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A Skeptic's Primer on Net Neutrality Regulation*

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Executive Summary

"Net neutrality" has emerged as the most contentious communications and media policy issue. In a broad sense, the debate is about whether law and regulation should dictate completely "open" or "dumb" broadband networks or whether "openness" should be left to the marketplace. Net neutrality regulations might weaken the competitive vibrancy of the content, applications and device components of the Internet, for example applications that depend on a steady transfer of data like voice or video. Neutrality mandates and a fixation on "end-to-end" principles could also complicate efforts to keep the Internet safe and reliable. Network providers make money by signing up customers, and have a strong incentive to provide the openness their customers demand. But forcing commoditization of broadband infrastructure prohibits providers from experimenting with different network architectures that could benefit customers, and discourages entry and investment in an industry with high fixed costs and low marginal costs. Net neutrality regulations also wouldn't necessarily remain limited to the platform layer; other layers such as services could be regulated as well. In addition, a natural extension of net neutrality regulation would be price regulation; pricing should be left to markets. In short, common carrier regulations dating from a telephone monopoly era have no place in a competitive broadband market. Net neutrality is a premature bit of industrial policy that favors companies in one tier of the Internet over companies in another tier. We remain skeptical of the premises for net neutrality regulation, critical of the regime necessary to implement it, and fearful of the unintended consequences issuing from such a regulatory mandate.

A Skeptic's Primer on Net Neutrality Regulation

"Net neutrality" has become the most hotly debated communications and media policy issue. Proposals to enshrine net neutrality regulation into law are being entertained both in Congress and at the Federal Communications Commission. Meanwhile, as "net neutrality" has matured into a political issue from a regulatory one, rhetorical restraint has disappeared amidst cataclysmic predictions of "the end of the Internet" and demands for compensation for use of broadband networks.

* This primer is a compilation of various arguments relating to network neutrality and is not intended to reflect the views of the Progress & Freedom Foundation, its Board or any particular fellow.

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This primer offers an overview of the net neutrality issue. In sum, we remain skeptical of the premises for net neutrality regulation, critical of the regime necessary to implement it, and fearful of the unintended consequences issuing from such a regulatory mandate. That said, we do not counsel for a categorical rejection of "net neutrality" concerns, but rather vigilance and focus on the competition policy concerns highlighted by "net neutrality."

Q. What is "Net Neutrality"?

The concept of net neutrality is subject to various definitions, depending on who you ask. In general, however, net neutrality is understood to describe a bundle of "access" rights to high-speed broadband pipes. In September 2005, the FCC adopted a policy statement delineating four Internet connectivity principles that describe the bundle of "rights" commonly understood to be encompassed under the network neutrality rubric. The FCC stated that consumers are entitled to:

(1) access the lawful Internet content of their choice;
(2) run applications and services of their choice;
(3) connect any legal devices that will not harm the network; and,
(4) competition among network providers, application and services providers, and content providers.[1]

While there may be differences in phraseology, most net neutrality proponents would agree with a formulation that encompasses the above rights. In a broad sense, the net neutrality debate is about whether law and regulation should dictate completely "open" or "dumb" broadband networks or whether, instead, the degree of "openness" should be left to the marketplace, permitting arrangements between network operators, consumers, and application and content companies in light of marketplace and technological imperatives.

Q. Isn't network neutrality or Internet "openness" a good thing? Why shouldn't anyone impose rules promoting these values?

Everyone agrees that "openness" on the Internet is a good thing in the sense that consumers benefit from expanding levels of competition and innovation that the Internet's technical architecture makes possible. There are several interwoven components to the Internet experience -- content, applications and services, "smart" devices and broadband networks like those that provide DSL and cable modem service. Consumers need competition and innovation with respect to all of these components. Indeed, even proponents of net neutrality regulation welcome increased competition and innovation in "last mile" broadband networks. Thus, it is sadly ironic that net

[1] Appropriate Framework for Broadband Access to the Internet over Wireline Facilities, FCC 05-151, CC Docket No. 02-33, September 23, 2005.

neutrality regulation could stymie the investment that is necessary to foster such competition and innovation.

Q. Are the issues surrounding network neutrality legitimate subjects for government involvement? If so, what role should government play?

