in response to last year's #CommActUpdate interconnection white paper, the Commission should assume some oversight of the interconnection market.[12] The Internet is not a single network, but a collection of several thousand autonomous networks, working together to move packets from origination to delivery. Interconnection agreements fuse those networks together, and therefore are vitally important to the health of a robust Internet. Denser, more interconnected networks help promote the Internet as a tool for expression, news, education, and communication – all socially valuable activities that public policy should facilitate.

As in many areas of the economy, interconnection offers some incentives for anticompetitive abuse. There are many benign reasons why one network may refuse to interconnect with another – perhaps most obviously, to pressure a sending network into assuming the direct or indirect costs of offloading its traffic onto a receiving network. But some networks may also be tempted to deny interconnection as a strategy to restrict competition in a way that harms consumers. As discussed below, networking innovations have reduced the opportunities for such behavior, but the potential for such abuse demands some regulatory oversight.

But unlike other areas of the economy (including net neutrality), it is unclear that traditional antitrust law alone is sufficient to remedy these concerns. Historically, antitrust proved effective at policing interconnection abuses in the telephone context – arguably more effective than Commission oversight. But the Supreme Court's landmark *Trinko* decision[13] has cast significant doubt upon the usefulness of the tool going forward.[14] *Trinko* (correctly) reaffirmed the general right of a company to determine with whom it will deal, and on what terms. The decision neither affirmed nor rejected the essential facilities doctrine, but it hinted strongly that "forced access" was not an appropriate remedy. Moreover, the Commission itself effectively diminished whatever power antitrust law has over interconnection markets post-*Trinko*: by reclassifying broadband providers as common carriers, the FCC stripped the Federal Trade Commission of jurisdiction to investigate broadband providers' practices under the FTC Act.[15] For these independent reasons, it is not objectionable for the FCC to step into the gap that its reclassification decision created, to assume the mantle of policing interconnection markets for anticompetitive abuse.

While the Commission has a role to play, it should approach any intervention with caution. The Open Internet order admits that the Commission does not yet have a firm understanding of the complexities of interconnection markets.[16] But we can identify three broad themes with certainty.

First, interconnection markets are complex. There are more than thirty-five thousand networks that comprise the Internet. Some have a global footprint, while others operate only locally. Some offer only transit service, while others bundle delivery with other products and services. Thus the universe of potential interconnection agreement terms is vast, providing a steep learning curve for regulators and high potential for error.

Second, interconnection markets are competitive. Content providers have a wide variety of transit and other providers to choose from when determining how to get content to the Internet, and transit networks have myriad options to deliver their traffic to its final destinations. As evidence of this competitiveness, Internet transit prices have fallen by an astounding 30% per year on average, from $1200/Mbps in 1998 to $0.94/Mbps in 2014.[17] And even with today's razor-thin margins, this trend shows no signs of abating. Streaming Media analyst Dan Rayburn has chronicled similar trends for Content Delivery Network (CDN) prices, which can be considered a quasi-substitute for traditional transit.[18]

Finally, interconnection markets are evolving, largely in response to evolutionary trends elsewhere in the Internet ecosystem. The Open Internet order recognizes this phenomenon.[19] The rise of streaming video as the dominant form of Internet traffic has disrupted traditional transit and peering arrangements. The asymmetric flow of video traffic and rise of CDNs as an alternative to traditional transit has put pressure on network providers to adapt interconnection arrangements to meet these new realities.

As I discussed in an earlier *Perspectives from FSF Scholars* release,[20] this need to evolve in response to changes elsewhere in the Internet ecosystem likely explains recent interconnection disputes that have grabbed the public's attention, particularly those involving Netflix. Netflix traditionally partnered with third-party transit providers and CDNs to deliver its content to consumers. An agreement with one such provider, Cogent, combined with the growth in popularity of Netflix's service, created a significant increase in the traffic Cogent sought to offload to last-mile networks such as Comcast and Verizon. This increase overloaded the ports connecting these networks and upset existing peering agreements, which were likely based on more symmetric traffic flow assumptions. Cogent and its partners struggled to determine who would pay for upgrades and on what terms traffic would be exchanged going forward. Netflix and its customers suffered from congestion. Ultimately, Netflix solved the problem by signing paid interconnection agreements directly with several last-mile broadband networks – thus eliminating the middleman in ways that are likely more efficient and beneficial to consumers.

