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I. Ex post analysis of ISP conduct would yield the optimal balance of consumer protection and innovation incentives

The necessity of the FTC's involvement in regulating broadband competition arises most recently from the Federal Communication Commission's ("FCC") 2018 Restoring Internet Freedom Order ("*2018 RIFO*").[1] In the *2018 RIFO*, the FCC adopted a competition-oriented approach to preventing what are otherwise violations of so-called "net neutrality" principles.[2] This approach, consistent with the FCC's historical deregulatory approach to information services,[3] directly implicates the FTC as an important part of preventing competitive injuries that harm downstream consumers.

Rather than simply presuming harm, the FCC undertook an extensive, thorough, and fact-based analysis to first assess the likely *risk* of competitive harms that could arise in the broadband market.[4] Based on this analysis, it concluded that the risk of harmful conduct is low, in terms of both the likelihood that ISPs will engage in such conduct and its potential adverse effects on consumers. Because this risk is low, the FCC determined that a "light-touch," competition-oriented regulatory approach was appropriate for regulation of broadband.[5]

This conclusion also followed from the FCC's review of the Communications Act. As the FCC observed, "[t]he Communications Act includes an antitrust savings clause, so the antitrust laws apply with equal vigor to entities regulated by the Commission."[6] Recognizing this, the Commission carefully structured the *2018 RIFO* so that consumers would be protected under existing consumer protection and antitrust laws, while still leaving room for the historically applied light-touch regime for information services under Title I of the Communications Act.

In so doing, the FCC struck the proper balance between indirect antitrust enforcement and direct regulation under the Communications Act, which incorporates

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[1] Restoring Internet Freedom, Declaratory Ruling, Report and Order, and Order, 33 FCC Rcd. 311 (2018) [hereinafter "*2018 RIFO*"].

[2] *Id.* ¶¶ 2-3.

[3] *See* Protecting and Promoting the Open Internet, Report and Order on Remand, Declaratory Ruling, and Order, 30 FCC Rcd. 5601 (2015) [hereinafter "*2015 OIO*"].

[4] *2018 RIFO* ¶¶ 109-139

[5] *2018 RIFO* ¶¶ 109-16.

[6] *2018 RIFO* ¶ 143.

competition policy as the generally applicable regulatory "default" in the absence of specific statutory mandates.

A. Net neutrality regulation is properly implemented through competition policy

In the *2018 RIFO* the FCC specifically acknowledged that regulation designed to prevent net neutrality harms was rooted in competition principles, observing that "[t]he premise of Title II and other public utility regulation is that ISPs can exercise market power sufficient to substantially distort economic efficiency and harm end users."[7] Indeed, network neutrality rules address conduct that "[i]f undertaken for anti-competitive purpose and achieving anti-competitive effect, [] would be deemed vertical foreclosure in economics (or under antitrust law)."[8]

The FCC previously acknowledged that "[c]ommitment to robust competition and open networks defined Commission policy at the outset of the digital revolution,"[9] and that "[t]he principles of open access, competition, and consumer choice embodied in *Carterfone* and the *Computer Inquires* have continued to guide Commission policy in the Internet era."[10] Likewise, the Commission explicitly acknowledged in the *Title II Order* that its asserted authority under Section 706 was based, at least in part, on a mandate to promote competition.[11] Most telling, in a section titled "Competitive Effects" the FCC noted that:

> As the Commission has found previously, broadband providers have incentives to interfere with and disadvantage the operation of third-party Internet-based services that compete with the providers' own services. Practices that have anti-competitive effects in the market for applications, services, content, or devices would likely unreasonably interfere with or unreasonably disadvantage edge providers' ability to reach consumers in ways that would have a dampening effect on innovation, interrupting the virtuous cycle. As such, these anticompetitive practices

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[7] *2018 RIFO* ¶ 123; *See also* FCC *Title II Order* ¶ 79 & n.123 (discussing past instances of alleged ISP misconduct that amounted to "limit[ations on] openness," all of which were cognizable under the antitrust laws) (citing *Open Internet Order* ¶¶ 20-37).

[8] Joshua D. Wright & Thomas W. Hazlett, *The Effect of Regulation on Broadband Markets: Evaluating the Empirical Evidence in the FCC's 2015 "Open Internet" Order*, 50 Rev. Indus. Org. 487, 489 (2017),

[9] FCC *Title II Order* ¶ 63

[10] FCC *Title II Order* ¶ 64.

[11] FCC *Title II Order* ¶ 275.

> are likely to harm consumers' and edge providers' ability to use broadband Internet access service to reach one another . . . .[12]

Thus, competition—and, by implication, anticompetitive behavior of ISPs—is one of the core concerns that drove development of Internet policy at the FCC. The FTC therefore properly considers this topic as part of its larger broadband regulatory agenda.

The potential net neutrality harms that the FCC has previously identified are largely derived from vertical foreclosure theory, and are thus rooted in the classic antitrust concern that dominant firms in a vertical supply chain may foreclose competitors from access to consumers or extract supracompetitive prices from input providers.[13] The FCC's 2015 *Open Internet Order* described "three types of incentives [for ISPs] to reduce the current openness of the Internet:" (1) "benefit[ing their] own or affiliated offerings at the expense of unaffiliated offerings,"[14] (2) "charging edge providers . . . for access or prioritized access to end users,"[15] and (3) "degrad[ing] or declin[ing] to increase the quality of the service they provide to non-prioritized traffic."[16]

Each of these examples of potential ISP misconduct raises straightforward, potential antitrust concerns regarding vertical conduct.[17] The FTC and DOJ, with their copious expertise in this area, are undoubtedly the proper locus of regulatory oversight of broadband providers—just as they are in every other sector of the economy.

Importantly (and not surprisingly), not only are the antitrust agencies the proper enforcers of these competition rules, but antitrust enforcers and courts—following antitrust economists—also employ the proper *approach* to evaluating potentially anticompetitive vertical conduct: assessing such vertical restraints under the rule of reason, and avoiding their presumptive condemnation because they only rarely result in actual anticompetitive harm.[18]

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[12] FCC *Title II Order* ¶ 140.

[13] *See* Patrick Rey & Jean Tirole, *A Primer on Foreclosure*, in III HANDBOOK OF INDUS. ORG. 2145 (Mark Armstrong & Rob Porter eds., 2007).

[14] *Open Internet Order* ¶ 21

[15] *Id.* ¶ 24

[16] *Id.* ¶ 29

[17] *See* Rey & Tirole, *A Primer on Foreclosure*, *supra* note 13.

[18] *See* Francine Lafontaine & Margaret Slade, *Vertical Integration and Firm Boundaries: The Evidence*, 45 J. ECON. LIT. 629 (2007) (documenting the economic evidence showing that such vertical relationships are more likely to be competitively beneficial or benign than to raise serious threats of foreclosure).

The FTC's *ex post* approach to remedying competition harms is the correct approach to policing net neutrality violations. The effects of potentially harmful conduct must be evaluated and weighed against the various aims that competition law seeks to promote; only following that review can it possibly be determined whether particular conduct is harmful and, if so, whether there are procompetitive benefits that outweigh the harm. In a similar vein, *per se* prohibitions in antitrust are the exception to the general rule that potentially anticompetitive practices are judged in context and on their merits:

> [The] *per se* rule should be applied "only after courts have had considerable experience with the type of restraint at issue" and "only if courts can predict with confidence that [the restraint] would be invalidated in all or almost all instances under the rule of reason" because it "'lack[s] . . . any redeeming virtue.'"[19]

Moreover, today vertical restraints are never evaluated under a *per se* standard.[20] Although not precisely identical, ex ante restraints operate in much the same fashion as *per se* rules, and should be imposed with similar caution here, where the concerns are vertical concerns. Ex ante regulation no doubt has its place, of course, but not as a means to route around economically informed antitrust economics. As Justice Breyer has observed, "[r]egulation is viewed as a substitute for competition, to be used only as a weapon of last resort—as a heroic cure reserved for a serious disease."[21]

At the same time, the technical and economic realities of building, operating, and constantly improving a flexible, modern communications network mean that proscriptive, ex ante rules may be over-broad as well as quickly out of date. As one group of economists (including the current Chief Economist of the European Commission's Competition Directorate) charitably put it:

> [T]he situation involves multiple participants in complementary economic relationships where they share the costs and benefits of actions, and users benefit from improvement and investment. It should come as no surprise, therefore, that the thrust of the conclusions from economic

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[19] *Leegin Creative Leather Prods., Inc. v. PSKS, Inc.*, 551 U.S. 877, 886-87 (2007)

[20] *See* D. Daniel Sokol, *The Transformation of Vertical Restraints: Per Se Illegality, the Rule of Reason, and Per Se Legality*, 79 ANTITRUST L.J. 1003, 1004 (2014) ("[T]he shift in the antitrust rules applied to [vertical restraints] has not been from per se illegality to the rule of reason, but has been a more dramatic shift from per se illegality to presumptive legality under the rule of reason").

[21] Stephen G. Breyer, *Antitrust, Deregulation, and the Newly Liberated Marketplace*, 75 CAL. L. REV. 1005, 1007 (1987).