The proper role for government in this debate is the one it has played with respect to many other industries, including communications: preserving and promoting competition. Calls for net neutrality regulation largely are based on the fear that competition among "last mile" broadband networks is inadequate to prevent owners of such networks from denying consumers or companies trying to reach them fair and even-handed use of the networks. Particularly given that broadband providers continue to vie for customers on the bases of price, speed and other features, policymakers should ask whether this fear is justified and, if so, whether net neutrality rules are the best way to address the underlying competitive concern.

We think the answer to whether net neutrality mandates are needed is not "always yes" or "always no" but "maybe, in certain circumstances." Broadband providers can only undermine consumer welfare when they possess and abuse market power, i.e., the power to act anticompetitively. Approaches that limit net neutrality regulation to providers who abuse market power stand the best chance of addressing valid competitive concerns that arise without inadvertently discouraging investment in increasingly competitive broadband networks.

Q. Has the government taken action to implement network neutrality principles?

Yes. In short, the FCC has adopted a policy statement expressing its strong preferences, has taken enforcement action in the Madison River case and has adopted orders that bind the largest telephone company providers of broadband to preserve the access to content, applications and devices that consumers already enjoy. Note, however, that the FCC has declined to adopt more sweeping, across-the-board net neutrality mandates because it has concluded that doing so would deny consumers the benefits of investment and innovation in increasingly competitive broadband networks. These points are addressed more fully below.

The Agencies

The FCC concluded its policy statement by observing: “To foster creation, adoption and use of Internet broadband content, applications, services and attachments, and to ensure consumers benefit from the innovation that comes from competition, the Commission will incorporate the above principles into its ongoing policymaking activities.”[2]

It did not take long for the FCC to make good on its promise to incorporate the net neutrality principles into its ongoing policymaking activities. When the FCC

[2] Id. at 3.

approved the mergers of SBC Communications, Inc. with AT&T Corp. and Verizon Communications, Inc. with MCI, Inc. in October 2005, it included in its approval order a condition requiring that the merger applicants "conduct business in a way that comports with the Commission's Internet policy statement issued in September."[3]

Of the major broadband Internet platforms, cable modem service has never been subject to a 'net neutrality' mandate. Indeed, following the Supreme Court's decision in Brand X,[4] it is unclear whether the FCC has authority to mandate net neutrality on cable modem service. DSL broadband service, by contrast, lived under "common carriage" requirements from its inception, and only recently escaped the Communications Act's Title II common carriage obligation.[5] Because neither broadband service is regulated as "common carriage," the Federal Trade Commission has indicated that it has jurisdiction over these services under its consumer protection and competition policy authority.

The legal prerogative to impose net neutrality obligations is far from clear. The FCC has uncertain authority, at best, under its Title I jurisdiction, and hence has turned to "voluntary" agreements to abide by net neutrality principles under its merger authority. Meanwhile, the FTC as a general matter is loath to engage in prophylactic rulemaking, and instead is institutionally directed toward addressing specific claims of consumer fraud or harm. Thus, while murmurs of net neutrality regulation are heard at the FCC and FTC, neither regulatory agency has indicated the will, much less appetite or legal authority, to impose net neutrality mandates on broadband platforms.

Congress

Congress is in the process of considering revisions to our communications law, and may be doing so for some time. The Commerce Committees of the House and Senate have primary jurisdiction over communications law. The bill passed by the House—Barton/Rush—contains what has been termed a "weak" net neutrality provision. A separate bill by House Judiciary Committee Chairman Sensenbrenner that was approved by his committee would impose net neutrality requirements by amending the Clayton Act, but the House Rules Committee rejected the possibility of this being considered as an amendment to Barton/Rush on the House floor. The main Senate bill, sponsored by Senators Stevens and Inouye, obliges the FCC to study the issue and report back to Congress, but does not contain a mandate. Meanwhile, stand-alone net

[3] News Release, "FCC Approves SBC/AT&T and Verizon/MCI Mergers," October 31, 2005. The FCC characterized the conditions it imposed, including the one relating to Net Neutrality, as "voluntary commitments." Of course, the applicants were anxious to have the Commission approve the proposed mergers without any further delay. For two articles explaining how the FCC uses—or, perhaps put more bluntly, abuses—the merger approval process to impose "voluntary" conditions that do not directly relate to any claimed competitive impacts uniquely associated with the proposed merger, see Randolph J. May, Telecom Merger Review-Reform the Process, National Law Journal, May 30, 2005, at 27; Randolph J. May, Any Volunteers?, Legal Times, March 6, 2000, at 62.