This is the challenge for the Commission's interconnection regulators: they should intervene when there is credible evidence of anticompetitive threats, but without distorting the natural evolution of interconnection markets or retarding the ability of networks to adapt to stimuli elsewhere in the Internet ecosystem. The challenge is compounded by the fact that market evolution is often messy and has adverse interim consequences for consumers. But the

Commission must resist the urge to label each consumer disruption a market failure in need of regulatory intervention. Netflix has complained that service quality suffered until it negotiated directly with broadband providers, and that it ultimately agreed to paid interconnection agreements rather than settlement-free agreements with the company's OpenConnect content delivery network. But this amounts to little more than a complaint that the market is not evolving in the precise direction that Netflix wished it to. Without more, the case for regulatory intervention is at best unclear – and to yield to the company's demands for FCC intervention would have thwarted the development of the paid interconnection solution to the logjam created by vastly increased video traffic.

Conclusion: Toward a More Concrete Interconnection Governance Regime

Interconnection disputes are likely to occur from time to time, coinciding with changing consumer behavior and the consequent effect these changes have on the flow of bits across networks. The Commission is correct that it is premature to develop a comprehensive regulatory response to this phenomenon. But the discussion above yields three key nodes around which the Commission should begin building its policy.

Transparency

The Commission should begin by attempting to gather more information to understand how interconnection markets work. When faced with Netflix's complaints in early 2014 that paid peering posed a threat to the Open Internet, the Commission appropriately responded by asking for copies of the interconnection agreements in question, to develop a better understanding of how these markets work. The Open Internet order suggests that the learning curve is steep, and the agency has not yet satisfied itself – or many other observers – that it understands the complex dynamics at work in this market. Before undertaking a comprehensive law of interconnection, under Sections 201 and 202 or otherwise, the Commission should gather additional facts to understand better the dynamic nature of this market and where the potential for anticompetitive abuse may lie.

It is worth noting, however, that this does not, and should not, justify a policy to make the details of these agreements public, as some advocates have suggested. Interconnection agreements are generally governed by nondisclosure agreements and could contain valuable trade secrets that individual networks seek to remain confidential. As I have discussed at length in an earlier *Perspectives from FSF Scholars* release,[21] antitrust law has long warned that the disclosure of competitively sensitive information among rivals can facilitate tacit collusion, and even absent collusion, revealing price and cost information can have an adverse effect on competition. The Commission should reject calls to mandate the public disclosure of individual interconnection agreements.

Intervention

The Commission should adopt an intervention standard informed by antitrust principles, commensurate with the notion that anticompetitive concerns comprise the primary justification for regulating in this space. In a typical anticompetitive foreclosure case, the government would have to prove that the defendant has market power and that the conduct in question has an anticompetitive effect. Similarly, the Commission should not intervene in an interconnection dispute absent a finding that one of the parties has market power. Given the rise of multi-homing, such findings should be rare. Multi-homing is the concept that content and transit providers rely upon multiple providers to deliver traffic to Internet endpoints. The existence of multiple entry points into a network reduces the likelihood that a network can exercise market power in a way that forecloses traffic.

Intervention should also be limited to disputes that exhibit at least the potential for sustained consumer harm. The *sustained* modifier helps distinguish instances in which market evolution is messy and causes some transient interruption to consumer service. Such disruptions may be regrettable but do not alone rise to the level justifying regulatory intervention. As noted above, market transitions can be messy affairs, and the Commission should avoid the temptation to ride to the rescue any time consumers or competitors claim to be adversely affected by sharp practices within a changing market.

This is likely a narrower standard than that afforded by the Title II "unjust or unreasonable practices" standard – and much narrower than Section 201(a)'s public interest standard for regulating interconnection practices. But these modest guideposts fit what ought to be a display of humility on the Commission's part when discussing interconnection markets. Given the robust competition in this space and the speed with which interconnection agreements respond to fluid market conditions, regulatory intervention should be the exception rather than the rule. For the Internet to grow and develop in response to changing consumer demand, network providers must be given significant flexibility to draft appropriate interconnection agreements, even if dynamic new terms differ substantially from existing practices. An antitrust-like standard preserves the space for that evolution to occur while still providing sufficient authority for the Commission to block practices that harm consumers and competition.

Remedy

Upon finding that a particular dispute or practice is harmful, the agency's primary recourse should be to refer the parties to private negotiation. Perhaps the first step should be to order mediation, and if that fails, require the parties to attend mandatory arbitration to resolve their disputes. Private ordering is preferable to Commission-imposed interconnection because of the complexity associated with interconnection. Interconnection agreements can involve several different practices, and can themselves represent only one facet of the full relationship between the two parties. Once a problem is laid bare, the parties have a wide range of tools with which to find consensus, especially when prompted by an effective dispute resolution specialist. This means that a privately negotiated solution is likely to be more efficient than one imposed by the regulator from a more limited set of options.

