

**Before the
FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, DC 20554**

In the Matter of:)	
)	
Protecting and Promoting the Open Internet)	GN Docket 14-28
)	
Framework for Broadband Internet Service)	GN Docket 10-127
)	
)	

REPLY COMMENTS OF MOZILLA

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I. INTRODUCTION

These reply comments are part of the latest round of formal comments at the Commission that began many years ago, with the development of the 2005 Internet Policy Statement if not even earlier. Fortunately, by now, the normative core of net neutrality appears to be mostly settled. In particular, there is general agreement that the FCC has a role to play to preserve net neutrality, and should adopt rules to articulate the boundaries of acceptable behavior by network operators in their operation of access services and underlying infrastructure. There is general agreement that these rules should include a rule that prevents access network operators from blocking ordinary, lawful traffic, and some form of a nondiscrimination rule on limiting, throttling, or prioritizing traffic. And there is also general agreement that transparency obligations should require disclosures of network management practices and other relevant details to the public; that individuals and companies should be able to file complaints with the Commission to identify possible violations of the rules; and that users of both mobile and fixed access services deserve some degree of protection.

Beyond this shared baseline, there are three key issues of substantive disagreement: (1) the most appropriate source of authority to adopt net neutrality rules; (2) how “paid prioritization” arrangements should be treated; and, (3) how mobile access services should be governed. The Commission’s choice on each of these issues will shape its selection of precise language for the final rules. This will set the course for the future of the access service industry, for better or for worse – either keeping it on its current status quo of a mostly neutral infrastructure, or blessing practices that deviate from the status quo to allow degradations and differentiations.

Despite some suggestions to the contrary, there is no “minimalist approach.” The commenters that rely on section 706 for authority, would apply fewer rules to mobile networks, and would allow paid prioritization are not proffering an option without impacts. In practice, this approach would have a significant and transformative effect on the status quo of the Internet’s underlying infrastructure, allowing network owners to extract a greater portion of the overall Internet revenue pie by skewing user choices and competitive content provider access, hampering innovation at the edge. There are two paths forward, and both will influence the future of the industry in a major way; but only one will protect a neutral, open Web.

These reply comments will describe Mozilla’s preferred approach which most effectively protects the Internet’s users, creators, and innovators: Title II authority as a basis for clear rules, applicable to mobile networks as well as to fixed, with a presumption against paid prioritization. First this reply focuses on Mozilla’s proposal for Title II authority. Second, we explain why a presumption against prioritization is the only workable path to protect the open Internet. And the final section will describe the support and efficacy of applying the same rules to mobile access services.

II. AUTHORITY AND MOZILLA’S PROPOSAL

The Commission can and should apply common carrier authority under Title II to the access networks connecting users to the Internet in order to support enforceable, lasting protections, either through reclassification or through partial classification in the manner Mozilla has proposed.¹ Mozilla’s proposal is a narrow and reasonable interpretation of existing law and precedent in light of changing technologies and market circumstances, and is consistent with the

¹ Mozilla supports reclassification as well as the partial classification described in the Mozilla petition. However, other commenters will ably expand in detail on the merits of reclassification. Thus, these comments focus specifically on the Mozilla proposal in the service of efficiency for both writer and reader.

D.C. Circuit's blueprint in the *Verizon* opinion. With the exception of reclassification, other options to move forward on authority carry too many question marks and red flags, and should be dismissed. Adopting rules under section 706, or under trigger conditions or other half-measures, will generate far greater legal and political challenges. Moving forward with section 706, in particular, will engender two-sided opposition, not only from advocates for effective net neutrality, but also from opponents who have strongly indicated their opposition to any path forward, including under section 706.² Moving forward with Title II, on the other hand, will incur some manageable legal and political cost, but will help protect the future of innovation, choice, and competition on the Internet.