[4] Nat'l Cable & Telecomm. Assn. v. Brand X Internet Services, Sup. Ct. Docket No. 04-277 (June 27, 2005).

[5] Appropriate Framework for Broadband Access to the Internet Over Wireline Facilities, CC Docket Nos. 02-33 et al., Report and Order and Notice of Proposed Rulemaking (rel. Sept. 23, 2005).

neutrality legislation has been proposed by Senator Wyden and Representative Markey, respectively. Senator Ensign's comprehensive communications bill contains guaranteed network access rights of the type embodied in the FCC principles. Finally, S. 2113, the Digital Age Communications Act introduced in December 2005 by Senator DeMint, which closely mirrors the proposals put forward by PFF's DACA Project, does not contain a separate net neutrality provision, but instead leaves net neutrality to be dealt with in a competition policy context.

Q. Given the FCC's actions to promote net neutrality principles thus far, is it necessary for Congress to step in?

No. Although the FCC has exercised restraint in order to avoid scaring away broadband investors, it also has (1) stated a clear preference for giving consumers access to the content, etc. of their choice; (2) taken action to preserve that access (e.g., swift action against Madison River Communications, adoption of merger conditions); and (3) maintained that it has jurisdiction to preserve such access if problems arise in the future.

Whether or not one wishes the FCC had an even more aggressive approach, it is undeniable that there haven't been any significant or sustained restrictions on legal content, applications or devices by broadband networks under the agency's policy. Further, even if future FCC efforts to promote net neutrality are challenged in court, its views likely will determine networks' behavior over the years the issue would be litigated on appeal. Policymakers should press net neutrality proponents to explain why new legislation is necessary given there is no evidence the FCC's policy isn't already working to address their concerns.

Q. Why do some feel it is important to impose net neutrality rules at this time?

The rationales for imposing net neutrality mandates rest on notions of preserving "openness" on the Internet. Net neutrality proponents often couch their arguments in terms of "open" versus "closed" networks and they warn of the dangers of broadband service providers using their transmission facilities to control applications or services that run over their "pipes."

In particular, net neutrality proponents claim to fear increased vertical integration by broadband network operators, arguing that the integration of conduit and content within a broadband environment will diminish the overall neutrality of the Internet. They believe that innovation occurs at the edge of the network – in content and applications – and that the pipes through which all this information flows are "dumb" and should remain so. In antitrust parlance, proponents fear that broadband network owners will leverage market power in the network layer to foreclose competition and establish monopoly power in the application and content layers.

The network, in effect, would be subject to a rule of strict vertical separation between providing broadband service, and running applications or content over that broadband service.

Q. Wouldn't a network neutrality mandate at least protect existing robust competition among applications, content and device makers?

There is reason to expect that a network neutrality mandate actually might weaken the competitive vibrancy of the content, applications and device components of the Internet. For all its flexibility, the Internet cannot be all things to all users. For example, Internet protocols (e.g., TCP/IP) route packets of digitized data over the Internet anonymously on "first come, first served" and "best effort" bases. This approach has worked well for applications or related devices that are not time- or latency-sensitive. This approach works poorly, however, for uses that depend on a steady transfer of data of networks, such as streaming media, including Internet delivery of high-definition television, online gaming and even Voice-over-IP.[6]

Similarly, a network neutrality mandate might complicate efforts to keep the Internet safe and reliable. An ideological insistence on the “end-to-end” principle would forbid security and reliability fixes within the network. Net neutrality would advantage a certain type of non-latency-sensitive application and content, but disadvantage more latency-sensitive applications such as video, voice or interactive gaming.

Proponents’ rejoinder to this is that if the broadband network providers just build big enough pipes, then latency will not be an issue and all applications can flow freely to consumers.