By asserting jurisdiction over interconnection disputes, the Commission opened a brave new world in Internet regulation. The Open Internet order's supposed caution and humility with regard to this issue is encouraging, at least if taken at face value. The discussion above is not meant to comprise a robust jurisprudence of interconnection disputes, but rather a set of first principles meant to guide the Commission as it first dips its toes into interconnection waters. The Commission's first steps should be to gain a better understanding of interconnection markets, and intervene only in instances of anticompetitive harm to prod the parties to negotiate a solution. In this way, the Commission can protect consumers from legitimate harm while minimizing the risk that intervention would otherwise pose to the continued health and stability of the Internet.

* Daniel A. Lyons, a member of the Free State Foundation's Board of Academic Advisors, is an Associate Professor of Law at Boston College Law School.

The Free State Foundation is an independent**,** nonpartisan free market-oriented think tank located in Rockville, Maryland.

---

[1] See, e.g., John Eggerton, FCC Votes to Propose Net Neutrality Rules, Broadcasting & Cable, Oct. 22, 2009, available at http://www.broadcastingcable.com/news/washington/fcc-votes-propose-net-neutrality-rules/56654.
[2] See Protecting and Promoting the Open Internet, Notice of Proposed Rulemaking, GN Docket No. 14-28, May 22, 2014, at ¶ 59.
[3] See Brendan Sasso, Netflix's Net Neutrality Plea Gets Rejected by the FCC, National Journal, April 1, 2014, available at http://www.nationaljournal.com/tech/netflix-s-net-neutrality-plea-gets-rejected-by-the-fcc-20140401.
[4] Protecting and Promoting the Open Internet, GN Docket No. 14-28, Feb. 26, 2015, at ¶ 29.
[5] *Id.*¶ 195.
[6] *Id.* ¶ 204.
[7] *Id.* ¶ 513, 514. Under case law, it is not clear how much authority these statutes would give the Commission to regulate the *terms* of interconnection at any rate.
[8] "It shall be the duty of every common carrier engaged in interstate or foreign communication by wire or radio to furnish such communications service upon reasonable request therefor; and in accordance with the orders of the Commission, in cases where the Commission, after opportunity for hearing, finds such action necessary or desirable in the public interest, to establish physical connections with other carriers, to establish through routes and charges applicable thereto and the divisions of such charges, and to establish and provide facilities and regulations for operating such through routes." 47 U.S.C. § 201(a).
[9] *Id.*¶ 30. 195.
[10]*Id.* ¶ 202.
[11] *Id.*¶ 203.
[12] See Free State Foundation, Response to Questions in the House Commerce Committee's Fourth White Paper, Aug. 8, 2014, available at http://www.freestatefoundation.org/images/Response_to_Questions_in_the_Fourth_White_Paper_080814.pdf. Both that response and this piece acknowledge a debt to the substantial work previously done on this topic by the Digital Age Communications Act Working Group. See Randolph J. May and James B. Speta, "Digital Age Communications Act," Proposal of the Regulatory Framework Working Group, Progress & Freedom Foundation, June 2005.
[13] Verizon Communications, Inc. v. Law Offices of Curtis V. Trinko, LLP, 540 U.S. 398, 415 (2004).
[14] See, e.g., James Speta, *An Appropriate Interconnection Backstop*, 12 J. ON TELECOMM. & HIGH TECH. L. 113, 119-122 (2014).
[15] 15 U.S.C. § 45(a)(2). Of course, the Department of Justice retains jurisdiction to investigate antitrust violations by telecommunications carriers.
[16] Protecting and Promoting the Open Internet, GN Docket No. 14-28, Feb. 26, 2015, at ¶ 31.
[17] William B. Norton, THE INTERNET PEERING PLAYBOOK: CONNECTING TO THE CORE OF THE INTERNET 34 (2013).
[18] Dan Rayburn, The State of the CDN Market, May 2014, available at http://www.streamingmedia.com/dansblog/2014CDNSummit-Rayburn.pdf.
[19] Protecting and Promoting the Open Internet, GN Docket No. 14-28, Feb. 26, 2015, at ¶ 196.

[20] Daniel A. Lyons, *Peering into the Comcast-Netflix Deal*, *Perspectives from FSF Scholars*, Vol. 9, No, 11 (2014).
[21] Daniel A. Lyons, *Compelled Disclosure of Internet Interconnection Agreements Creates Anticompetitive Risks*, *Perspectives from FSF Scholars*, Vol. 9, No, 22 (2014).