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**Before the
Federal Communications Commission
Washington, D.C. 20554**

In the Matter of)
)
Restoring Internet Freedom) WC Docket No. 17-108
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**Comments of Justin (Gus) Hurwitz, Assistant Professor of Law, and
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These comments are respectfully submitted in response to the Commission's May 18, 2017, Notice of Proposed Rulemaking in WC Docket Number 17-108, relating to the Restoring Internet Freedom proceeding.

These comments include four distinct sets of materials. First, a narrative discussion, presented below. Second, following the narrative discussion as part of this document, copies of select writings that I have published since the adoption of the 2015 Open Internet Order that bear on the present proceeding. The most important of these is likely the first, which documents errors and misrepresentations in the 2015 Order that underlie key parts of that Order. Third, a copy of a Michigan State University Law Review article that I published shortly following the adoption of the Order that summarizes and independently presents much of the material included here. And fourth, copies of materials that I submitted into the previous record, to ensure their availability for consideration in the present proceeding.

Should the Commission have questions about these or any other material that I may be able to comment on, please do not hesitate to contact me.

Narrative Discussion

As an initial matter, there is very little new information for the Commission to consider in this proceeding as compared to the 2015 Open Internet proceeding. Rather, the present proceeding affords the Commission an opportunity to correct the factual and analytic errors made in the 2015 Order, and to update that Order based upon data that has become available as a result of its enactment.

The 2015 Order made numerous, basic, errors in its understanding or representation of the economic and technical literature. As both I discuss in the attached materials¹ and former FCC Chief Economist Tim Brennan discusses in his famous “Economics-Free Zone” article,² the 2015 Order bases its ban on paid prioritization on wholly irrelevant economic literature and simply ignores the substantial literature that has been developed over the past 15 or so years to address the precise question of the economic effects of paid prioritization. As I discuss in attached writings, the consistent conclusion of contemporary economic literature is that paid prioritization can have positive or negative effects on consumer welfare and that the specific effects of any given implementation are difficult to predict *ex ante*. From a policy perspective, this argues strongly against any per se ban on the practice, and strongly in favor of *ex post* case-by-case analysis.

Perhaps more troubling is the 2015 Order’s approach to the technical issues raised by paid prioritization. Again as discussed in the attached materials, the Commission mischaracterizes comments that were critical of the Commission’s concerns about paid prioritization as demonstrating concern. It’s primary support for its concerns derive from citing comments from Mozilla that simply assert without meaningful explanation that paid prioritization is zero-sum – in fact, it cites to the exact same comments submitted in different documents twice. And the Order merely notes and dismisses without analysis critical comments submitted by me and ADTRAN.

Errors such as these are simply that: clear errors (or misunderstandings, mischaracterizations, or, perhaps, misrepresentations). The present proceeding gives the Commission an opportunity to correct them.

The present proceeding also gives the Commission an opportunity to incorporate new information into and update the 2015 Order.

The 2015 Order was based on bold, empirically unfounded, and questionable predictions about how investment in both telecommunications infrastructure and edge services would respond to the Commission’s rules. Under the so-called virtuous cycle, the rules would promote development at the edge which would drive demand for bandwidth-consuming services that, in turn, would drive investment in infrastructure. Following decades of consistent multi-billion dollar investments by numerous firms, this prediction was courageous: a slight error could cost consumers billions of dollars a year and hamper economic growth.

We now have multiple years of data since the adoption of the 2015 Order. While this is still a limited amount of data, the best analyses of it tend to suggest, at best, that the 2015 Order was not right – that the Open Internet rules are not promoting investment – and at worst

¹ See *infra*, *Chairman Wheeler and the terrible, horrible, no good, very bad Open Internet Order*. See attached, *Net Neutrality: Something Old; Something New*.

² http://www.freestatefoundation.org/images/Is_the_Open_Internet_Order_an_Economics_Free_Zone_062816.pdf

that the 2015 Order was wrong – that those rules are, in fact, reducing infrastructure investment. Given that the Commission’s statutory gaze is infrastructure-focused – that the Commission is tasked with promoting growth of the network, not of the edge – this is alarming. In light of uncertain data, the Commission should err on the side of protecting existing, ongoing, investment, not on “triple-bank shot” in which investment is driven as an incidental consequence of the Commission’s extra-statutory interest in promoting edge industries.