> analysis tilt against simplistic declarations in favor or against net neutrality. This suggests that ***bold and sweeping recommendations and interventions, given the current state of empirical knowledge, have a substantial chance of being misguided***.[22]

II. Paid prioritization and nonlinear pricing can be a net benefit

As the net neutrality discussion indicates, a significant focus of broadband competition regulation relates to vertical conduct. And this is likely only to increase in significance going forward as the relationship between content and distribution continues to evolve as changing technology, business models, and consumer conduct evolve—especially as the market undergoes further vertical integration.[23]

The competitive implications of the vertical relationship between content and distribution has been at the contentious heart of the FCC's broadband regulatory efforts. Yet the economic underpinnings of the FCC's approach—most prominently in its 2015 Open Internet Order ("*2015 OIO*")— were either absent or misguided. In particular, the *2015 OIO*'s outright prohibition on the paid prioritization of certain content by broadband providers was antithetical to the competitive realities of the broadband and content markets, and to the economic literature that has informed the antitrust approach to such vertical restraints for decades.

As we discuss below, economic research in fact demonstrates that, under most realistic market conditions, such a *per se* ban on a vertical restraint like paid prioritization would lower consumer welfare.[24] The regulation of content prioritization (or of the levying of terminating access fees on content providers) must address whether the asserted benefits of mandated "openness" outweigh the possible forsaken benefits to consumers, infrastructure investment, and competition from prohibiting

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[22] Shane Greenstein, Martin Peitz & Tommaso Valletti, *Net Neutrality: A Fast Lane to Understanding the Trade-offs*, 30 J. ECON. PERSP. 127, 146-47 (2016) (emphasis added).

[23] *See, e.g.*, U.S. v. AT&T, Inc., et al., 310 F. Supp. 3d 161, 164 (D.D.C. 2018) ("The video programming and distribution market, [AT&T and Time Warner] point out, has been, and is, in the middle of a revolution where high-speed internet access has facilitated a 'veritable explosion' of new, innovative video content and advertising offerings over the past five years. Vertically integrated entities like Netflix, Hulu, and Amazon have achieved remarkable success... [while] web giants Facebook and Google have developed new ways... to create effective—and lucrative—digital advertisements....").

[24] *See, e.g.*, Kevin W. Caves, *Modeling the Welfare Effects of Net Neutrality Regulation: A Comment on Economides and Tag*, 24 INFO. ECON. & POL'Y 288, 288-92 (2012); Marc Bourreau, *et al.*, *Net Neutrality with Competing Internet Platforms*, 63(1) J. OF INDUS. ECON. 30, 63 (2015).

discrimination. At worst the economic literature is ambivalent on this point, and the weight of the evidence makes clear that an outright ban is unsupported.

Moreover, such a ban is at odds with the technological and business realities confronting the broadband market. Banning paid prioritization has been popularized as "protect[ing] against '*fast lanes*.'"[25] While the term, "fast lane," is used colloquially with great frequency, it rarely appears in the economic and technical literature. And for good reason: Reducing the relevant dimension of prioritized data transmissions to speed alone is overly simplistic. Numerous factors determine the ultimate performance of network data flows, including throughput, latency, jitter, and packet loss. Thus, for example, prioritized videoconferencing data arrives with less latency; streaming video data with better throughput. It is more accurate to say that "prioritization" is the application of network management strategies to ensure that prioritized content arrives with properties appropriate to its data type at a higher guaranteed minimum level than minimal "best practices" management would. That's not as catchy as "fast lane," but it *is* more accurate. It also highlights the important tradeoffs ignored by a *per se* ban on such conduct.

A. Some basic economics of networks, two-sided pricing, and price discrimination

Tim Wu, the father of the concept of "net neutrality," acknowledged the presence of the tradeoffs inherent in mandating neutrality early on—although the advocacy for and implementation of net neutrality in practice has virtually entirely ignored them. Among other things, as he noted in 2009, prohibiting two-sided pricing and content prioritization (thus precluding user subsidies) invariably raises consumer prices:

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[25] *2015 OIO* ¶ 18 (emphasis added). It should be noted that the NPRM for the *2015 OIO* did not mention fast lanes (but, then, nor did it include a *per se* ban on paid prioritization). *See Protecting and Promoting the Open Internet*, WC Docket No. 14-28, Notice of Proposed Rulemaking, 29 F.C.C. Rcd. 5561 (2014) ("Although the proposed no-blocking rule only establishes a minimum level of service, and thus allows room for individualized negotiations, the proposed commercial reasonableness rule separately applies to any and all conduct, including by asking whether paid prioritization can be barred outright."). Chairman Wheeler, however, *did* use the phrase in his statement accompanying the NPRM. *See Id.* at 5646 (Statement of Chairman Tom Wheeler) ("The potential for there to be some kind of 'fast lane' available to only a few has many people concerned. Personally, I don't like the idea that the Internet could become divided into 'haves' and 'have nots.' I will work to see that does not happen. In this Item we specifically ask whether and how to prevent the kind of paid prioritization that could result in 'fast lanes.'"). It is not clear if Wheeler actually thought there was a meaningful distinction between "paid prioritization" and "fast lanes" that would enable allowing some version of the former while banning the latter entirely. In any case, by the time the *Order* itself rolled around, any distinction had seemingly disappeared.

> Of course, for a given price level, subsidizing content comes at the expense of not subsidizing users, and subsidizing users could also lead to greater consumer adoption of broadband. It is an open question whether, in subsidizing content, the welfare gains from the invention of the next killer app or the addition of new content offset the price reductions consumers might otherwise enjoy or the benefit of expanding service to new users.[26]

Advocates supporting bans on paid prioritization fundamentally misunderstand this dynamic, instead seemingly presuming that content access pricing by ISPs can *only* harm networks. Public Knowledge, for instance, has claimed that:

> If Verizon—or any ISP—can go to a website and demand extra money just to reach Verizon subscribers, the fundamental fairness of competing on the internet would be disrupted. It would immediately make Verizon the gatekeeper to what would and would not succeed online. ISPs, not users, not the market, would decide which websites and services succeed.
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> * * *
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> Remember that a "two-sided market" is one in which, in addition to charging subscribers to access the internet, ISPs get to charge edge providers on the internet to access subscribers as well.[27]

And elsewhere:

> Comcast's market power affords it advantages vis-à-vis recipients of Internet video content as well as creators of Internet video content. For example, Comcast will be able to distribute NBC content through its Xfinity online offering without having to pay itself license fees.
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> This two-sided market advantage results from Comcast's position as a gatekeeper: it provides access to customers for content creators and it provides access to content for customers. Control over both directions of this transaction allows Comcast the opportunity for anticompetitive

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[26] Robin S. Lee & Tim Wu, *Subsidizing Creativity through Network Design: Zero-Pricing and Net Neutrality*, 23 J. ECON. PERSPECTIVES 61, 67 (2009).

[27] Michael Weinberg, *But For These Rules….*, PUBLIC KNOWLEDGE (Sept. 10, 2013), https://www.publicknowledge.org/news-blog/blogs/these-rules.

> behavior against either content creators or consumers, or both simultaneously.[28]

These assertions fundamentally misunderstand the economics of two-sided markets. Rather than facilitating anticompetitive conduct or enabling greater exploitation of users or content providers, two-sided markets facilitate otherwise-difficult, efficient economic exchange. As the Supreme Court in *Ohio v. American Express* recently acknowledged (in the antitrust context, of course), "a two-sided platform offers different products or services to two different groups who both depend on the platform to intermediate between them."[29] As the Court recognized, "two-sided platforms often exhibit what economists call 'indirect network effects.'"[30] "[T]he value of the services that a two-sided platform provides increases as the number of participants on both sides of the platform increases…, [and to] ensure sufficient participation, two-sided platforms must be sensitive to the prices that they charge each side."[31]

Importantly for the assessment of paid prioritization, "[s]ometimes indirect network effects require two-sided platforms to charge one side much more than the other."[32] Virtually all two-sided markets incorporate subsidies from one side of the market (typically the side with lower price elasticity resulting from its greater reliance on the access to the other afforded by the platform) to the other—not excessive profiteering through charging both sides of the platform.[33]

The "two-sidedness" of markets does not inherently confer increased ability to earn monopoly profits, and, in fact, the literature suggests that the availability of subsidization *reduces* monopoly power and increases welfare. In the broadband context, as one study notes, "[i]mposing rules that prevent voluntarily negotiated multisided

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[28] Public Knowledge Petition to Deny, *Applications of Comcast Corporation, General Electric Company and NBC Universal, Inc. for Consent to Assign Licenses or Transfer Control of Licensees*, MB Docket No. 10-56 (Jun. 10, 2010), *available at* https://www.publicknowledge.org/files/docs/PK-nbc-comcast-20100621.pdf.

[29] Ohio v. American Express, 138 S. Ct. 2274, 2280 (2018) (citing Evans & Schmalensee, *Markets With Two-Sided Platforms*, 1 ISSUES IN COMPETITION L. & POL'Y 667 (2008); Evans & Noel, *Defining Antitrust Markets When Firms Operate Two-Sided Platforms*, 2005 COLUM. BUS. L. REV. 667, 668; Filistrucchi, et al., *Market Definition in Two-Sided Markets: Theory and Practice*, 10 J. COMP. L. & ECON. 293, 296 (2014)).