With respect to the comments themselves, few address Mozilla's proposal for partial Title II classification directly, applying common carrier status to Remote End Point (or Remote Edge Provider, or REP) delivery services while leaving current end user facing access services as Title I information services. Those comments that criticize the Mozilla proposal are rebuttable.

A. Structural comments

1. REP delivery is a cognizable, separate service offered by ISPs to remote end points.

In general, one of the most common contentions regarding the Mozilla proposal is that there are no separable, cognizable services offered to REPs. These contentions seem to run contrary to the D.C. Circuit's interpretation of how communications law should view the current market.³ Moreover, the arguments also fail on their own.

The REP service is a new legal classification of the delivery functionality currently offered by an ISP to REPs within the terminating access network infrastructure (from the perspective of the REPs). The function underlying the REP service can be described as follows:

² Comments of Free Market Advocates Opposed to Regulation at 2-4.

³ Comments of Mozilla at 11.

Imagine that each ISP customer's local access service is not a single pipe, but rather a bundle of strands, where each strand is a connection corresponding to a single remote end point. There is a single logical strand corresponding to John Doe Subscriber and the remote end point Dropbox, a separate strand connecting Jane Doe Subscriber to Dropbox, and a separate strand connecting John Doe to Netflix. Each pairing of an ISP customer and a remote end point has its own unique logical strand in the local network. The ISP customer's Internet access service – currently classified as a Title I information service – encompasses the bundle of logical strands attached to that local user, as it connects the local user to all remote end points through the local network. The remote end point's delivery service encompasses the set of strands associated with that remote end point, of which there is one per local ISP customer, thus connecting that remote end point within the terminating network to all of the ISP's local customers.

So, each pair of a subscriber and a REP is included in two legal services: one Title I local access service, and one Title II REP service.

The Mozilla petition described the REP service as an “overlay” to help with technical understanding.⁴ From a legal perspective, however, it is not a service that's offered over or using telecommunications, but rather a service that consists of telecommunications and no other integrated functionalities. Each “strand” of telecommunications is included within two different, legally distinguishable services. Some of the services are offered through a written contract, whether with a local subscriber or another entity; others are offered implicitly, by virtue of routing the traffic without blocking it *ex ante* and demanding payment.

Today, REP services are not defined through a written contract. But their implicit and non-paid nature need not be a bar to them being recognized as separate services. For example, there is a long history of implicit, non-paid exchange of traffic in network peering relationships.

⁴ Mozilla, Petition to Recognize Remote Delivery Services in Terminating Access Networks and Classify Such Services as Telecommunications Services Under Title II of the Communications Act, GN Docket Nos. 09-91, 14-28, WC Docket No. 07-52 (filed May 5, 2014) (Mozilla Petition), at 8.

Verizon’s comments challenge the independent nature of REP services whether they are implicit or explicit. Verizon asserts that even if a separate legal contract existed between a network operator and a remote end point – with separate pricing, separate terms, and a separate deliverable not included or even comprehensible within the contracts Verizon has with its local subscribers – that contract cannot be a separate service from the point of view of communications law.⁵ So, the local, paying subscriber must be the recipient of Verizon’s sole legally cognizable service under their theory. That subscriber is not a party to any explicit or implicit agreement between Verizon and a REP; has no insight into any relationship between Verizon and a REP whatsoever; has no opportunity to negotiate or influence the terms of such a relationship; and has no means in contract law or otherwise to seek redress should the subscriber’s interests be harmed by the relationship. It seems beyond reason to contend that such a construct is a single service offered to a local subscriber under these circumstances.

Some other arguments seem circular. Comcast, for example, cites the D.C. Circuit’s opinion in the *Verizon* case as saying, essentially, that because the Commission had not classified any part of broadband services as a common carrier service, then “there can be little doubt the court understood broadband providers were not acting” as common carriers – yet this argument comes just a few lines after Comcast quoted the court as saying the question is not whether providers are or are not acting as common carriers.⁶ If the Commission identifies common carrier services within the local access network, and classifies them as such, the D.C. Circuit’s objections cited by Comcast simply disappear.