Importantly, in its review of the 2015 Order, the DC Circuit Court of Appeals demonstrated its approach to the agency’s untested economic theories: deference. In allowing the Commission to overcome the Supreme Court’s exhortation that agencies not arbitrarily adopt interpretations of statutory language that differ from prior interpretations where a prior interpretation may have engendered serious reliance interests, the Court simply accepted the 2015 Order’s statement that “the regulatory status of broadband Internet access service appears to have, at most, an indirect effect (along with many other factors) on investment.”³ This statement, which contradicts all economic and common sense, was supported, as it were, primarily by a small number of statements by executives from a few firms, many of which were later contradicted. It was also supported by reference to USTelecom’s report on industry CapEx – a report that has since been updated and now shows that, in fact, the 2015 Order is correlated with a downturn in investment.⁴

That last point is worth dwelling on. But for the 2015 Order’s assertion that investment occurs independently of regulation, the DC Circuit would likely have required the Commission to contend with *Fox v. FCC*’s requirement that changes in an agency’s previous interpretation of the law not confound engendered reliance interests. But the most substantial evidence that the 2015 Order relied on in making that assertion now contradicts it, in a way that both calls into question the 2015 Order’s underlying economic theory and suggests the DC Circuit relied on incorrect facts presented by the Commission in affirming that Order.

Recent Writings

The rest of this document includes recent writings that I have published relevant to the present proceeding. These include:

- Chairman Wheeler and the terrible, horrible, no good, very bad Open Internet Order
- How (not) to prioritize (airline) internet traffic
- Net neutrality: No way to run an industry
- Did the Supreme Court just drive a stick into the spokes of the FCC’s Virtuous Cycle?

All of these appeared in AEI’s TechPolicyDaily.com.

³ Slip. op. at 48.

⁴ <https://www.ustelecom.org/broadband-industry-stats/investment/historical-broadband-provider-capex>; see also <https://www.ustelecom.org/blog/broadband-investment-heads-wrong-direction>.

<http://www.techpolicydaily.com/communications/terrible-horrible-no-good-open-internet-order/>

Chairman Wheeler and the terrible, horrible, no good, very bad Open Internet Order

by: Gus Hurwitz

March 17, 2015 6:00 am

We've had a few days now to digest the FCC's Open Internet Order. While this exercise will be ongoing for the foreseeable future, one thing has become abundantly clear: the Order is worse than expected. This is particularly true when it comes to the issue of paid prioritization. The FCC's analysis is threadbare and conclusory throughout. It cites comments selectively and without serious effort to analyze substantive concerns. It ignores and mischaracterizes evidence in the record. It bases its conclusions on irrelevant and at times self-contradictory factors. The commission plays so fast and loose with the record and draws so many clearly erroneous conclusions of fact and law that the only questions left are these: how badly is the commission going to lose, and what will the long-term impact be for the commission's reputation?

We can find examples of all of these problems by just looking at a few paragraphs of the Order – specifically, the analysis supporting the commission's ban on paid prioritization. Given that concerns about paid prioritization were the main motivation for the commission to get into this quagmire, it is reasonable to expect the commission treated this discussion with some care. The key text is paragraph 126, which explains that “[t]he paid prioritization ban we adopt today is based on the record that has developed in this proceeding.” This discussion makes reference to concerns that allowing paid prioritization “will result in the bifurcating of the Internet into a ‘fast’ lane ... and a ‘slow’ lane,” and that paid prioritization could hamper entry, deter innovation, harm competition and consumers, and give rise to a litany of other problems. The Order cites two examples from the comments (both expressing concerns about how prioritization could affect development of high-bandwidth applications and content like video). And the commission asserts that its “conclusion is supported by a well-established body of economic literature.”

The commission's reasoning does not stand up to even cursory scrutiny. To support the assertion that paid prioritization could cause a bifurcation of the Internet into “fast” and “slow” lanes, and in particular that this could lead to “degraded performance” for non-prioritized traffic, the commission points to comments from Mozilla (arguing that prioritization is “zero sum”), and to comments from Sandvine which show, as the commission incorrectly asserts, that bandwidth is finite, and that giving one application a greater share of that bandwidth reduces the bandwidth available for other applications.