[30] *Id.* at 2280-81 (citations omitted).

[31] *Id.* (citing Rochet & Tirole, *Platform Competition in Two-Sided Markets*, 1 J. EUR. ECON. ASSN. 990, 1013 (2003) (other citations omitted)).

[32] *Id.* at 2281.

[33] *See generally* Jean-Charles Rochet & Jean Tirole, *Platform Competition in Two-Sided Markets*, *supra* note 31.

prices will never achieve optimal market results, and… can only lead to a reduction in consumer welfare."[34]

Business models frequently co-exist where different parties pay for the same or similar services. Some periodicals are paid for by readers and offer little or no advertising; others charge a subscription and offer paid ads; and still others are offered for free, funded entirely by ads. All of these models work. None is necessarily "better" than the other. There is no reason the same isn't true for broadband and content.

What's more, the literature directly contradicts the assumption that neutrality improves consumer welfare or encourages infrastructure investment. In fact, the opposite appears far more likely to be true, and non-neutrality actually generally benefits *both* content providers as well as consumers:

> Our main result is that a switch from the net neutrality regime to the discriminatory regime would be beneficial in terms of investments, innovation and total welfare. First, when ISPs offer differentiated traffic lanes, investment in broadband capacity increases. This is because the discriminatory regime allows ISPs to extract additional revenues from CPs [Content Providers] through the priority fees. Second, innovation in services also increases: some highly congestion-sensitive CPs that were left out of the market under net neutrality enter when a priority lane is proposed. Overall, discrimination always increases total welfare.…[35]

Another paper finds the same result with respect to investment:

> All else being equal, the ability of ISPs to maintain differential prices among CSPs [Content Service Providers] enables greater investments and higher quality and coverage of service, including in geographical areas that have low returns on investments. Again this implies that the OIO will likely lead to decreased investment relative to the absence of such regulation and will help to maintain the digital divide by further slowing investment in lower return geographic areas.[36]

And yet another paper finds the same result, except in a small subset of cases:

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[34] Larry F. Darby & Joseph P. Fuhr, Jr., *Consumer Welfare, Capital Formation and Net Neutrality: Paying for Next Generation Broadband Networks*, 16 MEDIA L. & POL'Y 122, 123 (2007).

[35] Marc Bourreau, Frago Kourandi, & Tommaso Valletti, *Net Neutrality with Competing Internet Platforms*, 63 J. INDUS. ECON. 30 (2015) at 3 (in orig. working paper).

[36] Michelle Connolly, et al., *The Digital Divide and other Economic Considerations for Network Neutrality*, 50(4) REV. INDUS. ORG. 537, 547 (2017).

> Our results suggest that investment incentives of ISPs, which are important drivers for innovation and deployment of new technologies, play a key role in the net neutrality debate. In the non-neutral regime, because it is easier to extract surplus through appropriate CP pricing, our model predicts that ISPs' investment levels are higher; this coincides with the predictions made by the defendants of the non-neutral regime. On the other hand, because of platforms' monopoly power over access, CP participation can be reduced in the non-neutral regime; this coincides with the predictions made by the defendants of the neutral regime. We find that in the walled-garden model, the first effect is dominant and social welfare is always larger in the non-neutral model. While this still holds for many instances of the priority-lane model, the neutral regime is welfare superior relative to the non-neutral regime when CP heterogeneity is large.[37]

While one paper does purport to find a welfare increase from neutrality (although *not* with monopoly platforms, interestingly), this paper does not incorporate infrastructure investment incentives in its model, nor does it consider the effect of price discrimination.[38] And a later paper by one of the authors finds that, for monopoly ISPs, the ability to discriminate "unambiguously results in the ISP installing greater bandwidth. This effect is welfare enhancing."[39]

The relationship between edge providers and ISPs (and content owners and edge providers, etc.) has always been one of both cooperation and competition. Asserting that increased edge provider value will *necessarily* increase demand for broadband access and thus infrastructure investment as if no other variables matter assumes a non-existent, monotonic relationship between edge provider fortunes and those of ISPs. But reality is decidedly more complicated. As former FCC Chief Economist, Michelle Connolly, explains, for example:

> In an unregulated market, ISPs are able to extract surplus from CSPs [content service providers] when content providers value the connection to subscribed consumers in the ISP networks more than consumers value the connection to the content that is provided by CSPs. Therefore,

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[37] Paul Njoroge et al., *Investment in Two-Sided Markets and Net Neutrality Debate*, 12(4) REV. NETWORK ECON. 355, 361 (2013). Some previous papers have found the opposite result in some instances. All of these models exclude important aspects of the more updated literature, however. *See id.* at 362-65, for a literature review.

[38] *See* Nicholas Economides & Joacim Tåg, *Network Neutrality on the Internet: A Two-sided Market Analysis*, 24 INFO. ECON. & POL'Y 91 (2012).

[39] Nicholas Economides & Benjamin E. Hermalin, *The Economics of Network Neutrality*, 43 RAND J. ECON. 602, 605 (2012).

> in an unregulated market, ISPs have the incentive to transfer some surplus from CSPs to consumers in order both to retain existing customers and to attract new customers. Specifically, ISPs could charge CSPs higher prices in order to lower the last-mile fees for consumers in an attempt to maximize their end-user subscriptions.
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> However, with current net neutrality regulation as specified in the 2015 OIO, ISPs are not allowed to charge any fees to CSPs. Hence, ISPs are forced to generate revenue solely from last-mile fees, which is likely to result in an increase in the average price that is paid by end consumers. This rebalancing of the tariff is termed the waterbed effect.[40]

The reality is that if there are gains in the system, all parties will be vying to capture them, with varying degrees of success. The virtuous cycle theory underlying the FCC's approach to broadband regulation glosses over this complicating factor. Instead, it effectively asserts either 1) that there will be no change in relative bargaining power or ability to extract rents as a result of the altered regulatory environment, or else 2) that ISPs' ability to extract surplus from other groups (like end users) will actually *increase* relative to that of edge providers' ability to extract surplus from ISPs (i.e., ISPs will extract offsetting rents elsewhere in the system).[41] Neither is likely to be the case, at least not with any degree of consistency.

Moreover, the problem is not simply one of less investment overall. Because none of the relevant groups is homogenous, it is inevitably the case that even if there are net gains for, say, edge providers as a group, they will not be evenly distributed among all edge providers, nor will all users be similarly affected. While un-nuanced regulation will constrain ISPs' profit opportunities and change their investment calculus, it may not result simply in an overall *reduction* in investment. Instead, the effect may be a shift in investment to more remunerative areas — like wealthy urban centers or higher-income suburbs — at the expense of riskier investment in rural and low-income communities. Overall, in fact, the literature suggests that when content providers are

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[40] *Id.* at 544.

[41] This latter dynamic is actually plausible, given the waterbed effect. *See id.* For example, to preserve profitability, ISPs may also (or instead) choose to lower the quality of Internet service, restrict service to more profitable users, or impose data caps on subscriptions, among other things. But it isn't necessarily (or even likely) a complete offset, meaning investment incentives would still fall. And it certainly isn't necessarily a good thing for the parties (*e.g.*, consumers) whose surplus is being extracted.

significantly heterogeneous, regulations like those in the *2015 OIO* are likely to lower consumer welfare on net.[42]

Pretending that these tradeoffs and harmful consequences do not exist does not make it so. The complex realities of the Internet and the infrastructure that supports it do not lend themselves to overly broad, inflexible, and convoluted regulations like those so often promulgated by telecom agencies like the FCC.

The fact is, there is no good evidence that myopically regulating "in favor" of content providers over infrastructure owners is beneficial even to content providers themselves, let alone to consumers. In particular, the notion inherent in the virtuous cycle that preventing ISPs from charging content providers (whether at different rates or even at all) will benefit consumers and incentivize broadband deployment is tenuous, at best. As Michael Katz recently, and succinctly, put it, "if an ISP can earn revenues from edge providers serving the ISP's end users, then attracting end users becomes more valuable to the ISP. One way to attract end users is to lower the prices charged to them."[43]

And there is ample evidence from analogous industries, as well as a substantial theoretical and empirical economics literature, to support the idea that discrimination of the sort banned by the *2015 OIO* at the very least *can* be beneficial (thus undermining the imposition of a *per se* ban),[44] and, in fact, *is* very frequently beneficial (thus undermining the very logic of the virtuous cycle).[45] There is even abundant literature

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[42] *See, e.g.,* Benjamin E. Hermalin and Michael L. Katz, *The Economics of Product-Line Restrictions with an Application to the Network Neutrality Debate,* 19 INFO. ECON. & POL'Y 215, 215-48 (2007); *see generally* Paul Njoroge, *et al.*, *supra* note 37.

[43] Hal Singer *et al.*, *Bringing Economics Back Into The Net Neutrality Debate*, Washington Bytes, FORBES.COM (Jul. 12, 2017), https://www.forbes.com/sites/washingtonbytes/2017/07/12/bringing-economics-back-into-the-net-neutrality-debate/#370e80d369da (emphasis added).

