Federal Trade Commission

Net Neutrality Meets Regulatory Economics 101

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at the

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I. INTRODUCTION

I want to thank the Federalist Society's Telecommunications and Media Practice Group and its George Washington University Law School Student Chapter for the invitation to speak with you today.

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* The views stated here are my own and do not necessarily reflect the views of the Commission or other Commissioners. I am grateful to my advisor, Derek Moore, for his invaluable assistance in preparing this speech.

Today's conference occurs at a fortuitous time as the FCC Chairman has indicated the Commission will be voting on new net neutrality regulations tomorrow. The connection between net neutrality and media is so obvious it hardly needs to be stated. An increasing number of consumers use broadband internet access to consume an increasingly large amount of media. This media includes not only that which used to be consumed on the printed page, but also that which used to be consumed on television, and that which used to be consumed in a movie theater, and that which used to be consumed not at all, – like, for instance, cat videos.

Once we are able to review the FCC's specific proposed regulations tomorrow, I suspect the debate surrounding the FCC's new approach will quickly delve into the details of the 332-page plan to regulate the internet. This debate will no doubt be very interesting and I expect will ultimately be resolved by the courts after a few years of lawsuits. Today, however, we have available to us the advantage of exploring net neutrality regulation the day *before* we have specific regulations to examine. Today, we can take an approach that focuses upon first principles.

Today I plan to discuss the economics of regulation more generally, with the hope of placing the broadband industry in that broader context. Rather than focus upon *how* we regulate broadband, I want to focus upon *why* and *whether* we even need to regulate broadband. My thesis is that the two major reasons for regulating an industry – the presence of natural monopoly conditions or significant externalities – are

not present in the broadband industry. For that reason, we do not need to develop a new regulatory regime for broadband. Rather, we can use existing law and regulation to handle problems as they arise. In particular, I think antitrust is particularly well suited to protect consumer welfare from any issues that arise from priority contracting in the broadband industry, the prohibition of which is the major target of Chairman Wheeler's soon-to-be proposed regulations. Further, at least until tomorrow, existing consumer protection law authorizes the FTC to prosecute deceptive and unfair acts or practices in broadband markets that harm consumers.

II. State of Play in Net Neutrality Regulation

The FCC has a long and sordid history in attempting to enact net neutrality regulations. I do not think it would be a good use of our time here to recount the entire struggle. However I will note that my esteemed sister agency has taken several bites at the net neutrality apple only to have it swatted away just as many times by the D.C. Circuit.[1] The court's last swat occurred just over a year ago.[2] I, for one, have been waiting to see how the FCC would respond, especially after President Obama threw his

[1] *See* Verizon v. FCC, 740 F.3d 623 (D.C. Cir. 2014); *In re Preserving the Open Internet*, 25 FCC Rcd. 17905 (2010). *See also* Comcast v. FCC, 600 F.3d 642 (D.C. Cir. 2010); *In the Matters of Appropriate Framework for Broadband Access to the Internet over Wireline Facilities*, 20 FCC Rcd. 14986 (2005).

[2] Verizon, 740 F.3d 623 (D.C. Cir. 2014).

hat into the ring in favor Title II regulation late last year.[3] Shortly after the President's pronouncement, we learned earlier this month from the Chairman of the FCC Tom Wheeler that the FCC plans to use its authority under Title II of the Communications Act of 1934 to regulate broadband providers as common carriers.[4] Regardless of whether you think prospective regulation is a good way to ensure an "open" internet – and I do not, as I will explain more in a minute – the FCC using its authority under Title II of an 81 year old statute to regulate competition in the broadband market is sort of like Intel using a hammer and a sickle to manufacture semiconductors. As I noted just a minute ago, we will get to see the particulars of the FCC's latest attempt tomorrow.