Q. Why would a net neutrality requirement not be in the interests of consumers? Won’t broadband operators engage in anti-consumer behavior if regulators fail to impose legal protections in a preemptive fashion?

Broadband providers only make money by signing up more customers and keeping them satisfied. If a broadband provider were to encumber the web-surfing experience or block device interconnectivity in a way inconsistent with consumer expectations and preferences, that operator would lose customers. Simply put, it wouldn’t take long before marketplace pressures would cause the operator to alter its behavior. Indeed, even a monopolist has every incentive to maximize traffic on its network, and thus not block consumer access to any content.[7]

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[6] Christopher S. Yoo, Beyond Network Neutrality, Vanderbilt University Law School, Public Law and Legal Theory (Working Paper No. 05-20), Law & Economics (Working Paper No. 05-16), available at http://ssrn.com/abstract=742404 (visited Feb. 1, 2006), at 5.

[7] For explanation of the “internalization of complementary externalities” (ICE) principle, which explains how even a platform monopolist will want to maximize use of its platform (be it a game platform, a computer operating system, or a broadband provider), see Joseph Farrell & Philip J. Weiser, Modularity, Vertical Integration and Open Access Policies: Towards A Convergence of Antitrust and Regulation in The Internet Age, 17 Harv. J. L. & Tech. 85, 100-105 (2003).

While it will be in the best interests of broadband operators to maintain a high degree of interoperability/openness – because that is what consumers will demand – a purely "dumb pipe" approach would not be in the best interests of all consumers. The availability of certain integrated services and applications may enrich the Web-surfing experience. This is true, for example, for entry-level broadband subscribers for whom such integration may make it easier for them to get started. Consider the popularity of AOL's "walled garden" or "guided-tour" approach to websurfing, which for many years has been the launch pad for consumers' intial web-surfing experience. Similarly, a net neutrality mandate might interfere with an operators' ability to customize Internet access packages to consumers, such as a "family-friendly" surfing environment.

Q. What are the potential costs of a net neutrality mandate?

The most serious danger associated with net neutrality regulation is its potential impact on future broadband network innovation and investment. Do we want only one "dumb pipe," or many competing dumb and smart pipes?

Net neutrality mandates represent the forced commoditization of broadband infrastructure.[8] Broadband providers would be prohibited from experimenting with different network architectures that might conflict with the one-size-fits-all "end-to-end"/dumb pipe model. Under a net neutrality regime, the providers would have difficulty developing innovative business models that would permit them to recoup the significant fixed costs of building out broadband networks. Andrew Odlyzko of the University of Minnesota's Digital Technology Center has suggested the issue comes down to whether network owners can earn enough of a return that capital markets will fund expensive and economically risky investments in broadband networks.[9] Net neutrality proponents trivialize the supply-side problems created by the dumb pipe model. Forced commoditization leaves the service provider with very little, if any, room for innovation through service integration or a change in network standards / architecture. In that environment, investment dries up.

By seeking to impose restrictions that inevitably have the effect of stifling investment in new networks, net neutrality proponents implicitly assume what we have today is all we should ever expect to have in the way of broadband networks. This static

[8] As Christopher Yoo, associate professor of law at Vanderbilt Law School, argues, "[I]mposing network neutrality could actually frustrate the emergence of platform competition in the last mile. Put another way, protocol standardization tends to commodify network services. By focusing competition solely on price, it tends to accentuate the pricing advantages created by declining average costs, which in turn reinforces the market's tendency towards concentration. Conversely, increasing the dimensions along which networks can compete by allowing them to deploy a broader range of architectures may make it easier for multiple last-mile providers to co-exist." Christopher S. Yoo, Would Mandating Broadband Network Neutrality Help or Hurt Competition? A Comment on the End-to-End Debate, 3 Journal on Telecommunications & High Technology Law, vol. 3, 2004, p. 63.

[9] Andrew Odlyzko, Pricing and Architecture of the Internet: Historical Perspectives from Telecommunications and Transportation 6 (last revised Aug. 29, 2004) (unpublished manuscript, on file with the University of Minnesota Digital Technology Center), available at http://www.dtc.umn.edu/~odlyzko/doc/pricing.architecture.pdf

approach certainly doesn't make sense in the digital age. Moreover, if investment in the network is inadequate, this will inevitably affect the types of content and applications that are possible. An antiquated network is going to be a drag on innovation at the "edge."