[44] *See, e.g.,* OLIVER E. WILLIAMSON, MARKETS AND HIERARCHIES: ANALYSIS AND ANTITRUST IMPLICATIONS (1975); Oliver E. Williamson, *Assessing Vertical Market Restrictions: Antitrust Ramifications of the Transaction Cost Approach,* 127 U. PA. L. REV. 953 (1979); Francine Lafontaine & Margaret Slade, *Vertical Integration and Firm Boundaries: The Evidence*, 45 J. ECON. LIT. 629 (2007); Benjamin Klein & Joshua D. Wright, *The Economics of Slotting Contracts*, 50 J.L. & ECON. 421 (2007); Benjamin Klein & Andres V. Lerner, *The Expanded Economics of Free-Riding: How Exclusive Dealing Prevents Free-Riding and Creates Undivided Loyalty*, 74 ANTITRUST L.J. 473 (2007); Benjamin Klein & Kevin M. Murphy, *Vertical Restraints as Contract Enforcement Mechanisms*, 31 J.L. & ECON. 265 (1988); Howard Marvel, *Exclusive Dealing*, 25 J.L. & ECON. 1 (1982).

[45] *See, e.g.,* Francine Lafontaine & Margaret Slade, *Exclusive Contracts and Vertical Restraints: Empirical Evidence and Public Policy*, HANDBOOK OF ANTITRUST ECONOMICS, 391, 409 (Paolo Buccirossi ed., 2008); James C. Cooper, Luke M. Froeb, Daniel O'Brien & Michael G. Vita, *Vertical Antitrust Policy as a Problem of Inference*, 23 INT'L J. INDUS. ORG. 639 (2005); Daniel O'Brien, *The Antitrust Treatment of Vertical*

from *this* industry making these points.[46] "What the theoretical literature and empirical evidence demonstrates [] is that vertical contracts, including those captured by the [*2015 OIO*], are not always anticompetitive and in most cases are procompetitive."[47]

B. The basic economics of network congestion: Pricing is a form of network management

The FCC's Open Internet Advisory Committee ("OIAC") studied the question of differential pricing, and found that different pricing models—even ones incorporating paid prioritization—embody a tradeoff that could have decidedly pro-consumer benefits—even while imposing, or risking imposition of, some costs.[48] The OIAC observed, for instance, that while paid prioritization may sometimes have the effect of creating barriers to entry for startups (a debatable point), "[e]nabling content providers to pay for data delivery offers users an incentive to access the sponsored content. In the short run, this is beneficial for consumers of that content, particularly for budget conscious users on smaller data plans."[49]

Among other things, and as the *OIAC Report* illustrates in several places, constraining paid prioritization limits the permissible scope of "reasonable network management" in ways that almost necessarily create the need for *more*, not less, network management and increases the risk of congestion.

Restraint: Beyond the Possibility Theorems, in REPORT: THE PROS AND CONS OF VERTICAL RESTRAINTS 40 (2008).

[46] *See, e.g.*, Thomas W. Hazlett & Joshua D. Wright, *The Law and Economics of Network Neutrality*, 45 IND. L. REV. 767 (2012); Robert W. Crandall, *et al., Vertical Separation of Telecommunications Networks: Evidence from Five Countries,* 62 FED. COMM'NS. LAW J. 493 (2010); Bourreau, Kourandi, & Valletti, *Net Neutrality with Competing Internet Platforms*, *supra* note 35 ; Gerald R. Faulhaber, *Economics of Net Neutrality: A Review*, 3 COMM. & CONVERGENCE REV. 53 (2011).

[47] Joshua D. Wright, *Broadband Policy & Consumer Welfare: The Case for an Antitrust Approach to Net Neutrality Issues*, Remarks delivered at the Information Economy Project's Conference on US Broadband Markets (2013), *available at* http://bit.ly/2gNkYnj.

[48] Jonathan Zittrain & David Clark, *Open Internet Advisory Committee 2013 Annual Report*, at 58, *available at* http://transition.fcc.gov/cgb/oiac/oiac-2013-annual-report.pdf [hereinafter, "*OIAC Report*"]. The *OIAC Report* continues: "This is clearly an area of ongoing debate.... [T]here is a great deal of experimentation in mobile business models, which is enabling innovation and value to customers and others in the ecosystem. Some business models raise concerns about carriers restricting the way consumers use their mobile devices and about long-term impacts on application and content innovation." *Id.*

[49] *Id.*

One key problem is that, without the option (or requirement) to pay for data priority, users have "little incentive or ability (beyond the binary choice between consuming or not consuming) to prioritize their use of data based on their preferences."[50]

> In other words, the marginal cost to consumers of consuming high-value, low-bit data (like VoIP [transmitting voice over the internet], for example) is the same as the cost of consuming low-value, high-bit data (like backup services, for example), assuming neither use exceeds the user's allotted throughput. And in both cases, with all-you-can-eat pricing, consumers face a marginal cost of $0 (at least until they reach a cap). The result is that consumers will tend to over-consume lower-value data and under-consume higher-value data, and, correspondingly, content developers will over-invest in the former and under-invest in the latter. The ultimate result—the predictable consequence of mandated neutrality rules—is a net reduction in the overall value of content both available and consumed, and network under-investment.[51]

Completely missing the point, some critics have argued that paid prioritization creates "artificial scarcity," which allows ISPs to fleece their users, resulting in less broadband usage—much as bandwidth caps are claimed to do:

> Bandwidth caps made it impossible to do all the important stuff [more capacious networks] supposedly let[] you do. T-Mobile provides evidence that users with capped or throttled broadband use 20x-30x less broadband than users with uncapped broadband. T-Mobile has also said that 37% of subscribers don't use streaming media because they fear going over their bandwidth caps.[52]

To the extent that "artificial scarcity" is another way of saying "optimization through price-based rationing," the assertion is correct—but the criticism is misplaced. *Maximal* use (or over-use) of broadband is not the correct policy aim. Rather, the aim should be the *optimal* use of broadband, which maximizes the value of the Internet for consumers and creates the right incentives for network owners and edge providers to innovate and invest.

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[50] United States Telecomms. Ass'n v. FCC, 825 F.3d 674, 762 (2016) (Williams, J., dissenting) (quoting Comments of International Center for Law & Economics and TechFreedom at 17 (July 17, 2014)).

[51] *Id.* at 762-63.

[52] Harold Feld, *T-Mobile Data Roaming Petition Proves Wireless Data Caps Are About Market Power*, PUBLIC KNOWLEDGE (Jul. 11, 2014), https://www.publicknowledge.org/news-blog/blogs/t-mobile-data-roaming-petition-proves-wireless-data-caps-are-about-market-power-and-that-they-seri.

To the extent that unlimited use/flat rate billing *are* optimal, they are optimal only with uncongested networks with full penetration.[53] Among other things, this means that, particularly where there is congestion, the socially optimal solution is for broadband providers to encourage users to *prioritize*, not necessarily to maximize, their data usage.[54] Deterring or prohibiting innovative broadband business models that seek to offer content via programs like zero rating and sponsored data[55] undermines not only optimal policymaking, but also net neutrality proponents' own stated aim to enhance "the value of [] broadband to consumers."[56]

It also means that the socially optimal solution is for broadband providers to encourage *content providers* to prioritize their offerings. Not all content is created equal, and policies aimed at indiscriminately maximizing content "may actually lead to inefficient entry and lower quality and diversity of content."[57] At the margin, if ISPs are mandated to provide free terminating access for content providers, an inefficient mix of content offerings will be provided because unmetered access "is particularly valuable to applications that make wasteful use of bandwidth."[58] Regardless, absent an assessment of the actual or likely welfare effects, it is impossible to say *ex ante* that consumer welfare in general, and regarding content in particular, is best served by policies aimed at encouraging innovation and investment in content over networks.

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[53] *See, e.g.*, Daniel A. Lyons, *Internet Policy's Next Frontier: Usage-Based Broadband Pricing*, 66 FED. COMM'NS L. J. 1 (2013). The presence (or absence) of congestion is key to assessing both the purported problem itself, as well as the costs and benefits of any proposed solution. Priority really matters only when there is congestion. *See, e.g.,* Jan Krämer & Lukas Wiewiorra, *Network Neutrality and Congestion Sensitive Content Providers: Implications for Service Innovation, Broadband Investment and Regulation*, MPRA Paper No. 27003 (Dec. 2010), *available at* http://mpra.ub.uni-muenchen.de/27003/1/MPRA_paper_27003.pdf. *See also* Drew Fitzgerald, *How The Web's Fast Lanes Would Work Without Net Neutrality*, WALL ST. J. (May 16, 2014), http://online.wsj.com/news/articles/SB10001424052702304908304579565880257774274.

[54] But this also means it may be correct to assume that priority, in the first instance, means not just better service for some, but worse service for others (if some content gets better service when there is congestion, the capacity to do so can come only from limiting the transmission quality of other bits in some regard). The assertion that this inherently means that prioritization in the face of congestion is "zero-sum," however (*see 2015 OIO* at ¶ 126 & note 287), is not correct. If the benefits to users receiving prioritized bits is greater than the cost to users receiving de-prioritized bits, the welfare effect of prioritization is *not* zero-sum. There may be some situations where this does not hold, but are also innumerable situations where it would. *See* Thomas W. Struble, *On the Relationship Between QoS & QoE: Why Differential Traffic Management on the Internet Is Not a Zero-Sum Practice*, Research Paper for TPRC 44 (Aug. 31, 2016), *available at* http://docs.techfreedom.org/Paid_Prioritization_TPRC_2016.pdf.