II. A Quick Primer on the Economic Theory of Regulation

Before I discuss net neutrality specifically, I think it is worthwhile to ask a threshold question that I feel too often gets ignored in policy debates about net neutrality: what is the economic problem that net neutrality is supposed to solve? In other words, what is the economic basis for *any* regulation in the broadband market? To do this properly, it is worthwhile first to consider the theoretical bases for economic regulation generally. In other words, what can we say generally about why regulation may be necessary in certain industries?

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[3] Ezra Mechaber, *President Obama Urges FCC to Implement Stronger Net Neutrality Rules*, THE WHITE HOUSE BLOG (Nov. 10, 2014), http://www.whitehouse.gov/blog/2014/11/10/president-obama-urges-fcc-implement-stronger-net-neutrality-rules.

[4] Tom Wheeler, *FCC Chairman Tom Wheeler: This Is How We Will Ensure Net Neutrality*, WIRED.COM (Feb. 4, 2015), http://www.wired.com/2015/02/fcc-chairman-wheeler-net-neutrality/.

The standard economic answer is that a market failure necessary, but not sufficient, for regulation. Market failure – that is, an identifiable reason an unfettered free market may result in the misallocation of resources – is necessary but not sufficient because the there are multiple ways to solve problems involving market failure. If market failure exists, an important second question arises concerning the relative efficiency of alternative solutions, including regulation. However, well-understood principles of the economics of regulation require a solid understanding of the market failure to be solved before moving on to evaluating the costs and benefits of regulatory alternatives. In short, it makes little sense to subject consumers – in this case internet users – to a medical treatment or procedure without knowing whether they are sick in the first place.

We can generally describe four types of markets in which regulation may be necessary to correct a market failure.

The first is a natural monopoly in which fixed costs are large relative to the marginal costs of production. If this occurs, then it may be more efficient from a production standpoint for a single firm to produce all the output in an industry. In such a market there is a theoretical conflict between the free market – where output is produced by a single supplier – and allocative efficiency. Allocative efficiency occurs when the market-wide output equilibrates the marginal revenue associated with the sale of an additional unit of output with the marginal cost of producing it. In a

competitive industry in which sellers are price-takers, the marginal revenue is simply the market-clearing price. When a market is characterized by having only a single seller, the seller decides to produce a quantity that equilibrates marginal revenue and marginal cost. The difference is that a monopoly firm is not a price-taker; the marginal revenue of producing an additional unit is not simply the market price. Assuming the monopolist faces a downward-sloping demand curve and cannot price discriminate, producing an additional unit forces the monopolist to lower his price, and he must accordingly lower the price he charges for all units of output. For this reason, the slope of the monopolist's marginal revenue curve is steeper than the monopolist's demand curve, and equilibrating marginal revenue and marginal cost results in the monopolist producing a lower output than under competitive conditions, which is properly viewed as a misallocation of societal resources. Under natural monopoly conditions, however, economies of scale are such that it is efficient from a production standpoint for a single seller to produce all the output in an industry. When this occurs, there is an economic basis for government regulation to resolve the conflict between the allocative inefficiencies associated with monopoly pricing on the one hand, and the productive efficiencies associated with a natural monopoly cost structure on the other. Regulation in this context is often involves price oversight and entry regulation by a government body designed to resolve the monopolist's incentive to raise price above the socially

optimal level. Indeed, this mode of analysis was used to justify much of the rate regulation in the electric power industry.

A second category of market failure related to natural monopoly is the more general phenomenon of monopoly power. Firms can acquire monopoly power without natural monopoly conditions in some circumstances. Although a firm's acquisition of monopoly power and corresponding enjoyment monopoly profits is often temporary because new firms enter the market over time reducing the incumbent's power, economic welfare nevertheless suffers when a firm or firms exercise market power and increase the market price beyond what would obtain in a competitive market. Multiple firms may collude to exercise market power; or in some cases, a single firm might do so unilaterally. Government action and imposition of regulatory barriers to entry are also an important source of market power,[5] for example, state and local governments often impose restrictions to exclude new competitors, like UBER in the taxi market or state laws preventing the interstate shipment of wine.[6] Antitrust law prohibits the unlawful acquisition of market power that harms consumers.