Other arguments are misguided or do not effectively indicate that the Mozilla proposal is in any way unworkable. For example, Free State Foundation claims that edge providers and end

⁵ Comments of Verizon at 63.

⁶ Comments of Comcast at 61-62.

users are blurring and converging as categories, and on that basis opposes the Mozilla proposal.⁷ In fact, the Mozilla petition referenced that convergence, and used the concept of a remote edge provider only to distinguish from *local* users who are direct subscribers of the ISP's access service, not based on the activities of either party but rather on their connectivity with respect to the ISP.⁸ This blurring of functional categories is a feature of the Mozilla proposal, not a bug, as it supports the argument that REP service is offered "to the public" (in that anyone can be a remote end point). The differentiation of services remains sensible, in that local access to reach one user is at the same time remote access to anyone not in the local network, and vice versa.

Not all comments were critical, of course. Some provide clarity on the nature and potential formal definitions of a REP service. The Center for Democracy and Technology, in particular, went into considerable detail in its exploration of what a REP service looks like, how it could be defined, and how it would be structured.⁹ CDT also offers ample commentary on the feasibility and sensibility of articulating two distinct legal services that share one underlying telecommunications capability.¹⁰

2. *The scope of the Mozilla proposal is on two-way routing within a local network offered to remote end points.*

Some comments critique the Mozilla proposal with arguments that seem to fail to understand its targeted scope. The scope is quite focused and targeted: bidirectional routing of traffic within a local access network, between a subscriber of the ISP and (but not including)

⁷ Comments of the Free State Foundation at 21.

⁸ Mozilla Petition at 11.

⁹ Comments of the Center for Democracy & Technology at 21-22.

¹⁰ *Id.*

interconnection points leaving the local access network.¹¹ Hopefully, the initial comments filed by Mozilla as well as these reply comments will help clarify the target scope.

Some comments conflate the Mozilla proposal with the related “sender-side” proposal that would similarly have the Commission identify two services within the local network, but separate them by the directionality of traffic. Time Warner Cable¹² and NCTA¹³ both make this mistaken conflation in their filings. These criticisms must simply be ignored as inapplicable.

USTA also conflates Mozilla’s proposal with the sender-side proposal,¹⁴ but in addition, raises a reasonable concern over the multiplicity of possible remote entities involved in managing the other end of the communication from a local subscriber.¹⁵ USTA first asks whether it is Mozilla’s contention that each of these entities offers a telecommunications service;¹⁶ it is not, as the scope of the telecommunications service articulated in the Mozilla petition is purely within the last mile, access service.¹⁷ The better question, implicit in USTA’s filing, is which of these entities is the “remote end point” being offered a REP service, under Mozilla’s theory. As our initial comments describe, it is the natural end point of the communication, the host of the material, rather than any intermediaries who operate CDNs or other infrastructure.¹⁸

Indirectly, some commenters indicate that the “for a fee” language inherent in the definition of Title II means that the scope of the Mozilla proposal is limited only to those services where edge providers actually pay funds to an ISP.¹⁹ This is not the case, as that language can and should be interpreted by the Commission more broadly, to include services that

¹¹ Mozilla Petition at 6-8.

¹² Comments of Time Warner Cable at 19-20.

¹³ Comments of the National Cable & Telecommunications Association (NCTA) at 38-39.

¹⁴ Comments of the United States Telecom Association (USTA) at 32.

¹⁵ *Id.* at 34-35.

¹⁶ *Id.*

¹⁷ Mozilla Petition at 6-8.

¹⁸ *Id.* at 11.