[55] Corynne McSherry, *et al.*, *Zero Rating: What Is It And Why You Should Care*, ELEC. FRONTIER FOUND (Feb. 18, 2017), https://www.eff.org/deeplinks/2016/02/zero-rating-what-it-is-why-you-should-care.

[56] Feld, *T-Mobile Data Roaming Petition Proves Wireless Data Caps Are About Market Power*, *supra* note 52.

[57] Connolly, *et al.*, *supra* note 36, at 552.

[58] *Id.*

Because of the complexities discussed above, it is by no means clear that maximizing content at the expense of network management is optimal, *even for content providers*.

Arguably, to the extent that new content entrants might threaten ISPs' affiliated content or services, there exists somewhat more solid economic rationale for intervening. But such a risk justifies, *at most*, only a limited rule creating a rebuttable presumption of commercial unreasonableness in such circumstances. Moreover, the logic behind such a rule tracks the well-established antitrust law and economics of vertical foreclosure, which neither justifies a presumption (even a rebuttable one) nor the imposition of a targeted regulation beyond the antitrust laws themselves.[59]

Prioritization schemes offer a means to both a) limit data usage and relieve congestion, whether there are caps or not; and b) still permit users to pay to avoid whatever limits caps would place on their usage in a much more useful way, allowing them to pick and choose which types of data or even content providers are most important to them. Such arrangements facilitate the optimal use of scarce data, enable network management practices that alleviate congestion overall, and allow ISPs to reduce the risk of infrastructure investment by speeding up the rate at which they realize returns. Collectively these create an enormous impetus for broadband deployment.

Significantly, restraints on ISP pricing freedom may deter the use and thus the construction of faster networks and result in lower consumer welfare. As one of the DOJ's former chief economists, Aviv Nevo, and coauthors explained:

> [U]sage-based pricing is an effective means to remove low-value traffic from the Internet, while improving overall welfare. Consumers adopt higher speeds, on average, which lowers waiting costs. Yet overall usage falls slightly. The effect on subscriber welfare depends on the alternative considered. If we hold the set of plans, and their prices, constant, then usage-based pricing is a transfer of surplus from consumers to ISPs. However, if we let the ISP set price to maximize revenues, then consumers are better off.[60]

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[59] *See, e.g.,* Hazlett & Wright, *The Law and Economics of Network Neutrality*, *supra* note 46.

[60] Aviv Nevo, *et al.*, *Usage-Based Pricing and Demand for Residential Broadband*, 84 ECONOMETRICA 411 (2016) (Working Paper (Sep. 2013) at 38, a*vailable at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2330426).

To be sure, under some conditions such arrangements could create some incentive for networks to extract surplus and create "artificial scarcity."[61] But if this is the justification for regulation, it should be more clearly established through economic analysis and it should evaluate the practical relevance of those specific conditions. Further, such regulation should narrowly focus on this risk and avoid constraining efficient investment, usage and innovation incentives when the risk is not present.

The bottom line is that regulatory restrictions on pricing serve generally to lower welfare and broadband investment incentives.

C. The importance of prioritization for encouraging innovation and new entry

Ex ante bans on paid prioritization and differential pricing prioritize the *status quo*, deterring not only new network access models but also novel business and pricing models at all levels of the Internet.[62]

While limits to Internet "openness" can arise at any number of points along the "value chain" from content creation to consumption, so too can innovation and investment occur at any number of points—and do at least as much to spur broadband infrastructure investment. Indeed, as devices become increasingly more diverse, creating differential service levels that are tailored to particular use cases makes ever greater sense.[63]

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[61] *See* Nicholas Economides, *Why Imposing New Tolls on Third-Party Content and Applications Threatens Innovation and will not Improve Broadband Providers' Investment*, (NYU Center for Law, Econ. & Org. Working Paper No. 10-32, Jul. 2010), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1627347.

[62] *See, e.g.*, Larry Downes, *Unscrambling the FCC's Net Neutrality Order: Preserving the Open Internet–But Which One?*, 20 COMM L CONSPECTUS 83, 115 (2011) ("As the exceptions piled up, the majority should have realized the futility of making rules for an ecosystem very much in transition. Instead, they remain fixated on maintaining an Open Internet even though they now had ample evidence that neutrality is a virtue more honored in the breach."). *See also* Christopher S. Yoo, *Beyond Network Neutrality*, 19 HARV. J.L. & TECH. 1 (2005).

[63] See, e.g., Daniel A. Lyons, *Innovations in Mobile Broadband Pricing*, 92 DENVER U. L. REV. 453, 455 (2015). *See also* CHRISTOPHER S. YOO, THE DYNAMIC INTERNET 122–23 (2012) ("[I]n international markets, consumer demand and carrier innovation are challenging that wisdom by introducing competitive and popular alternatives to the traditional net-neutral model.... [C]onsumers are increasingly accessing the Internet through multiple devices, which suggests less need for every device to provide the same comprehensive service. Internationally, companies are using that flexibility to develop alternative service bundles that appeal to a broad base of consumers").

The particularly ironic aspect of the popular narrow focus on network access, and the commensurate threat to all manner of innovative practices under the rubric of net neutrality, is that these innovations have frequently been introduced by both new entrants and incumbent firms facing rigorous competition—settings in which anti-competitive effects are of little or no concern and in which consumers are manifestly benefitted from such efforts.

Daniel Lyons points to then-fledgling MetroPCS's effort to gain market share in 2011 by offering a limited data plan with subsidized, unlimited access to content from YouTube and a few other content providers.[64] The plan was excoriated by net neutrality proponents. But,

> as Professor Tom Hazlett notes, [MetroPCS's] customers were mostly price-sensitive cord-cutters who had little use for the bells and whistles of larger carrier plans, especially at higher price points. MetroPCS's plan was poised to bring wireless data to this market segment. But instead it found itself facing the threat of agency action because its plan did not match the Federal Communications Commission's preconceived notion of what the wireless broadband experience should be.[65]

MetroPCS ultimately abandoned this innovative business model, whose very non-neutrality could have promoted broadband adoption, especially among those on the other side of the "digital divide."

It is not hard to imagine myriad business models that would manifestly lower prices and increase broadband adoption but that could be prohibited under bans on paid prioritization.

D. The hydraulic effect of discouraging or banning paid prioritization.

Scarcity on the Internet (as everywhere else) is a fact of life—whether it arises from network architecture, search costs, switching costs, or the fundamental limits of physics, time and attention. The need for some sort of rationing (which implies prioritization) is thus also a fact of life. If rationing isn't performed by the price mechanism, it will be performed by something else. For startups, innovators, and new entrants,

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[64] *Id.* at 455-57 (citing Ryan Kim, *MetroPCS LTE Plans to Charge More for VoIP & Streaming*, GIGAOM (Jan. 4, 2011), http://gigaom.com/2011/01/04/metropcs-lte-plans-charge-more-for-skype-and-streaming/).

[65] *Id.* at 556-57 (citing Thomas W. Hazlett, *FCC, Net Neutrality Rules, and Efficiency*, FINANCIAL TIMES (Mar. 29, 2011), http://www.ft.com/intl/cms/s/0/f75fd638-5990-11e0-baa8-00144feab49a.html#axzz2gFHqNfa).

while they may balk at paying for priority, the relevant question, as always, is "compared to what?" There is good reason to think that a neutral Internet will substantially favor incumbents and larger competitors, imposing greater costs than would paying for prioritization. Far from detracting from the Internet's value, including its value to small, innovative edge providers, prioritization almost certainly increases it.

In other words, and of particular importance to the regulation of rapidly-evolving markets like broadband, there is no free lunch. Regulation cannot change the laws of physics or economics, and it cannot change the fact that there is no such thing as a truly neutral Internet: someone and some mechanism will always "pick winners and losers" in the face of scarcity. Regulation that prohibits ISPs and market prices from doing so also have the unavoidable effect of ordaining someone and something else to do so. It is thus incumbent upon well-meaning regulators to consider and rigorously account for the problems and/or risks that regulation itself may introduce. The "hydraulic effect" of regulation—the reality that underlying economic incentives will shift conduct to unregulated areas, often in ways that undermine the purpose of regulation—is inevitable.[66] This reality makes it considerably more difficult for regulators to design regulations that do more good than harm.

Consider this 2006 statement from the Future of Music Coalition:

> For musicians, net neutrality means they should have the unfettered ability to make their work available to potential fans without undue interference from corporate gatekeepers. Similarly, music fans should have the ability to access this music via a range of legitimate business models. Net neutrality also ensures the continued innovation that has spurred the growth of the indie sector, the transition to a legitimate digital economy and, more widely, consumer adaptation [sic: adoption?] of broadband services.[67]

In this case, the only "corporate gatekeepers" that are stymied by a ban on paid prioritization are ISPs. But that means that other "gatekeepers"—like music streaming services, various advertising platforms, music search services, radio station programmers, and music retailers, for example—become even more powerful. Instead of

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[66] *See* Geoffrey A. Manne, *The Hydraulic Theory of Disclosure Regulation and Other Costs of Disclosure*, 58 ALA. L. REV. 473 (2007).