The third type of market in which regulation may be necessary is a market plagued by externalities. An externality occurs when the parties to a market transaction

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[5] *See* Harold Demsetz, *Two Systems of Belief About Monopoly*, *in* INDUSTRIAL CONCENTRATION: THE NEW LEARNING 164 (Harvey J. Goldschmid et al. eds., 1974).

[6] *See, e.g.*, Comment of the Fed. Trade Comm'n to the D.C. Taxicab Comm'n 5-7 (June 7, 2013); FED. TRADE COMM'N, POSSIBLE ANTICOMPETITIVE BARRIERS TO E-COMMERCE: WINE, app. A, at 8-9 (2003).

do not internalize all the costs and benefits associated with their transaction. In other words, an externality occurs when the activities of one party impose uncompensated benefits or costs on other parties. When negative externalities are present, a free market results in too much production. When positive externalities are present, a free market results in too little production. When we think of externalities we typically think of negative externalities such as pollution, but it is important to remember that positive externalities exist as well. A good example is education. A teacher and a student, the seller and the buyer in the market for education, both benefit when a student buys education from the teacher. However, society at large benefits from a more educated populace and those benefits are difficult to capture in a private market exchange between teacher and student. Accordingly, there is some rational economic basis for government intervention to encourage more education transactions between teachers and students. Some markets that feature externalities might require taxes or subsidies to solve to induce parties to internalize costs or benefits imposed on society from their activities. Of course, externalities are ubiquitous in the modern economy. Most do not require any sort of regulation at all because private actors can internalize the externalities at relatively low cost.[7]

The fourth category involves market failures associated with the market for information. For example, market failures might arise because sellers have more

[7] *See* Dave D. Haddock, *Irrelevant Externality Angst,* 19 J. INTERDISC. ECON. 3 (2007).

information than buyers.[8] The efficient level of information is not necessarily perfect or "total" information because information is costly to supply. In markets for goods and services, failures associated with inadequate or asymmetric information are often handled without government intervention – for example, through firms' strategies to credibly signal information to consumers, the rise of review sites to that collect information about the quality of goods and services firms provide (think Yelp or Angie's List), and firms' own investments in reputation. Consumer protection law also prohibits deceptive statements and omissions that induce transactions that would not have occurred in the absence of market failure.

III. Net Neutrality and the Economic Theory of Regulation

Against this backdrop, the natural question is: where does the market for broadband internet access fit into the economic theory of regulation, broadly defined? What market failure, if any, is the FCC trying to solve with net neutrality regulations? Statements from the FCC Chairman are of little help. In a recent article, Chairman Wheeler said that net neutrality regulations are necessary "to preserve the internet as an open platform for innovation and free expression."[9] It is hard to glean from this

[8] *See, e.g.*, George Akerlof, *The Market for "Lemons": Quality, Uncertainty and the Market Mechanism*, 84 Q. J. ECON. 488 (1970); Howard Beales, Richard Craswell & Steven C. Salop, *The Efficient Regulation of Consumer Information*, 24 J.L. & ECON. 491 (1981).

statement exactly what economic forces are at work today in the broadband market preventing the internet from being an open platform for innovation and free expression.

The Chairman also says "the fundamental problem [is] with allowing networks to act as gatekeepers."[10] The word "gatekeeper" could have some relevant economic meaning. It is important, however, to pin down exactly what we think the Chairman means by the term. There are gatekeepers everywhere. McDonald's is the gatekeeper of Coca-Cola beverages sold inside McDonald's restaurants. Starbucks is the gatekeeper to my morning cup of coffee and the supermarket is the gatekeeper to your access to Cheerios breakfast cereal in the supermarket aisle.[11] A gatekeeper becomes an economic problem potentially worthy of regulation only when the gatekeeper stands between consumers and the *only* source of a desirable good or service. If consumers are able to get Coca-Cola or other similar beverages from sources other than McDonald's, then McDonald's will be unable to manipulate consumers' access to Coca-Cola in a way that makes consumers worse off because if it does, consumers are able to buy Coca-Cola from other sources. In short, it is *competition* that ensures that firms supply consumers access to the goods or services they want.