Let's start with this mischaracterization of the Sandvine comments. Sandvine's discussion of paid prioritization starts by noting that “the FCC has put tremendous focus on Pay for Priority. We're not quite sure why.” Sandvine goes on to explain why the commission should not be worried about paid prioritization, arguing that the bifurcation argument – the one that the Commission cites to support banning paid prioritization – is likely “technically unsound.” The commission has taken the Sandvine comments out of context and misrepresented them as supporting its preferred policy conclusions. What is even worse, Sandvine's actual argument, that concerns about paid prioritization are technically and economically unsound, directly

contradicts the commission's bifurcation concern. How does the commission resolve this contradiction? It doesn't. The citation supporting the commission's "bifurcation" concern only includes supporting comments – it simply ignores the concerns commenters like Sandvine have raised

And, lest there is any doubt as to Sandvine's preferred policy outcome, it starts its comments by explaining that it "has seen firsthand how innovative service plans have increased adoption of the Internet around the world, enhanced competition, and given consumers more (and more affordable) choice." And it spends the rest of its comments arguing that the commission should protect innovative business models and billing arrangements – contrary to the commission's decision to ban or subject such arrangements to commission scrutiny. It is perverse, at best, for the commission to use Sandvine's comments to make a point with which Sandvine disagrees, in support of a policy that Sandvine was arguing against.

Sadly, this is par for the course for the Order. I know, because my own comments were given a similar treatment.

In support of its "bifurcation" theory, the Commission primarily relies on Mozilla's comments. In fact, they cite to Mozilla's comments twice for the same proposition (that "Prioritization is inherently a zero-sum practice"). The only other support they offer for this proposition is the mischaracterization of Sandvine's comments. The commission does cite both an ex parte notice that I submitted and comments from ADTRAN as offering a contrary view. But it does nothing to consider, let alone rebut, these arguments beyond acknowledging them. In another set of comments, I explain in great detail why it is wrong to say that prioritization is "zero sum." Contrast this with the Mozilla comments, which merely assert the zero-sum theory as true alongside non-technical hand-waving. My own hubris aside, senior commission officials have told me quite clearly that they understand the zero-sum argument is technically unsound.

But wait, there's more! Not only does the commission's justification for the ban on paid prioritization make no serious attempt at analysis and rely primarily on cherry-picked sentences from comments, but it also ignores the existing body of actual research on paid prioritization. Asserting that its "conclusion is supported by a well-established body of economic literature," the Order cites a total of six academic articles: four articles on price discrimination from the 1980s and two "more recent" articles (both are from 2000, one was never published), all of which are almost entirely irrelevant to the discussion of paid prioritization. Meanwhile, the commission gallantly ignores the significant body of research conducted over the past decade on the precise question of paid prioritization – even though substantial portions of this literature were discussed in the record. To refresh our collective minds: the consistent conclusion of this literature, almost to the paper, is that paid prioritization can be beneficial to consumers and competition; there are also circumstances where it can be harmful. It is simply beyond belief – a violation of the most basic principles that govern agency decision-making – that the commission simply chose to ignore the past decade of research on the very topic it was considering.

Sadly, this is not the end of the problems the order poses. But it is the end of this post. I will conclude by noting one final expert opinion that the Order did not address: in May of last year, Tom Wheeler testified before Congress that "there is nothing in Title II that prohibits paid prioritization." Yet here we are.

<http://www.techpolicydaily.com/communications/not-prioritize-airline-internet-traffic/>

How (not) to prioritize (airline) internet traffic

by: Gus Hurwitz

June 23, 2017 6:00 am

United Airlines President Scott Kirby is obsessed with making sure that flights depart on time. His obsession provides an object lesson in how not to run a network or, more precisely, in the importance of using the right metrics both to understand how to think about network performance and to realize network performance. Frequent flyers understand the problem with Kirby's obsession with on-time departures: Flyers care more about on-time arrivals than departures, and pushing flight crews to depart on time leads to poor customer experiences. (Chip-on-the-shoulder disclosure: The two worst experiences that I have had flying have both involved flight crews cutting corners in efforts to make on-time departures — once needlessly stranding passengers at airports and once boarding a plane before the pilot was even available for the flight.)

Why, then, is Kirby — a longtime airline executive who almost certainly understands the problems with the on-time departures focus — obsessed with this metric? For the same reason that net neutrality advocates are obsessed with "neutrality": It seems like a simple metric that captures how an efficient network should operate. Flyers don't like "delays." On-time departures aren't delayed, so maximizing them should maximize the network's overall performance. Or so it seems. In the case of both airlines and other networks, the truth is far more complicated.