Q. What about concerns that a net neutrality mandate will lead to more regulation of the Internet?

Fears that a network neutrality mandate would usher in subsequent regulation are not merely speculative; they are supported by the FCC's experience in regulating "enhanced" services and attachments to the narrowband, telephone network in its Computer Inquiry, Part 68 proceedings and local telephone competition proceedings.

The Computer Inquiry requirements were adopted over many years beginning in the 1970s and, at base, were designed to allow telephone companies to participate in the emerging data processing industry on the condition that they afford competing "enhanced" or information service providers (e.g., third-party voicemail providers) the same access to the transmission capability of the phone network. Phone companies had to file the terms and conditions of these "basic" services with tariff reviewers at the FCC, subject to regulation that the prices for these services be "just and reasonable." The Computer Inquiry spawned a vast maze of requirements so Byzantine that few attorneys at the FCC or elsewhere claimed to understand them fully. Many of the requirements were rejected in a series of court appeals.

By analogy to the broadband context, it seems likely that any network neutrality mandate that Congress adopts (and that survives implementation and judicial review) will be met with calls for additional regulation of the price and other terms of this "neutral" access. This additional regulation would heighten the burden imposed by a network neutrality mandate itself, thereby further discouraging investment in broadband networks. Regulatory mission creep will be inevitable.

Q. But aren't these concerns valid in light of the market power some broadband providers have today?

Broadband markets will never be characterized by limitless entry. The economics of broadband are not those of a corner lemonade stand; there will never be dozens of entrants vying for our business. The sunk costs associated with rolling out high-speed video, voice and data services to every home and business in a community are staggering. For many decades, these "high fixed costs-low marginal cost" economic realities led many public officials to believe that communications was destined to forever be considered a natural monopoly. This made regulation inevitable.

But recent developments in this field prove conclusively that broadband can be competitive. One only has to scan the daily newspaper—either in-hand or online—to see the alacrity with which cable operators, telephone companies, satellite and terrestrial wireless providers all are racing to offer integrated packages of voice, video,

and Internet access services. Other potential broadband operators, such as power companies, lurk on the sidelines as potential competitors. On the margin, net neutrality mandates make the emergence of the sought-after "third pipe" less likely. By limiting the economic freedom for broadband operators to innovate with business models, net neutrality makes the prophecy that broadband will always be a duopoly self-fulfilling.

Q. Would Net neutrality rules cover anything more than the physical (infrastructure) layer of the Internet?

"Nondiscrimination" and other concepts underlying network neutrality mandates, in principle, are not easily limited to the operation of broadband networks. This raises the question whether content and applications companies should treat other companies "neutrally" in the event network owners are required to do so. There is certainly no reason in principle that neutrality mandates should not extend to other layers of the Internet. If the rationale for net neutrality is the normative value of "openness" then by all means the mandate should apply to all Internet layers.

Q. Aren't Net neutrality regulations simply the extension of traditional common carriage principles for the Information Age?

Indeed, net neutrality rules are little more than old wine in new bottles. Whether there should be mandated access rights of one form or another is a recurring question in "network" industries in general and the communications sector in particular. While the call for mandated network access assumes different names at different times, the change in terminology should not confuse the underlying issues at stake. For roughly the first three quarters of the 20th century, the nation's telecommunications marketplace was dominated by AT&T. Before the 1984 breakup of the integrated Bell System in compliance with the antitrust consent decree in U.S. v. AT&T,[10] no one seriously disputed AT&T's market power in the local telephone market. Thus, when the FCC fashioned its landmark Computer II regime in the early 1980s, as the previously separate communications and data processing markets began to converge to enable the creation of a new online services market, it was not surprising that the new regime imposed on AT&T a non-discrimination requirement and safeguards intended to enforce it.[11]

There may be debate concerning the current competitiveness of the broadband marketplace and the extent of market power of any of the various broadband providers. But it is very difficult to argue with the FCC's assertion in 2002, when it initiated the rulemaking proposing to reclassify telephone company-provided broadband services as information services, that there are now "very different legal, technological and market circumstances" than when the agency "initiated its Computer Inquiry line of cases."[12]

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[10] United States v. AT&T, 552 F.Supp.131 (D.D.C. 1982), aff'd sub nom. Maryland v. United States, 460 U.S. 1001 (1983).