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[10] Wheeler, *supra* note 4.

[11] Verizon, 740 F.3d at 663-64 (Silberman, J., dissenting) (Noting that "all retail stores, for instance, are 'gatekeepers.' The term is thus meaningful only insofar as the gatekeeper by means of a powerful economic position vis-à-vis consumers gains leverage over suppliers.").

In other words, the "gatekeeper" issue identified by Chairman Wheeler is a problem worthy of regulation only insofar as the broadband industry is a natural monopoly or otherwise exhibits meaningful monopoly power – that is, the power to artificially increase market prices and decrease market output. The simple fact that there are multiple suppliers of both wired and wireless broadband internet renders this justification of regulation totally unpersuasive.[12] As I will explain a bit later, we have a legal regime specifically designed to address those sorts of problems: antitrust law. My point at this time is simply that the "gatekeeper" justification for broad-sweeping net neutrality regulation cannot possibly justify those regulations because no broadband provider can be viewed as a gatekeeper to anything when there is viable competition from other broadband providers.

Being charitable to Chairman Wheeler, it could be that the desire "to preserve the internet as an open platform for innovation and free expression" reflects a concern about externalities rather than natural monopoly or monopoly power more generally.[13] Indeed, Chairman Wheeler has touted that the latest net neutrality regulation will "ban

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[12] *See id*. at 662-667 (Silberman, J., dissenting) (explaining that the FCC failed to undertake analysis of whether broadband providers had market power in individual markets and noting that "[t]he Commission apparently wanted to avoid a disciplined inquiry focused on market power.").

[13] *See* Timothy J. Brennan, *Network Neutrality or Minimum Quality? Barking Up the Wrong Tree – and Finding the Right One*, CPI CHRONICLE (Mar. 2012) ("The relevant market failure is not insufficient competition but failure to recognize the network externality in the broadband environment: the value of internet access to a content supplier depends upon its viewers' ability to access links in its content. This market failure does not justify full net neutrality, in particular a non-discrimination rule. It does suggest a minimum quality standard . . . .").

paid prioritization, and the blocking and throttling of lawful content and services."[14] Perhaps the concern is that the broadband provider and the content provider do not internalize all the costs associated with a contractual arrangement through which the content provider pays the broadband provider for priority use of the network. The argument would seem to be that there is some social interest in egalitarian access to all broadband providers' networks – in effect a one-size-fits-all contract between broadband providers and content providers – and that we cannot trust the marketplace to reach this outcome without regulatory intervention.

An argument that the broadband market ought to be regulated because of externalities not captured in the bargains between broadband providers and content companies may be economically coherent, but it lacks any basis in fact. At this point, the problems associated with giving certain content providers preferential access to the network – and by extension providing certain content providers with degraded access – are purely theoretical. And as I will explain, both economic theory and empirical evidence give substantial reason to believe that restrained distribution arrangements between broadband providers and content providers are actually more likely to result in efficient outcomes for consumers. Furthermore, even if there is some evidence of an externality problem with contracts providing for priority access to certain content providers – and I have not seen such evidence – the FCC has numerous regulatory

[14] Wheeler, *supra* note 4.

options to address the problem short of outright prohibition. Indeed, the EPA does not ban coal production notwithstanding the fact that we have much stronger evidence supporting the conclusion that an unfettered market for coal production results in pollution externalities.