Getting incentives right

The first rule of economics is that incentives matter. Many economics professors use a common historical story about English prison ships carrying prisoners to Australia to capture this rule (a story that is oddly appropriate to airlines). In the late 1800s England regularly sent convicts to Australia. The voyage by sea was not easy: An average of 12 percent of prisoners died on the way. Many in England found this alarming and sought to reduce the mortality rate. They tried many things, but nothing worked.

Nothing worked, that is, until the economists got involved. It turns out there was a simple problem with how the English were sending their prisoners to Australia: They were paying the captains of ships based on the number of prisoners that boarded the ships. This system was changed to one in which captains were paid based on the number of prisoners who departed their ships alive. Overnight the mortality rate fell from an average of 12 percent to about 1 percent.

Airlines get their incentives wrong when they measure performance by focusing on on-time departures. Passengers care about getting to their destinations on time, making their connections, and having reasonably comfortable accommodations. Prioritizing on-time departures makes it the goal of gate agents and flight crews to get passengers on planes and in their seats as quickly as possible. It tells the gate agents to rush the flight crew, and to pack uncomfortable Jetways with passengers. It also tells flight crews to brusquely seat passengers without effort to accommodate their needs.

Some level of expediency is certainly needed when boarding planes to avoid downstream ripple effects that disrupt more than a single plane's worth of passengers. But on the margin, when gate agents and flight crews are trying to shave a few minutes off the boarding process — trying to do in 20 minutes what needs 23 minutes — the negative effects of pushing for an on-time departure often accrue more to the passengers on the departing flight than to any others. And, by relying too heavily on the on-time departure metric, an airline deprives its employees of the discretion needed to accommodate other needs.

Getting the metrics right

A focus on on-time departures is premised on a basic misunderstanding of how to measure network performance. An airline network that is well-run will have few delayed departures. But correlation does not imply causation: A smaller number of delays does not mean an airline's network is running well. If the airline schedules connections that are too short, doesn't factor distance between connection gates into connection times, or flies routes that frequently take longer than scheduled, an airline can have a perfect on-time departure record but also have a large number of customers who do not reach their intended destinations on time.

Sometimes delay is good. If a flight is the last one out on a given day, there is relatively little cost and substantial benefit to delaying the flight for moderately delayed connecting passengers. More generally, delaying flights with few passengers who will be connecting to other flights is generally low cost. And we can add in another dimension: Delaying flights when passengers are connecting to destinations that are served by relatively frequent connecting service may also be favorable to delaying flights when passengers are trying to make more difficult connections.

Indeed, there are even circumstances in which it may make sense for a plane to leave early, without booked passengers. If those passengers can be easily reaccommodated on other flights and the early departure makes it more likely that boarded passengers will timely arrive at their destinations, there is a reasonable argument for a flight to depart early.

What metrics to use?

Part of the allure of using on-time departures as a metric for airline performance is that it is a clear, simple, bright-line rule. Other possible metrics are harder to measure or operationalize, which makes them in some ways less attractive. Of course simple rules are not always the right rules — in the case of on-time departures, the simple rule is, in fact, a bad rule.

This does not, however, mean there is a "correct" rule. Rather, there are a number of more useful metrics that different airlines may seek to optimize. The reality of most complex systems — including airlines, telecommunications networks, energy distribution, supply chains, and almost any interconnected network — is that there are multiple efficient equilibria and that those equilibria may shift under different operational conditions. During periods of good weather, airlines may want to minimize missed connections; during periods of bad weather, when some airports are experiencing substantial delays, airports may want to minimize arrival delays.

There are a number of metrics that airlines (and, passengers to an even greater extent) should value as more important than on-time departures. In the modern hub-and-spoke model that most airlines use, for instance, missed connections are one of the most important metrics. The most important metric for most passengers is probably near-on-time arrival at final destination. And, for comparing airline performance, the number of passengers carried between points in the network at a comparable rate of missed connections is a good measure of their overall capacity. These sorts of metrics may sound familiar to those who think about internet performance. Indeed, they are directly analogous: Missed connections are dropped packets, on-time arrival is latency, and the number of passengers carried at a fixed rate of missed connections is overall throughput or bandwidth. Very frequently different networks have similar characteristics, and there are lessons that are transferable between industries.

An airline, for instance, has a number of options for how it schedules (that is, prioritizes) departures. It could allow moderate prioritization by giving pilots and gate agents a small but significant departure window, allowing flights to leave a bit early or late to best serve the most passengers (even if this means some passengers miss their flights). This would be one form of reasonable network management.