[67] Jenny Toomey & Michael Bracy, *Indie-rock Revolution, Fueled by Net Neutrality*, FUTURE OF MUSIC COALITION (Jun. 13, 2006), *available at* https://futureofmusic.org/article/article/op-ed-indie-rock-revolution-fueled-net-neutrality.

guaranteeing the "unfettered ability [for musicians] to make their work available," the rules may have the opposite effect.

Absent subsidized prioritization, online music consumers must, at the margin, limit their consumption of content or limit its quality (by consuming lower-bit versions or purchasing only slower broadband access).

And, of course, non-ISP platforms can themselves engage in other forms of prioritization that essentially replicate the "fast and slow lanes" of ISP prioritization: for example, by offering some music only at lower bit rates, offering their own fast/slow lanes to certain labels or artists, or, like Netflix, offering their own original or exclusive content—protected by contract and IP laws, and limited only by the market and antitrust rules.

Powerful companies play off one another to gain temporary advantage, which they can and often do lose thanks to more nimble competitors as well as commercial partners. The dynamics of these relationships are much more complicated than a simplistic "ISP as gatekeeper" view of the world contemplates.

> There is no reason to expect that this conflict will lessen, and instead there are arguments that suggest it will intensify. Should something like net neutrality prevail, the conflict would likely move to a different level. That level might become search neutrality.... Or, to take another currently popular concept, if "cloud computing" does become as significant as its enthusiasts claims, it could lead to dominance of a single service provider. The effective monopoly of that dominant player could then become perceived as far more insidious than any of the "walled gardens" or "intelligent networks" that telcos would like to build.
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> * * *
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> [A] net neutral communications infrastructure could be viable economically. But such an infrastructure might enable even more extreme forms of price discrimination by players such as Google, and might then lead to new controversies and new forms of regulation.[68]

The irony is that by thwarting discriminatory business models at the ISP level, an approach to broadband prioritization that is insufficiently attuned to the complex interrelatedness of ISPs with other significant Internet firms may effectively mandate different, but not necessarily better (or worse), forms of discrimination, including

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[68] Andrew Odlyzko, *Network Neutrality, Search Neutrality, and the Never-ending Conflict between Efficiency and Fairness in Markets*, 8 REV. NET. ECON. 40, 41, 43 (2009).

through paid advertising and application-based prioritization. Of course, there might be a consumer-welfare-relevant difference between rationing by these entities and broadband providers. The point here is that simple banning something like paid prioritization has important second-order effects that are not easily captured in first-order regulatory efforts.

1. Paid prioritization is payola for the Internet—and that's a good thing

Consider an analogous and illustrative example: payola and the allocation of scarce radio airtime for popular music. Once upon a time, AM radio was the "gatekeeper" standing between popular music and its consumers. The best advertising for new recordings was airplay by popular radio disc jockeys. Because the amount of time available to air new music (let alone to do so during the most popular hours) was far outstripped by the amount of music available, some record companies and music publishers paid influential disc jockeys, who had discretion over their playlists, to "prioritize" their own recordings. Established labels and publishers (which used direct connections to radio station operators to influence programming) sought to fend off new competitors (and the new-fangled "rock and roll" music they were peddling by agitating for a ban on payola. They were aided in the effort by populist political sentiment that considered payolas as part of the corrupting force of "powerful interests that thwart opportunity and competition."[69] In 1960, following a series of politically charged congressional investigations into the practice, they succeeded, and undisclosed payola was made illegal in the U.S.[70] Today it is still commonly reviled as a cynical exercise of corporate power over free culture, and often offered up as an analogy to paid prioritization on the Internet.[71] Like paid prioritization, payola was (and still is) viewed as a form of corporate corruption, practiced by "gatekeepers" to extract rents from content providers dependent upon them, to the detriment of smaller companies that are less able to afford the entry fee.

But that characterization (of both payola and paid prioritization) is *exactly* backward.

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[69] John E. Moss (D - CA, 3rd Cong. Dist. 1953-1978), undated interview, *quoted in* Steven F. Lawson, *Race, Rock and Roll, and the Rigged Society: The Payola Scandal and the Political Culture of the 1950s*, in THE ACHIEVEMENT OF AMERICAN LIBERALISM: THE NEW DEAL AND ITS LEGACIES (William H. Chafe, ed. 2003), at 205, 221.

[70] *See* 47 U.S.C. §§ 317 & 508.

[71] Timothy Karr, *The Payola Internet*, VOICES FOR INTERNET FREEDOM (FREE PRESS) (Dec. 10, 2013), https://www.internetvoices.org/blog/2013/12/10/payola-internet.

In a path-breaking 1979 paper, *Payola in Radio and Television Broadcasting*, Nobel Laureate economist Ronald Coase detailed the history of payola and laid out the simple economics that explain why banning paid prioritization for radio airplay (*i.e.*, payola) actually benefitted large record labels, not small artists.[72] Payola was not about gatekeeper disc jockeys extracting rents from record companies; it was about innovators, start-ups, and small companies finding a way to pay for a valuable resource (airtime) within a system dominated by incumbents with no interest in giving up the "neutrality" that prevented these rivals from getting a leg up.

> To sell music on a large scale it is necessary that people hear it. Payola is one way of inducing people to play it so that it can be heard. From a business point of view, ***the ban on payola is therefore simply a restraint on one kind of promotional or advertising expense***.... [O]pposition to payola came from those segments of the popular music industry which were hurt by the rise of the new music and the associated development of new record companies, [and] ***the aim of the business interests which sought to curb payola seems to have been... to hobble their competitors***.
>
> [Anti-payola advocates claimed that banning payola] would protect the small publisher, and Congressman Oren Harris, in his introductory remarks to the payola enquiry, said that ***"we are told" that payola tends "to drive out of business small firms who lack the means to survive this unfair competition." Such statements convey a completely false impression***. Although the music publishers' attempts to regulate payola do not seem to have been designed to harm the small publisher, ***it was, in fact, small firms which protested to the FTC in the 1930s about the harm they would suffer if payola was banned***. In the period after World War II, all record companies seem to have given payola to disc jockeys, but, as we have seen, the smaller companies thrived on it. ***These companies lacked the name-stars and the strong marketing organization of the major companies, and payola enabled them to launch their new records.... There is no reason to suppose that a ban on payola would, in general, have helped the small music publishers or has helped the small record companies***.[73]

As theory predicts, not only did the pricing ban actually *harm* small and startup labels, it also didn't end the need for some sort of prioritization mechanism. That the larger,

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[72] *See* Ronald H. Coase, *Payola in Radio and Television Broadcasting*, 22 J.L. & ECON. 269 (1979), *available at* http://old.ccer.edu.cn/download/7874-3.pdf.

[73] *Id.* at 316-17 (emphasis added).

established firms advocating for the ban on payola benefitted more under this regime should come as no surprise.

The fact of airtime scarcity and the enduring need for marketing and promotion—*especially* among new entrants—means that the dollars formerly spent on payola will be spent somewhere else, most likely advertising.[74] On the radio, ironically enough, this means more ads taking up airtime, creating more scarcity, thus making advertising more valuable, leading inexorably to less music of any kind being played.

> Since the 1960 amendments to the Communications Act impose a restraint on a particular kind of advertising expenditure, it is to be expected that it would lead firms to increase other forms of promotional activity.... And this appears to have happened.... [***R]ecord companies are "vastly increasing promotion expenses, while the most powerful form of advertising—radio play—remains free." At the same time the smaller companies have lost ground***.... Six major companies... now control more than 85% of the U.S. market.[] This growth in concentration was probably largely a result of the larger companies adjusting to the new taste in music but the 1960 amendments, which made payola illegal, undoubtedly helped in the process.
>
> It is consistent with the view that a ban on payola would lead to an increase in other promotional activities that, in the past, ***support for curbing payola has come from those likely to benefit from this diversion of advertising expenditures***.... [Ultimately, b]y leading to the employment of more resources in promotional activity, the ban on payola has a tendency to reduce the national product elsewhere.[75]

In summing up the (entirely predictable) effects of the ban on payola, Coase offers a sage assessment that is equally relevant to limitations on paid prioritization:

> **What has been described as happening after the ban on payola is the normal result of a situation in which no price is exacted for the receipt of a valuable service. Indeed, in the early days, what we now call payola was termed the "payment system," or, as economists would say, the pricing system**. When a pricing system is not used and something of value is provided for nothing, people are willing to incur costs up to its worth in order to secure the benefits of that service.... **In addition, the**

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[74] *See* GABRIEL ROSSMAN, CLIMBING THE CHARTS: WHAT RADIO AIRPLAY TELLS US ABOUT THE DIFFUSION OF INNOVATION (2012).

[75] Coase, *Payola in Radio and Television Broadcasting*, *supra* note 72 at 317 (citation and some internal quotation marks omitted) (emphasis added).