IV. Net Neutrality and Vertical Restraints

I would now like to transition from discussing net neutrality in the context of the economics of regulatory policy writ large to discussing net neutrality in the context of the economics of vertical restraints. Broadband providers and content providers occupy different positions in the supply chain. The Netflix customer needs both content – supplied through Netflix – and broadband access – supplied through one of any number of broadband providers – in order to enjoy Netflix's video streaming product. An arrangement between Netflix and one broadband provider that ensures a certain level of speed for customers using the broadband provider's network to access Netflix is simply a vertical contractual arrangement between two entities operating as two links in the same supply chain. The world is full of these vertical contracts in all sorts of different industries. And industrial organization economists have been studying these types of contractual arrangements for decades, so we know quite a bit about their marketplace effects generally.

Although it is well-accepted that vertical contracts occasionally can lead to anticompetitive foreclosure under certain specific conditions,[15] it is equally clear and has long been understood that such arrangements often are part of the regular competitive process and can generate significant efficiencies that enhance consumer welfare.[16] For instance, such arrangements can create efficiencies by reducing double marginalization, preventing free riding on manufacturer-supplied investments, and aligning incentives of manufacturers and distributors.[17] In fact, vertical contracts are frequently observed between firms lacking any meaningful market power, implying that there must be efficiency justifications for these practices. These efficiencies are at least partially passed on to consumers in the form of lower prices, increased output, higher quality, and greater innovation. In other words, the monopoly explanation – that a monopolist uses vertical contracts to foreclose rivals from access to a critical input

[15] *See* Thomas Krattenmaker & Steven C. Salop, *Anticompetitive Exclusion: Raising Rivals' Costs to Achieve Power over Price*, 96 YALE L.J. 214 (1986).

[16] *See, e.g.*, Benjamin Klein, *Exclusive Dealing as Competition for Distribution "On the Merits"*, 12 GEO. MASON L. REV. 119 (2003); Oliver E. Williamson, *Assessing Vertical Market Restrictions: Antitrust Ramifications of the Transaction Cost Approach*, 127 U. PA. L. REV 953 (1979); OLIVER E. WILLIAMSON, MARKETS AND HIERARCHIES: ANALYSIS AND ANTITRUST IMPLICATIONS (1975).

[17] *See, e.g.*, 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).

or a critical set of customers thereby raising the rivals' costs[18] – cannot be the reason for most instances of these types of contracts.

Indeed, there is considerable empirical evidence that strongly supports the view that vertical contracts are more often than not procompetitive. I have summarized this body of literature elsewhere[19] and will not do so again now, but as one study puts it, "with few exceptions, the literature does not support the view that these practices are used for anticompetitive reasons," which supports "a fairly strong prior belief that these practices are unlikely to be anticompetitive in most cases."[20]

Although we do not have the sort of rigorous empirical examination of the effects of vertical restraints in the broadband market specifically – the empirical studies I have pointed to relate to all sorts of different industries – anecdotal evidence demonstrates that "non-neutral" business models deployed by broadband providers have often proved highly efficient. In the mid-1990s, when most web content appealed to mass-market consumers, AOL paid brand name media companies, such as Time

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[18] *See* Krattenmaker & Salop, *supra* note 15, at 230-31.

[19] *See* Joshua D. Wright, Comm'r, Fed. Trade Comm'n, Broadband Policy & Consumer Welfare: The Case for an Antitrust Approach to Net Neutrality Issues, Remarks at the Information Economy Project's Conference on US Broadband Markets in 2013, at 10, n. 15-17 (Apr. 19, 2013).

[20] Daniel O'Brien, *The Antitrust Treatment of Vertical Restraints: Beyond the Possibility Theorems*, in REPORT: THE PROS AND CONS OF VERTICAL RESTRAINTS 40, 72-73 (2008). There is a general consensus among empirical economists on this point. *See also* Francine Lafontaine & Margaret Slade, *Exclusive Contracts and Vertical Restraints: Empirical Evidence and Public Policy*, *in* HANDBOOK OF ANTITRUST ECONOMICS (Paolo Buccirossi ed., 2009); James C. Cooper, Luke M. Froeb, Dan O'Brien & Michael G. Vita, *Vertical Antitrust Policy as a Problem of Inference*, 23 INT'L J. INDUS. ORG. 639 (2005).