[11] See Second Computer Inquiry, Final Decision, 77 F.C.C. 2d 384 (1980).

[12] Appropriate for Broadband Access to the Internet over Wireline Facilities, Notice of Proposed Rulemaking, 17 F.C.C. Rcd. 3019, 3038 (2002).

In the four years since that FCC observation (one of many, of course) the pace of technological and marketplace change has continued to accelerate. Broadband networks have vastly more bandwidth available than previously and, as the FCC recently observed, this greater bandwidth encourages the introduction of services "which may integrate voice, video, and data capabilities while maintaining high quality of service."[13] The Commission goes on to add that, in a digital world "it may become increasingly difficult, if not impossible, to distinguish 'voice' service from 'data' service, and users may increasingly rely on integrated services using broadband facilities delivered using IP rather than the traditional PSTN (Public Switched Telephone Network)."[14]

Q. Will Net neutrality regulations have any impact on the price of service, or is this debate just about access?

Common carrier law is toothless without price regulation. Unless regulators have the ability to also control prices, non-discrimination principles are meaningless. After all, a broadband provider faced with a behavior constraint could simply price access to the regulated service or application at a higher rate if the provider wanted to discriminate against the service. If net neutrality regulations were implemented and pricing rules followed, this would represent the beginning of a price control regime for the Internet.

Initially, net neutrality mandates might not result in price regulation. It remains uncertain how broadband service providers will package and price services. Currently a flat "all-you-can-eat" monthly price is the prevailing model. It is possible that in the future some broadband providers will experiment with tiered or metered pricing models. Some consumers and bandwidth-intensive Internet vendors and website operators will likely protest the move toward differential pricing of Net access. Some may even run to regulators seeking redress. A "dumb pipe" mandate or net neutrality rule might allow regulators to prohibit such pricing experimentation to appease those constituencies.

It would be very unfortunate if this scenario came to pass, since such creative pricing models may be part of the long-run solution to relieving Internet congestion and allowing carriers to accurately assess user charges for Web activities. Supply and demand could be better calibrated under such pricing models and broadband operators may be better able to recoup sunk costs and make new investments in future infrastructure capacity or network services.[15]

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[13] IP-Enabled Services, Notice of Proposed Rulemaking, 19 F.C.C. Rcd 4863, 4876 (2004).

[14] Id.

[15] As Andrew Odlyzko argues: "Thus even if it is not optimal from a global point of view, it might be necessary to introduce complexity in order to be able to construct and operate the telecom infrastructure, especially the residential broadband networks that are so eagerly awaited by government and industry leaders. That might mean allowing carriers to charge differently for movie downloads than for Web surfing. That, in turn, might require a new network architecture. Such a move would not be unprecedented. The key (although seldom mentioned) factor behind the push for new network architectures appears to be the incentive to price discriminate. It is an incentive that has been operating since the beginnings of commerce." Odlyzko, p. 3.

It should be left to markets, not regulators, to determine what pricing models are utilized in the future to allocate scarce space on broadband pipes.

Q. Many telecom reform proposals circulating on Capitol Hill include specific net neutrality provisions. PFF's Digital Age Communications Act proposal, which is embodied in S. 2113, the Digital Age Communications Act bill introduced by Sen. DeMint, does not include such language. Why is that?

It is true that some legislative proposals have broad language that would prohibit broadband service providers from "blocking, impeding, or impairing" access to any lawful content on the Internet or from preventing any consumer from utilizing any equipment and devices in connection with lawful content or applications. However well-intentioned these net neutrality proposals, they should not be included in legislation. As explained above, as a general matter there are substantial harms that might result from the imposition of net neutrality mandates, including the discouragement of investment in new network facilities and the inhibition on the development and offering of new services and applications. Nevertheless, there may well be marketplace circumstances where consumer welfare would be enhanced by imposition of net neutrality-like remedies.