> **prohibition of payola may result in worse record programs, will tend to lessen competition, and will involve additional expenditures for regulation.…**
>
> **It is not enough to outlaw payments simply because they can be described as "improper." Some attempt should be made to discover why such payments are made and what would in fact happen in the world as it exists if they were made illegal.**[76]

III. Calibrating policy to encourage innovation

Not only must a proper approach to broadband competition account for the effects of investment and innovation by ISPs,[77] but it must also adequately account for innovation at the edge. While "fast lanes" and "slow lanes" — *i.e.*, paid prioritization — *could* deter edge innovation by making new entry more difficult, for example, they are actually more likely to make it *easier*. "Because exclusivity is often more beneficial to new business models than old ones, blanket bans are likely to have the perverse effect of discriminating against innovation and, by extension, against entry."[78]

As always, the crucial question is, "compared to what?" Paying for priority may seem like a costly barrier to entry by start-ups and new innovators, but it's nothing compared to the costs of trying to gain a foothold in an established market *without* it.[79] The baseline state of affairs is that entrants are naturally at a disadvantage relative to incumbents. Incumbents have greater economies of scale, benefits of learning by doing, larger customer bases, more brand loyalty, lower search costs, lower marketing costs, established business relationships, experienced sales, marketing, and business-development teams, and the like. Prioritization can help to ameliorate the disadvantage.

> [P]remium service stimulates innovation on the edges of the network because lower-value content sites are better able to compete with higher-value sites with the availability of the premium service. The greater diversity of content and the greater value created by sites that purchase the

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[76] *Id.* at 318-19 (emphasis added).

[77] *See infra* notes 35 to 47 and accompanying text.

[78] Jeffrey A. Eisenach, *Broadband Competition in the Internet Ecosystem*, AEI ECON. STUDIES 30 (October 2012), *available at* http://www.aei.org/wp-content/uploads/2012/10/-broadband-competition-in-the-internet-ecosystem_164734199280.pdf.

[79] And, of course, this applies to ISPs, as well as content providers. It is thus not surprising that T-Mobile has been most aggressive among mobile ISPs in implementing zero-rating programs.

> premium service benefit advertisers because consumers visit content sites more frequently. Consumers also benefit from lower network access prices.[80]

The ahistorical claim that prioritization necessarily benefits "the big boys" is typically (as in the *2015 OIO*) offered without evidence and without consideration or evaluation of the possibility that the opposite is, in fact, more often true. The fantasy victim is the "small content provider": the proverbial garage start-up, the independent filmmaker, the intrepid blogger making political waves.[81]

The quintessential illustration of the purported problem is the metaphorical David vs. Goliath tale of pre-Google YouTube's entry into online video. Here's how Al Franken tells the story:

> To illustrate why net neutrality is so critical to innovation on the web, I like to tell the story of a small online startup that launched in 2005 above a pizzeria in San Francisco. It had a product that now seems simple: it allowed people to upload videos so others could stream them. It was called YouTube — you may have heard of it.
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> At the time, Google had a similar product — Google Video — but it wasn't as easy to use, so consumers took their business to YouTube. The site took off and, less than two years after it launched, YouTube was purchased by Google for $1.6 billion. Not a bad payday.
>
> But it wouldn't have been possible without net neutrality. If Google had been able to pay Comcast and other large Internet service providers to prioritize its data — and make YouTube's videos load more slowly — YouTube wouldn't have stood a chance. Google's inferior product would have won.[82]

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[80] Mark A. Jamison & Janice Hauge, *Dumbing Down the Net: A Further Look at the Net Neutrality Debate*, in INTERNET POLICY AND ECONOMICS: CHALLENGES AND PERSPECTIVES 57-71 (William H. Lehr & Lorenzo Maria Pupillo eds., 2009).

[81] *See, e.g.*, Joseph Bernstein, *Reddit Co-Founder On Net Neutrality: "It's a Terrible Brand"*, BUZZFEED (Jul, 7, 2014), http://www.buzzfeed.com/josephbernstein/reddit-co-founder-on-net-neutrality-its-a-terrible-brand.

[82] Al Franken, *Huffington Post Op-Ed: Net Neutrality is Under Attack…Again*, WEBSITE OF SENATOR AL FRANKEN (Nov. 8, 2011), http://www.franken.senate.gov/?p=news&id=1831. Barbara van Schewick tells the same story: Barbara van Schewick, *Opening Statement at the Federal Communications Commission's Workshop on Approaches to Preserving the Open Internet* (April 28, 2010), WC Docket No. 07-52 & GN Docket No. 09-191, *available at* http://media.law.stanford.edu/publications/archive/pdf/schewick-statement-20100428.pdf.

Leaving aside that this series of events that "wouldn't have been possible without net neutrality" occurred *before* the FCC adopted enforceable net neutrality rules, the conclusion simply does not follow. Most important, and as is so often the case, things are just not so simple. What the story misses is the importance of search costs, advertising, reputation, and the like in naturally putting a thumb on the scale in favor of incumbents. Many a new entrant has foundered on the shoals of obscurity. In a functioning competitive market, there are mechanisms to help entrants overcome these structural impediments. They usually cost money. And they implicitly amount to favoritism.

Properly understood, the existence of a non-neutral regime is not inherently tilted in favor the powerful incumbent: Who stands to benefit more from — and be willing to pay for — artificial relative quality? The company that is already known or the one that no one's ever heard of?

To make the trade-off clear, take Franken's story and tweak it slightly. What if Google's incumbent video offering weren't *so* "inferior," but YouTube was nevertheless still better? What would have happened in a neutral world? Likely no one would have bothered with YouTube (and perhaps YouTube would never have been created in the first place). We would have lost out on an incremental improvement because the impediments to a marginally better challenger besting an incumbent, given the incumbent's structural advantages, may have been more costly to overcome than the benefits of doing so.

But what about in a non-neutral world? Let's re-write the end of Franken's story:

> If YouTube had been able to pay Comcast and other large Internet service providers to prioritize its data — and even make Google's videos load more slowly — YouTube would have stood a fighting chance. Google's inferior product would have had a harder time winning because YouTube's product would have been "artificially" enhanced enough to make consumers' rejection of the known quantity, and their taking a risk on the new entrant, worthwhile.

Net neutrality may preclude Google from getting a network-based edge over YouTube, but it also precludes *YouTube* from getting one over *Google*. Whether the benefit of the former outweighs the cost of the latter in any particular circumstance (or in the abstract) is an empirical question. But it must be accepted that there are both costs and benefits, and the assumption that the benefits are always (or even on average) greater than the costs simply has not been established.

The common refrain that prioritization favors large incumbents over innovative edge providers is often further extended to assert that, in an environment where prioritization is ever permitted, small startups can't or won't invest and innovate.[83]

The argument is that, without the assurance of a fast (or is it "neutral"?) Internet connection, a small start-up — say, a new online game company — nor its potential investors will bear the allegedly heightened risk. That risk, of course, is a function of the likelihood of better-funded, established competitors buying into a "fast lane" and relegating the startup to a "slow lane," thus precluding it from offering competitive quality:

> [W]e are worried that your proposed rules will not provide the necessary certainty that we need to make investment decisions and that these rules will stifle innovation in the Internet sector.
>
> If established companies are able to pay for better access speeds or lower latency, the Internet will no longer be a level playing field. Start-ups with applications that are advantaged by speed (such as games, video, or payment systems) will be unlikely to overcome that deficit no matter how innovative their service. Entrepreneurs will need to raise money to buy fast lane services before they have proven that consumers want their product. Investors will extract more equity from entrepreneurs to compensate for the risk.[84]

But this argument doesn't comport with reality.

The fundamental problem with the claim is that no one *at all* will pay for priority unless there is congestion. Absent an ISP affirmatively throttling or otherwise interfering with traffic in the "slow lane," without congestion a fast lane is no faster than the slow lane. But if there *is* congestion, the small online game provider is going to suffer anyway. In fact, it may suffer *more* if its competitors are forced to use the same lane than it would if they moved over into the proverbial HOV lane, thus reducing the congestion for everyone else.

Paid prioritization at least requires content providers to respond to incentives — to take congestion into account, instead of using up a common resource without regard

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[83] *See, e.g.,* Engine Advocacy, Reply Comment, *Protecting and Promoting the Open Internet*, WC Docket No. 14-28, at 5 (filed Sep. 15, 2014), *available at* http://bit.ly/2tuwBWs ("[P]aid prioritization schemes, once implemented, will result in Internet fast lanes for well-heeled incumbents, relegating startups and the economic growth they create to the slow lane.").

[84] "Open Internet Investors Letter" (May 8, 2014), *available at* https://docs.google.com/document/d/1v34_bFesbfyF_MbQgtZtUQNfSByAgUKTICEB9pjH3jk/pub.

to cost. It also allows the startup game company to buy better service in order to avoid the congestion, which isn't an option at all with neutrality. And the hard truth is that, if the game developer can't afford to pay for clear access when it is needed, then it may have a bad business model. As a general rule, a business model dependent on an expectation that a company will always have unfettered, free access to a scarce, contestable, and unmetered common resource is doomed to failure.

It is similarly claimed that *current* successful businesses might not have been funded in an environment that didn't guarantee neutrality by law. Leave aside that most of them *were* created in just such an environment: Even if true, that doesn't mean that *different* businesses wouldn't have been created. All that can legitimately be said is that the investment dollars might have flowed elsewhere: to entrepreneurs with business models more likely to succeed in a different economic and regulatory environment. But this says nothing about the amount of investment, the types of businesses, or the quality of businesses that would have been created under a different set of rules. It says only that the same set of *particular*, past investments might not have been made.