Magazine and the New York Times to launch a new business model that offered custom content exclusively to AOL subscribers. This fueled competition with rival internet service providers and gave AOL the incentive to market its services aggressively to new customers, ultimately resulting in the distribution of some 250 million discs with AOL software, thus rapidly increasing consumers' access to the internet. In 2002, a then-upstart Google was able to achieve economies of scale in search by beating out its competition in a bid to become the default search engine on AOL, then the country's leading internet service provider, by offering a substantial financial guarantee.

V. The Antitrust Approach

Chairman Wheeler's forthcoming proposal to place an outright ban on "paid prioritization" and "the blocking and throttling of lawful content" is a categorical prohibition on certain types of vertical contracts in the broadband industry. If there was strong evidence that the types of vertical contracts the FCC Chairman is seeking to ban harmed consumers, then a categorical ban could be justifiable. But, as I have explained, the best available evidence points in precisely the opposite direction: vertical contracts are far more likely to benefit consumers than to harm them. However, it is undeniably true that vertical contracts *can* result in anticompetitive outcomes in some circumstances.[21] This raises an interesting question for the FCC: if an outright ban on vertical restraints in the broadband industry cannot be justified, yet there is a chance

[21] *See* Krattenmaker & Salop, *supra* note 15.

that vertical restraints could harm broadband consumers, then what should the FCC do? The answer is "nothing," and the reason is because the FTC – my agency – is exceptionally well-equipped to pick up the slack.

The problem with the FCC's proposed approach to net neutrality is that there is no way to identify the vertical contracts that are likely to be problematic *ex ante*. If economic theory and empirical evidence are correct, most contracts will benefit consumers and some will generate a real risk of competitive harm. In other words, the FCC is faced with a lack of any reliable and economically sound method to identify prospectively network discrimination that should be barred as anticompetitive or absolved as procompetitive.

But 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. Indeed, the same sort of reasoning that promotes using tort or contract law to govern occasional disputes between private entities engaged in everyday life and business arrangements rather than to regulate those activities prospectively supports the use of antitrust law to govern arrangements between broadband providers and content providers that end up reducing consumer welfare.

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. Indeed, antitrust law initially adopted and ultimately rejected – largely based upon the development of the economic and empirical literature I discussed earlier – a categorical prohibition of certain vertical restraints not unlike Chairman Wheeler's proposed prohibition on paid prioritization.[22]

The reason antitrust courts and agencies rejected the view underlying the President and Chairman Wheeler's proposed ban is that a revolution injecting economic analysis and method into antitrust law swept through its institutions in the 1960s and 1970s. The FCC need not catch up its understanding of industrial organization economics to the state of the art in 2015 to get this right; it only needs to embrace what was well understood by 1977 when the Supreme Court first accepted the basic economic principles that rejected categorical prohibitions of the sort embraced by net neutrality proponents.[23]

My view is that antitrust's rule of reason is far more likely to maximize consumer welfare in the broadband industry than Chairman Wheeler's proposed ban. Any legal framework that seeks to maximize consumer welfare must take three factors into

[22] *See, e.g.*, Leegin Creative Leather Prods v. PSKS, Inc., 551 U.S. 877 (2007) (applying rule of reason to minimum resale price maintenance); State Oil Co. v. Kahn, 522 U.S. 3 (1997) (applying rule of reason to maximum resale price maintenance); Continental T.V. v. GTE Sylvania, 433 U.S. 36 (1977) (applying rule of reason to non-price vertical restraints).