Or it could take a more aggressive approach, prioritizing departures based on not just ensuring connections but also considering the status of the passengers: Flights would be more likely to be delayed or to leave early to ensure high-status fliers get to their destinations, with little accommodation for non-status flyers. This is the sort of rule that consumer protection advocates (and most consumers) would find exceptionally problematic. But the reality is that airlines are overwhelmingly capitalized by high-status flyers. Catering more to their needs generates increased revenues for airlines and in turn decreases costs and improves the quality of service for non-status flyers.

A final approach that our hypothetical airline could take — the one that is largely used today — is no prioritization. We may call this “departure neutrality”: Planes take off at their scheduled times, and we measure the performance of the network with reference to how well airlines stick to their departure-time schedule. This is the simplest of the rules. It may intuitively seem like the fairest. It may engender the most positive feelings. It’s the least likely to prompt consumer and consumer-advocate complaints. It’s also the least likely to yield the most efficient airline network.

<http://www.techpolicydaily.com/communications/net-neutrality-no-way-run-industry/>

Net neutrality: No way to run an industry

by: Gus Hurwitz

April 28, 2017 6:00 am

On Wednesday, Federal Communications Commission (FCC) Chairman Ajit Pai announced his plan to undo the 2015 reclassification of broadband internet access service, reverting internet access from a Title II telecommunications service to a Title I information service. Depending on how you count, this is the FCC's third, fourth, or fifth attempt at establishing what authority it has over internet services; it is the second fundamental reclassification of its authority since the Supreme Court affirmed its decision not to treat internet access as a Title II telecommunications service in *Brand-X*.

Under the law that governs how federal agencies operate, agencies such as the FCC are largely free to swing back and forth between different policies, even fundamentally conflicting ones, as political winds shift. The previous commission's rules were the most extreme of these swings to date, for the first time classifying internet access services generally as telecommunications services, subjecting them to blunt rules, and imposing vague conduct standards on the internet ecosystem as a whole — and they did so based on weak and controversial evidence. Chairman Pai's proposal would return us to a more neutral baseline, erasing the most extreme elements of the prior rules but leaving in place a framework for basic "rules of the road."

Needless to say, regularly rewriting the rules that govern one of the largest industries in the economy isn't a good way to run an industry. Unfortunately, it's not within the current commission's power to adopt rules that will likely constrain a future commission. But by returning to a more neutral baseline approach to internet regulation, Chairman Pai is creating an opportunity for Congress or the courts to step in and put an end to the destructive, yet largely meaningless, generational fight over "net neutrality."

Correcting the record

The previous iteration of the commission's rules was adopted in February 2015 and was subsequently affirmed by the DC Circuit Court of Appeals in June 2016. The most notable aspect of these rules was that they reclassified broadband internet access service as a Title II telecommunications service. Under Title II, the FCC has very broad authority to regulate nearly every aspect of the telecommunications industry.

Reclassification marked a stark change from the policy of the previous several commissions. Since the late 1990s, the commission had steadfastly argued, under both Democratic and Republican leadership, that internet access should not be classified as a telecommunications service. Rather, the key question prior commissions focused on was whether they should rely on Title I's "ancillary jurisdiction" doctrine or Section 706 of the Telecommunications Act to address network neutrality concerns. This question was rather definitively answered by the DC Circuit Court of Appeals in 2014 in an opinion that both indicated that the FCC could rely on its Section 706 authority and laid out a roadmap explaining how to do so in a legally satisfactory way.

The commission's story changed in the 2015 rules. Suddenly Section 706 was no longer sufficient; suddenly the commission needed to implement stronger rules that could only be supported by reclassification. What had changed? As a matter both of fact and law, nothing. The only change was political: Advocates for expansive government regulation of the internet had seized on network neutrality as a good means to their preferred regulatory end and had organized a successful campaign to foment concern and cement support for their preferred policy.

Critically, making this change required the commission to find support for it in the factual record. This is where the magic of administrative process comes in: The factual record the commission compiled as part of the notice and comment process included myriad opinions, both supporting and criticizing its proposed rules. Developing "factual support" for its new policy required merely pointing supportive comments from the record — both to substantiate the commission's preferred outcome and to respond to criticisms of it.