Businesses thrive in unequal, cost-ladened environments all the time. To take one example, it costs more than $5 million per 30 seconds to advertise during the Super Bowl; Budweiser and Frito-Lay, two of the largest ad buyers during the 2017 Super Bowl, for example, had to pay millions to do so.[85] That Sierra Nevada and Pringles, for example, cannot or will not do so does not support a conclusion that Super Bowl advertising should be free or should not cost more than other advertising. And, in the meantime, neither Sierra Nevada nor Pringles has gone out of business.

In fact, it is the smaller, lesser-known entities that may benefit most from Super Bowl ads. Then-startup GoDaddy.com famously received a significant spike following its first, memorable Super Bowl ad in 2005.[86] And the effect is generalizable:

> As a general rule, advertising works best on consumers with little information.... The lesson applies to the Super Bowl, too. New companies

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[85] Gerry Smith, *Super Bowl Ad Prices Stall After Years of Relentless Increases*, BLOOMBERG (Jan. 24, 2019), https://www.bloomberg.com/news/articles/2019-01-24/super-bowl-ad-prices-stall-after-years-of-relentless-increases; Lauren Watters, *How Much Would You Pay To Run A 30-Second Ad In The 1967 Super Bowl?*, AMERICAN MARKETING ASSOCIATION (Jan. 27, 2017), https://www.ama.org/publications/marketingnews/pages/history-of-super-bowl-commercial-costs.aspx.

[86] See Jeff Bercovici, *The Woman(!) Behind GoDaddy's Tasteless, Effective Super Bowl Ads*, FORBES.COM (Feb. 6, 2013), http://www.forbes.com/sites/jeffbercovici/2013/02/06/the-woman-behind-godaddys-crass-effective-super-bowl-ads/.

> and products get the biggest bang for the buck in the Super Bowl, because millions of people are hearing about them for the first time.[87]

The same dynamic applies to new content like films and movies. Thus, Super Bowl advertising "increases opening week-end movie revenue by 50–70 percent" and, on average, leads to an "incremental return of at least $8.4 million in opening weekend ticket sales associated with a $3 million Super Bowl advertisement."[88]

As noted, non-neutrality offers the prospect that a startup might be able to buy priority access to overcome the inherent disadvantage of newness, and to better compete with an established company. Neutrality, on the other hand, means that that competitive advantage is unavailable, and that the baseline relative advantages and disadvantages remain. On the margin, this favor incumbents, not startups.

Of course, the counterclaim is that incumbents will use their considerable resources to gain even *more* advantage with prioritized access. Implicit in this assertion is an assumption that the benefit to incumbents (over and above their natural advantages) from paying for priority, in terms of hamstringing new entrants, will outweigh the cost. This is unlikely generally to be true. They already *have* advantages. While sometimes they might want to pay for more, it is in *precisely* the cases where it might be worth it to do so (say, when a truly threatening new entrant is coming up fast behind) that the new entrant would *also* be most benefitted by paying for priority.

Implicit in all arguments about the need for neutral, zero-price access for edge providers is the belief that content deserves to be subsidized, while networks neither need subsidy nor even sufficient flexibility to adopt more profitable business models or to operate their networks optimally. *Innovation*, it is assumed, comes only from the edge — and even then, only from the small startup.

Of course, not all innovation comes from small, startup edge providers. As economists Peter Klein and Nicolai Foss have pointed out:

> The problem with an exclusive emphasis on start-ups is that a great deal of creation, discovery, and judgment takes place in mature, large, and stable companies. Entrepreneurship is manifest in many forms and had

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[87] Derek Thompson, *Why a Super Bowl Ad Is the Smartest Way to Waste $5 Million*, THE ATLANTIC (Feb. 5, 2017), https://www.theatlantic.com/business/archive/2017/02/super-bowl-ads-waste-5-million/515682/.

[88] Seth Stephens-Davidowitz, Hal Varian & Michael D. Smith, *Super Returns to Super Bowl Ads?*, 15 QUANT. MARKETING & ECON. 1 (2017).

> many important antecedents and consequences, and we miss many of those if we look only at start-up companies.[89]

Adopting a regulatory scheme that prioritizes startup innovation and content creation (although, as noted, it likely doesn't even do that) at the expense of network innovation, in part because network operators aren't small startups, may materially detract from consumer welfare and the rate of overall innovation.

The ability to charge high-usage content directly, instead of all ISP subscribers indiscriminately, encourages edge providers to optimize their content and their business models to take account not only of their own and their users' interests, but those of the network more broadly. In other words, differential pricing encourages content providers to internalize at least some of the externality they may impose on other network users. Mandated zero-price neutrality, on the other hand, means that the congestion costs fall on *everyone*, and the high-bandwidth content provider has limited incentive to optimize content or its users' demand for bandwidth to reduce congestion.[90] The result is that "[p]rice restrictions on ISPs' ability to charge additional fees to [content providers] that cause network congestion can lead to higher prices that are charged to all end users — regardless of whether or not the end user subscribes to the content service that causes the congestion."[91] It's clear why high-bandwidth-usage content providers would prefer everyone else subsidize their customers, but that hardly seems like an optimal result overall — or a sound basis for regulatory decision-making.[92]

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[89] Ángel Martin Oro, *Interview: Nicolai J. Foss and Peter G. Klein on "Organizing Entrepreneurial Judgment,"* SINTETIA (Jul. 7, 2014), http://www.sintetia.com/interview-nicolai-j-foss-and-peter-g-klein-on-organizing-entrepreneurial-judgment/. *See also* NICOLAI J. FOSS & PETER G. KLEIN, ORGANIZING ENTREPRENEURIAL JUDGMENT: A NEW APPROACH TO THE FIRM (2014).

[90] It is certainly true, of course, that content providers have *some* incentive to reduce congestion. Because not all of the costs of congestion are externalized (indeed, the largest creators of congestion problems are also the ones whose users suffer most from congestion, even if they don't bear the *full* cost), high-usage content providers do spend some resources to reduce congestion. And these efforts, meanwhile, reduce congestion not only for their own users, but for everyone else, as well. Put differently, while their excessive bandwidth use might impose external costs, their efforts to minimize bandwidth use confers external benefits. Other mechanisms (like usage-based transit pricing, for example) further incentivize some internalization of the network-wide costs of high usage. The issue, however, is *optimal* incentives.

[91] Connolly, *et al.*, *supra* note 36, at 544.

[92] And, for reasons noted above, it's probably not optimal for the content providers, either. They benefit from the subsidy, of course, but they are harmed by the inability to buy their way out of everyone else's congestion. On balance, the rules of the *2015 OIO* arguably leave no one with optimal incentives to manage congestion, and content needing the most bandwidth (or most sensitive to other quality of service requirements) will be the most affected.

IV. Conclusion

The proscriptive approach to vertical restraints previously adopted by the FCC (and today proposed, as well, for vertical restraints more broadly)[93] sacrifices sensible, effects-based competition analysis (as under the antitrust laws) for unnecessary over-inclusiveness.

Antitrust enforcement, by contrast, is circumscribed by longstanding economic and legal principles that would promote the certainty required to invest in costly innovation to meet industry projections in terms of new (e.g., 5G) network deployment and the introduction of an additional 10 billion devices by 2021.[94] As former FTC Commissioner Joshua Wright has pointed out:

> what is a novel policy dilemma for the FCC is a problem that antitrust has been grappling with for over a century and for which it offers a clear solution. Over the course of the last century, antitrust jurisprudence has evolved a highly sophisticated "rule of reason" to adjudicate various types of vertical arrangements by analyzing their costs and benefits. The rule of reason requires that each vertical arrangement be assessed on a case-by-case basis by marshaling the available economic literature and empirical evidence to evaluate the evidence of actual competitive harm under the specific circumstances of the case.[95]

The FTC has deep experience in dealing with complex competition cases and is well equipped to apply its economic expertise to the sorts of vertical issues that can arise in the broadband sector.

Future network deployment will depend on a flexible policy landscape that leaves room for a great deal of experimentation and innovation. In order to encourage continued investment and innovation in broadband deployment, the Commission should continue to rely on its capacity to conduct thorough economic analyses, and only move to deter anticompetitive conduct after it has been both empirically demonstrated and is not outweighed by increases in consumer welfare.

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[93] *See, e.g.*, Elizabeth Warren, *Here's How We Can Break up Big Tech*, TEAM WARREN (MEDIUM.COM) (Mar. 8, 2019), https://medium.com/@teamwarren/heres-how-we-can-break-up-big-tech-9ad9e0da324c.

[94] VNI Forecast Highlights Tool, CISCO SYSTEMS (July 12, 2017), http://www.cisco.com/c/m/en_us/solutions/service-provider/vni-forecast-highlights.html.

[95] *Prepared Statement of Commissioner Joshua D. Wright, Federal Trade Commission*, before the U.S. House of Representatives Committee on the Judiciary, Hearing on "Wrecking the Internet to Save It? The FCC's Net Neutrality Rule" (Mar. 25, 2015), *available at* https://www.ftc.gov/system/files/documents/public_statements/632771/150325wreckinginternet.pdf.