[23] *See* GTE Sylvania, 443 U.S. 36.

account. First, the framework must assess the probability that the challenged business arrangement is anticompetitive. Second, any framework must assess the probability that its application will result in errors, either false positives in which arrangements that benefit consumers are prohibited or false negatives in which arrangements that harm consumers are allowed. Third, the framework must acknowledge the administrative costs of implementing the system.[24] A rule that focuses upon minimizing the social costs of false positives, false negatives, and administrative costs is most likely to generate the highest rate of return for consumers.

Under Chairman Wheeler's proposed categorical prohibition, there will be no false negatives, only false positives. Instances of procompetitive conduct will be erroneously condemned unless you think the empirical research on the effects of vertical restraints is all wrong, at least as applied to the broadband industry. It is true that the rule of reason is probably more costly to administer in the individual case than Chairman Wheeler's proposed blanket prohibition, but the administrative cost the FCC incurs in developing, defining, defending, and re-defining whatever net neutrality order it ultimately adopts that gets upheld by a court is not trivial either.

Although the affirmative case for antitrust over net neutrality is clear on consumer welfare grounds, net neutrality proponents often assert that because antitrust

[24] Thomas W. Hazlett & Joshua D. Wright, *The Law and Economics of Network Neutrality*, 45 IND. L. REV. 767, 798.

might not "work" in all cases – that is the rule of reason might allow *some* vertical contracts that do in fact harm consumers – a blanket prohibition against all priority contracts is superior. This argument rejects a consumer-welfare based approach to regulation altogether by assuming – contrary to all available theory, evidence, and experience – that every instance of conduct prohibited by the FCC's plan will be harmful. The argument also seems to suggest that there is some category of harm to consumers that falls outside of the dimensions cognizable within antitrust and consumer protection law – price, output, quality, and innovation – that is both ubiquitous enough to justify categorical prohibition but also only observable to the FCC. That should be enough make any student of regulatory law or economics nervous. I am quite confident that the antitrust regime, after more than a century of developing expertise in applying the rule of reason, will be able to apply it to the broadband industry.

V. Conclusion

Before we decide *how* best to regulate the broadband industry, we must grapple with the antecedent questions of *whether* and *why* broadband is an industry that even needs regulating. Too often the debate over net neutrality is about the particulars of the FCC's latest proposed regulation and not about the characteristics of the broadband market that justify regulatory intervention in the first place. I hope I have made the case that proponents of net neutrality – the FCC Chairman in particular – have not

carried their burden to explain exactly why the broadband industry requires such a tight regulatory regime.

Before I conclude today, I would like to leave you with an example of hospitable regulation in another industry – an industry in which the case for regulation generally is far stronger than in the broadband industry. Those of you who are local will no doubt be familiar with congestion pricing on Interstate 495, the Capital Beltway. Until just a few years ago, all drivers had equal – "non-discriminatory" in the parlance of the FCC's Chairman – access to Beltway in Virginia. Now certain lanes on the Beltway in Virginia are "toll lanes," with the toll to be paid based upon the time of day and the level of congestion. Although at this point it is probably too early to say whether the toll lanes on the Beltway have improved traffic conditions in Virginia, my own experience suggests that it has, though your mileage may vary, literally. In any event, it is noteworthy that the Virginia Department of Transportation is exploring whether to expand the toll program to other highways in the state.

The case for regulation in what I will call the "road" industry is far stronger than it is in the broadband industry. The industry exhibits natural monopoly characteristics – most roads are actually built by the state – and there are obvious negative externalities associated with the use of roads in terms of both traffic and pollution. Yet regulators in this industry, at least in Virginia, are experimenting with new approaches that allow some customers to pay for priority to see if consumers can be made better off. In the

broadband industry, the FCC, by contrast, is seeking categorically to prohibit paid prioritization. When the FCC regulates the broadband industry more tightly than Virginia regulates its highways, there is something amiss with the regulatory process. One might even call the FCC's approach "over the top."

Thank you for your time.