This process requires no analysis beyond saying "Commenters argued such and such. We agree." Indeed, the FCC's chief economist has publicly discussed the lack of — and, indeed, improper use of — economic analysis to support the 2015 rules. I have written about this as well, discussing the commission's mischaracterization of, and failure to respond to, critical comments that both I and others submitted. While one DC circuit judge criticized the commission for these problems, the court ultimately did what courts usually do: It deferred to the commission's evaluation of the factual evidence.

Setting things straight

In the coming weeks, Chairman Pai's proposal to "de-re-classify" internet access service is going to be characterized in dramatic terms. In reality, it is a very modest proposal: It would merely return the FCC's approach to the internet to the status quo that has governed for 19 of the 21 years since the 1996 Telecommunications Act was enacted — an approach that has given us Google, Facebook, Netflix, Amazon, Etsy, Pinterest, TechPolicyDaily.com, Pets.com, Craigslist, and a million other internet services.

What is more, Chairman Pai's efforts will certainly be successful. The factual record this time around will be roughly the same as it was in 2015. It will be just as easy for the new commission to stitch together a narrative of supporting facts as it was for the old commission. Indeed, it will be easier. The previous order had to contend with the overwhelming weight of substantive economic and technical research militates against the approach taken in 2015 and in support of the chairman's proposed approach.

And the chairman has an ace in the hole: The central theory of the 2015 rules was that they would encourage capital investment by telecommunications companies. With two years of data in the record, that theory has been shown to be false. The most complete analysis to date shows that capital investment in the sector is down, both in absolute terms and as compared to the economy as a whole. While a two-year horizon is a short period for such studies, and such studies are always subject to important caveats and limitations, the fact that they tend to suggest that reclassification has hurt capital investment — and especially the fact that there

are no compelling countervailing studies — presents exceptionally strong support for Chairman Pai's proposal.

Getting things right

But classification is not the real fight. Net neutrality is a generational fight; it is a religious war. Indeed, it is better understood as a fight over competing views of regulatory power than as a fight about how ISPs handle the data traversing their networks. Classification is merely the shorthand terminology for regulatory worldview; control of the commission is a proxy war for dominance of regulatory worldview. Never mind that the commission is tasked with regulating one of the largest and most important industries in the United States.

The unfortunate reality is that the structure of the commission's statute and the law governing how it interprets that statute all-but guarantees this proxy war will continue for the indefinite future. The facts are complex enough and the record well enough developed that whoever is in charge at the FCC will be able to find sufficient factual basis to support whatever rule matches the current political winds. So long as the FCC is governed by a statute that does not clearly articulate how the agency is to approach the internet, and so long as the courts take an overtly deferential approach to how the agency evaluates those facts, each successive administration will continue to use the commission to symbolize its particular regulatory religion.

There are no solutions to this problem from within the agency. Things can only be made right by Congress, by clarifying the commission's statutory authority, or the courts, by reversing their own decades-long abdication of their role in saying what the law is.

The most important thing that Chairman Pai's proposal does is to tidy up the net neutrality mess and deliver it to Congress. His proposal reverses the most extreme aspects of the 2015 rules — Title II reclassification in particular — and leaves the direction of substantive rules open. He has reestablished what has long been considered the neutral baseline of agency authority. Now it's Congress's turn.

<http://www.techpolicydaily.com/internet/court-fccs-virtuous-cycle/>

Did the Supreme Court just drive a stick into the spokes of the FCC's Virtuous Cycle?

by: Gus Hurwitz

June 30, 2015 6:00 am

One of the most potent pending challenges to the FCC's Open Internet Order will be based on the Supreme Court's opinion last year in *Utility Air Regulatory Group*. That case, which the court has affirmatively cited several times this past term, rejected EPA efforts to "tailor" provisions of the Clean Air Act, effectively rewriting the Act to facilitate its policy goals. There is a strong – if not perfect – analogy to be drawn between the EPA's approach to the Clean Air Act in that case and the FCC's need to use forbearance in the Open Internet Order to make the rules viable.

The court's latest rejection of the EPA's efforts to stretch the limits of the Clean Air Act to reach its own policy goals presents yet another potent challenge to the FCC's Open Internet Order.