¹⁹ *See, e.g.*, Letter from Barbara van Schewick, Stanford University to Marlene H. Dortch, Secretary, Federal Communications Commission, GN Docket No. 14-28 (filed Aug. 11, 2014), at 1 (Schewick *Ex Parte*).

are not offered solely in exchange for direct financial compensation.²⁰ For example, in the case study of Comcast's blocking of BitTorrent connectivity raised by one commenter,²¹ under the Mozilla proposal the Commission would identify a Title II service offered by Comcast to BitTorrent, in exchange for the value BitTorrent offers to the access service. Without the Internet's remote end points offering value, there would be no value in an "Internet" access service, and people would not subscribe.²² And, as a practical matter, this wouldn't be "free riding" by BitTorrent in any sense, because BitTorrent's end users who are Comcast subscribers are paying for their access service with the expectation that they will be able to access BitTorrent, and thus they are directly supporting the costs incurred by their use of the local access network to communicate with BitTorrent.²³

AT&T does not directly address the Mozilla petition, but makes the assertion that Title II classification would categorically expand beyond the last-mile network and cover the entire transmission path.²⁴ As discussed above, this is not (and need not be) the case with the Mozilla proposal, particularly in that it does not propose the extraction of a telecommunications component as a stand-alone service within access services. Similar to Verizon, AT&T also asserts that "broadband" (a general, abstract term used to describe a family of disparate communications technologies meeting certain parameters of minimum delivery quality) cannot simultaneously support multiple legal services and thus it is impossible to articulate a single scoped Title II service within "broadband."²⁵ This is an especially curious remark when AT&T's U-Verse product includes a Title I end user Internet access service, a Title II telephone service,

²⁰ Comments of Mozilla at 11-12.

²¹ Schewick *Ex Parte* at 1.

²² Comments of Mozilla at 11-12.

²³ *Id.*

²⁴ Comments of AT&T at 39-40.

²⁵ *Id.* at 41-43.

and a video service regulated as a MVPD under Title VI, all sharing the same fundamental capacity and connection.

Time Warner Cable asserts that if the legal structure around Internet access services is segregated, such an action might disrupt the foundational assumptions that underlie the Commission's federal jurisdiction.²⁶ Although an interesting theory, the scope of Mozilla's proposal does not, in fact, change this foundation. Whether understood as driving the local end user service or the REP service, the traffic being routed within the local network is going to, or coming from, another set of networks and legally distinct services, many of which will be located in a different state. The underlying assumption is that the content managed in local network is largely being routed end-to-end and crosses state boundaries, so that even if formal control and operation of the service does not extend outside of a single state (as it does not today with end user access services defined as information services), the traffic itself has its ultimate origins or destinations outside the state. Nothing in this assumption changes under the Mozilla proposal and corresponding separation of services.

Curiously, NTCA appears to contend that the biggest weakness of Mozilla's proposal is that it is *too targeted*.²⁷ Certainly, Mozilla's proposal doesn't address all of the problems that impact the open Internet and user experiences online. The choice facing the Commission in this proceeding is actually three-fold: first, take no effective steps at all, and let things grow worse; second, make big, clean, complete, bold moves to address a large number of problems in a single sweep; or third, make targeted moves that address some problems and establish a foundation to

²⁶ Comments of Time Warner Cable at 22.

²⁷ Michael Romano, "Angels on the Heads of Pins and Splitting Hairs," *NTCA New Edge blog* (July 18, 2014), at <http://www.ntca.org/new-edge/policy/angels-on-the-heads-of-pins-and-splitting-hairs-the-winding-roads-to-common-sense-results-on-net-neutrality-and-how-to-find-a-more-direct-path>.

address other problems in a later proceeding. Neither of the latter two options is bad; the Mozilla proposal represents the third, most targeted path forward.

B. Definitional comments

Although the largest share of substantive comments related to the Mozilla petition critique the core concept of separate services, some target the second-order question of what classification is legally correct for a REP service. As an initial and contextual note, this would be a new determination, rather than a change in classification for an existing service, and the Commission's interpretation of the statutory terms in this context would be reviewed under Chevron deference.²⁸ Thus, the Commission is highly likely to be successful on subsequent review so long as it offers a plausible, logical interpretation of the relevant statutory concepts including "for a fee" and "offered directly" in the context of the services at issue.