The DACA proposal provides for relief in instances where net neutrality-like abuses are demonstrated. For example, it might be demonstrated that access to a web site has been blocked or impaired by a service provider with dominant market power for purely anticompetitive reasons and without countervailing benefits to consumers. Indeed, the DACA model provides the most appropriate way for consideration of such claims. DACA specifically includes a process under which complaints alleging anticompetitive abuses—including net neutrality-like claims of denial of access or preferential treatment—would be filed with the FCC and adjudicated subject to statutory deadlines. The complaints would be decided under the unfair competition standard. In effect, this means that there would be an economically rigorous market-oriented determination based on the specific factual allegations of abuse. The focus would be on marketplace circumstances, such as the current market structure, existing and potential competition, barriers to entry, the likely harm to consumers from granting relief or not, and the like.

As Senator Stevens wisely remarked recently, defining net neutrality is like "defining a vacuum." He added: "It is not easy to do."[16] Because of this, it is far better to proceed cautiously, tailoring relief to address the circumstances of each case and, in contrast to legislative mandates, for only so long as relief is warranted.

[16] Reported in Multichannel News, February 7, 2006, available online at http://www.multichannel.com/article/CA6305622.html?display=Breaking+News.

Q. What is your bottom line?

Net neutrality is a premature bit of industrial policy that has the effect of favoring companies engaged at the application and content layer of the Internet over those investing in the physical broadband networks. There is little evidence, or reason to believe, that these interdependent Internet players cannot reach commercial agreements on whether they pay one another, and who pays whom – access providers for content, or content providers for access. Net neutrality will have the effect of advantaging non-latency sensitive Internet innovations over latency-sensitive ones like voice and video. Finally, the logic of network neutrality regulation will not confine itself to just physical broadband networks, but rather extend to interoperability, access and "openness" mandates on all types of applications – VoIP services, IM services, social networking, search engines and online commerce. The logical progression of net neutrality regulation would be an encompassing Internet-regulation regime, extending to both price and content.

Appendix: Additional PFF Reading on Net Neutrality Regulation

Papers, Books & Testimony:

- ***Net Neutrality or Net Neutering: Should Broadband Internet Service Be Regulated?*** edited by Thomas M. Lenard and Randolph J. May, Springer Science+Business Media, Inc., 2006.

- **"Rhetoric vs. Reality: Lessig on Network Neutrality,"** PFF *Progress Snapshot* 2.14, by Kyle D. Dixon, June 2006, http://www.pff.org/issues-pubs/ps/2006/ps_2.14_netneut_lessig.html

- **"'Let the FTC Do It!' Maybe It Already Can,'"** PFF *Progress Snapshot* 2.12, by Raymond Gifford, April 2006, http://www.pff.org/issues-pubs/ps/2006/ps2.12ftc.pdf

- Testimony of Kyle D. Dixon before the U.S. Senate Committee on Commerce, Science and Transportation, February 7, 2006, http://www.pff.org/issues-pubs/testimony/060207dixonsenatecommerce.pdf

- "**The Economics of Net Neutrality: Why the Physical Layer of the Internet Should Not Be Regulated**," by Christopher S. Yoo, PFF *Progress on Point* 11.11, July 2004, http://www.pff.org/issues-pubs/pops/pop11.11yoonetneutrality.pdf

- "**Are 'Dumb Pipe' Mandates Smart Public Policy? Vertical Integration, Net Neutrality, and the Network Layers Model**," by Adam Thierer, *Journal of Telecommunications & High-Technology Law*, Vol. 3, Issue 2, 2004, pp. 275-308.