Yesterday the court once again rejected the EPA's efforts to shape the Clean Air Act to implement its own – as opposed to Congress's – policy goals. In *Michigan v. EPA* the court found that the EPA's implementation of regulations without consideration of the costs of those regulations violated the Clean Air Act. The statute allows the EPA to impose regulations if it "finds such regulation is appropriate and necessary." The court explains that "the phrase 'appropriate and necessary' requires at least some attention to cost," going on to say that "One would not say that it is even rational, never mind 'appropriate,' to impose billions of dollars in economic costs in return for a few dollars in health or environmental benefits." The same analysis – and critique – likely applies to cost of the FCC's Open Internet Order.

But the court's *Michigan* opinion may be even more problematic for the FCC. It has language that calls into question the commission's "virtuous cycle" theory – the basic premise upon which the commission's Open Internet regulations are based. The "virtuous cycle" refers to the FCC's idea that "Internet openness drives a 'virtuous cycle' in which innovations at the edges of the network enhance consumer demand, leading to expanded investments in broadband infrastructure that, in turn, spark new innovations at the edge." Indeed, some of the court's language almost seems written with the commission – and its troubled history with "ancillary jurisdiction" – in mind.

Part of the reason that the EPA chose not to consider cost in implementing its regulation is that it found it difficult to assess the costs, and the offsetting benefits, of its proposed regulations. Indeed, as required by Executive Order, it did conduct a Regulatory Impact Analysis, which made some efforts to assess the regulation's costs and benefits. Quoting from the Court's opinion:

This analysis estimated that the regulation would force power plants to bear costs of \$9.6 billion per year. The Agency could not fully quantify the benefits of reducing power plants' emissions of hazardous air pollutants; to the extent it could, it estimated that these benefits were worth \$4 to \$6 million per year. The costs to power plants were thus between 1,600 and

2,400 times as great as the quantifiable benefits from reduced emissions of hazardous air pollutants.

Let that sink in for a minute. The EPA's own estimates found that its regulation would cost nearly \$10 billion per year to implement for a net benefit of a scant \$4 to \$6 million. The court continues:

The Agency continued that its regulations would have ancillary benefits – including cutting power plants' emissions of particulate matter and sulfur dioxide, substances that are not covered by the hazardous-air-pollutants program. ... [T]he regulatory impact analysis took the[se] into account, increasing the Agency's estimate of the quantifiable benefits of its regulation to \$37 to \$90 billion per year.

So, that does sound better. Factoring in these ancillary benefits, which were outside the scope of the agency's statutory authority, the analysis found benefits that clearly satisfied a cost-benefit analysis.

But this merely frames the key question this case presents for the Open Internet Order. Namely: are the relevant benefits \$4-6 million per year or \$37-90 billion per year? Or, do we include ancillary benefits in that calculation? It must be noted at the outset that the court doesn't answer this question. The dissenting Justices do argue that ancillary benefits should be considered. The majority opinion, however, expressly does not address whether they should be considered. It does note, however, that this result stems from factors that fall outside of the EPA's authority – and argues that the dissent "vastly overstates" its analysis of the EPA regulation's cost-effectiveness.

Recall the basic premise of the "virtuous cycle": That, at its core, FCC regulation will increase consumer demand for edge application which will increase investment in broadband to support that demand. It is difficult to attribute the effects of the virtuous cycle to costs and benefits – increased broadband investment, for instance, is a cost that is offset by increased consumer willingness to pay. Critically, that willingness to pay, under the terms of the virtuous cycle, is driven by consumer demand for edge applications – broadband Internet service is merely the means to accessing those applications. And the FCC has no authority – and has repeatedly assured that it has no authority – to regulate the broader Internet ecosystem, including edge applications. In other words, the virtuous cycle theory increases the costs of the FCC's regulation, without generating any consumer benefits attributable to offsetting those costs.

This may seem crazy. But it follows from a basic premise of administrative law: agencies may only act within the bounds of their statutory authority. If an agency's regulation is only viable because of how it affects things over which it has no legal authority, it is hard to understand the agency as acting within its statutory authority. In any such case – be it with the EPA, FCC, or any other agency – it could be true that the regulation is ultimately justifiable – but, if it is, it is up to Congress to implement the regulation, not to a rogue agency to adopt its preferred policy without legal authority.

The FCC has no statutory authority to regulate the Internet. If the Open Internet Order is only justifiable based on how it affects the Internet, then it really can only be understood as regulation of the Internet with an ancillary effect on services within the FCC's statutory authority. The tail must not be allowed to wag the dingo – and yesterday's opinion suggests the court will find just this fault with the Open Internet Order.