1. REP services are in practice offered "for a fee" for purposes of the Communications Act.

Some arguments against a Title II classification of REP services state that, because they are not offered in exchange for explicit, direct payment by edge providers, they do not meet the statutory requirement under the Communications Act that services be offered "for a fee."²⁹

These arguments contend that the Act's "for a fee" language requires direct monetary payment in exchange for the provision of communications. Mozilla addressed this contention in initial comments.³⁰ To recap: As a formal matter, the concept of a "fee" can be interpreted to include "anything of value." Independent remote end points not affiliated with the ISP offer "value" in services, applications, and content desired by end users, generating essentially all of

²⁸ Comments of Mozilla at 22.

²⁹ Comments of USTA at 35-37; Comments of Verizon at 64.

³⁰ Comments of Mozilla at 11-12.

the demand for access services.³¹ As a practical matter, to address largely rhetorical contentions regarding the (legitimately high) costs faced by ISPs, no portion of the infrastructure is built or operated without payment, as local subscribers pay for use of the entire access network. Under no legal or logical argument would a Title II classification for REP services force end points to bear the brunt of payment to every terminating access network operator.³²

Moreover, grounding objections to Title II status for REP services on an absence of payment is ironic. After all, the original objection to net neutrality – from Ed Whitacre, then of SBC as it was about to acquire AT&T – was a claim that edge providers were using the telecom’s “pipes” for “free”.³³ The clear intention at the time was to charge those providers directly. Going forward, the continued intention of the access network operators, as well as the reason for active debate over paid prioritization in particular, is to charge some remote end points for terminating access network delivery and/or differential treatment for that delivery. If the Commission declines to adopt Mozilla’s proposal because of the absence of such payments, their inevitable emergence on the heels of such a decision will create significant regulatory and legal complexity.

Ultimately, whether direct payments are occurring today for REP service or not, there is value being exchanged. End users pay for local access service because of the remote end points they can reach through it. If ISPs were unable to provide access to remote end points, subscribers would leave. This is clear, and undeniable, value in exchange for service, sufficient to justify Commission interpretation as a “fee.”

³¹ *Id.* at 12 (“The edge provider offers Internet content desired by the (paying) local access service subscriber; in fact, without edge providers, the access service would have no value.”).

³² Comments of Verizon at 64.

³³ *E.g.* Ken Fisher, “SBC: ain’t no way VoIP uses mah pipes!”, *Ars Technica* (Oct. 31, 2005), at <http://arstechnica.com/uncategorized/2005/10/5498-2/> (“Now what they would like to do is use my pipes free, but I ain't going to let them do that because we have spent this capital and we have to have a return on it.”).

2. *REP services are directly offered to the public under the Communications Act.*

Some commenters contend that REP services cannot be classified as Title II services because they are not directly offered to the public within the language of the statute. For example, Comcast notes that there is no direct agreement between end points and ISPs.³⁴ In a related argument, USTA claims that remote end points do not specify the points of transmission for the service.³⁵

As with the “for a fee” challenge, Mozilla’s previous filings address these arguments already. The opening premise is that all remote end points are offered an ISP’s REP service, and use it either by receiving traffic sent by a customer of the ISP, or by generating traffic sent to a customer of the ISP. Although most of the REP services are indeed implicit and do not include explicit written agreements, this need not be a barrier to finding that REP service is actually offered. And even where there is no explicit agreement for the points of communication, ubiquitous IP packet headers include origin and destination information, clearly specifying where traffic originates and where it is to terminate. Within the scope of the REP service, the boundaries of communication are the end user and a point of interconnection, beyond which the packets are outside the ISP’s direct control (though preserving header addressing information at all stages).