Event Transcripts:

- "**Net Neutrality or Net Neutering in a Post-Brand X World: Self-Regulation, Policy Principles, and Legal Mandates in the Broadband Marketplace**," September 21, 2005 (featuring Thomas Tauke, Dan Brenner, David McClure, Peter Pitsch, Gigi Sohn, and Adam Thierer), PFF *Progress on Point* 12.29, http://www.pff.org/issues-pubs/pops/pop12.29netneutrality.pdf

- "**Should the Net's Physical Layer be Regulated**?" September 2004 (featuring Randolph May, C. Lincoln Hoewing, John Nakahata, Adam Thierer, Joe Waz, Richard Whitt, and Christopher Yoo), PFF *Progress on Point* 11.14, http://www.pff.org/issues-pubs/pops/pop11.14netneutralitytranscript.pdf

- "**Net Neutrality or Net Neutering: Should Broadband Internet Services Be Regulated**?" November 2003 (featuring Jeffrey Campbell, Mark Cooper, Joseph Farrell, W. Kenneth Ferree, Raymond L. Gifford, Thomas M. Lenard, Randolph J. May, Paul Misener, Bruce Owen, Gregory Rosston, David Scheffman, John Scheibel, Robert Sachs, Tom Tauke, and Nancy Victory), PFF *Progress on Point* 10.22, http://www.pff.org/issues-pubs/pops/pop10.22netneutrality.pdf

Assorted PFF Blog Entries:

- Ray Gifford, "**A Natural End to Net Neutrality: Why Only the Lawyers Win**," June 1, 2006, http://blog.pff.org/archives/2006/06/a_natural_end_t.html
- Adam Thierer, "**Hillary Clinton, Net Neutrality Regulation & the Great Leap of Faith**," May 22, 2006, http://blog.pff.org/archives/2006/05/hillary_clinton_1.html
- Patrick Ross, "**Net Neutrality in Lake Wobegon**," May 22, 2006, http://blog.pff.org/archives/2006/05/net_neutrality_11.html
- Ray Gifford, "**Un-Neutral Neutrality--Postmodern Conundrums**," May 19, 2006, http://blog.pff.org/archives/2006/05/unneutral_neutr.html
- Adam Thierer, "**Net Neutrality Regs Could Threaten Online High-Def Video**," May 8, 2006, http://blog.pff.org/archives/2006/05/how_net_neutral.html
- Adam Thierer, "**Do You Really 'Save the Internet' by Regulating It?**" April 25, 2006, http://blog.pff.org/archives/2006/04/do_you_really_s.html
- Kyle Dixon, "**New Neutrality Proposals: Ask Me No Questions, Tell Me No . . .**" April 6, 2006, http://blog.pff.org/archives/2006/04/new_neutrality_2.html

- Randolph May, "'**Google, Microsoft Subject to Net Neutrality Complaints'**" March 31, 2006, http://blog.pff.org/archives/2006/03/google_microsof_1.html
- Ray Gifford, "**Net Neutrality: The Small Consumers' Burden**," March 31, 2006, http://blog.pff.org/archives/2006/03/net_neutrality_7.html
- Kyle Dixon, "**Adjudicating Network Neutrality: Upsides, Downsides and Practical Implications**," March 30, 2006, http://blog.pff.org/archives/2006/03/adjudicating_ne.html
- Randolph May, "**Net Neutrality Viewed Charitably**," PFF *Blog*, February 1, 2006, http://blog.pff.org/archives/2006/02/net_neutrality_2.html
- Patrick Ross, "**This Consumer Chooses Choice**," PFF *Blog*, December 21, 2005, http://blog.pff.org/archives/2005/12/this_consumer_c.html
- Ray Gifford, "**The New Unbundling: Net Neutrality**," PFF *Blog*, December 16, 2005, http://blog.pff.org/archives/2005/12/the_new_unbundl.html
- Kyle Dixon, "**A Silver Lining to Net Neutrality Merger Conditions**?" PFF *Blog*, November 3, 2005, http://blog.pff.org/archives/2005/11/a_silver_lining.html
- Adam Thierer, "**The Real Net Neutrality Debate: Pricing Flexibility Versus Pricing Regulation**," PFF *Blog*, October 27, 2005, http://blog.pff.org/archives/2005/10/the_real_net_ne.html
- Kyle Dixon, "**GoogleTalk and Net Neutrality: A Cautionary Tale**," PFF *Blog*, August 25, 2005, http://blog.pff.org/archives/2005/08/googletalk_and.html
- Kyle Dixon, "**Net Neutrality Mandates After the FCC's Policy Statement**," PFF *Blog*, August 11, 2005, http://blog.pff.org/archives/2005/08/net_neutrality_1.html