III. PRESUMPTION AGAINST PAID PRIORITIZATION

The second major issue of disagreement reflected in initial comments focuses on how the Commission should handle paid prioritization arrangements, deals between an ISP and a remote end point to prioritize traffic from that end point within the local access network. The

³⁴ Comments of Comcast at 63-64.

³⁵ Comments of USTA at 37-40.

Commission should adopt a presumption against paid prioritization, because it is impossible to define a workable standard for prioritization that avoids degrading and harming other uses of the access service. Such an approach would not prevent the emergence of any hypothetical beneficial prioritization, as there are multiple ways to get around the presumption, if legitimate.

A. No workable standard on acceptable degradation

The core premise of supporters of paid prioritization is that prioritization isn't too harmful to other uses of the Internet, and should therefore be permitted. Setting aside for the moment the potential for competitive harm of allowing ISPs to pick winners and losers through prioritization – a significant argument in its own right – identifying a standard for acceptable degradation of other traffic is not workable, as these reply comments argue. The Commission should instead adopt a presumption that paid prioritization arrangements are against its Open Internet rules, and review requests for exemptions to that presumption on a case-by-case basis.

1. Prioritizing some packets slows down other packets.

As Mozilla's initial comments demonstrated, the technological reality is that prioritization of some packets slows some other packets.³⁶ Does that mean that prioritization therefore degrades other traffic? Plain meaning seems to say yes, but some contend that slowing down some traffic doesn't automatically mean that it is degraded. In these arguments, an email or similar non-latency-sensitive Internet use isn't truly "degraded" if the delay in transmission of its content goes up by, say, half a second. Often, that argument is correct. The email service that a user experiences probably isn't much changed.

But what if that same delay were to be imposed on a VoIP communication? Or web browsing, but it would apply to every iterative load of a page element that comes from a new

³⁶ Comments of Mozilla at 20.

source? What if some services or sources of content end up being degraded more than their competitors in a noticeable way?

Degradation will often verge into the harmful and creates the wrong incentives. Moreover, the ISP has incentives to encourage that to happen occasionally in order to increase the relative value of the prioritization offering. At the very least, underinvestment in infrastructure is more appealing if the result is increased sales of a prioritized offering balancing out any loss in direct subscribers – even if the degradation never grows so great as to turn best efforts traffic into a true garbage class.

Sandvine offers another comment, emphasizing the zero-sum nature of prioritization: They say everybody will pay for priority if it's effective and reasonably priced, leaving everyone at the same level as if nobody paid for priority.³⁷ They make this comment to indicate that business models based on prioritization are unlikely to emerge. But it is also evidence of the lack of benefits of prioritization, while it indicates clearly the harms, as those who cannot afford to pay will suffer, even if the benefits are dispersed too broadly for anyone to gain noticeably.

2. There is no good, workable standard for acceptable degradation.

It's logical to begin with the assertion that some delays do not perceptibly harm the use of some Internet applications and services. But it's impossible to conceive of a rule that would effectively separate harmful from harmless delays. Arguably, the Notice of Proposed Rulemaking attempted to do something comparable, through one of its three proposals for a non-blocking rule: the "reasonable person" standard of access.³⁸ The objective of that standard was to identify the degree of degradation that renders a service unusable. Yet, many of the same

³⁷ Comments of Sandvine at 9.

³⁸ *Protecting and Promoting the Open Internet*, GN Docket No. 14-28, Notice of Proposed Rulemaking, FCC 14-61, para. 104 (rel. May 15, 2014) (*2014 NPRM*).

interests who seem to support the workability of a standard for acceptable degradation in the context of prioritization objected to the workability of a standard for acceptable degradation in the context of a proposed no-blocking rule.

Any effort to articulate a standard for a level of degradation that is acceptable will have errors, because of the variability of quality needs for different applications, and different users for the same applications, and even different times of day and other contexts for the same users and the same applications. Effectively enforcing such a standard would require a lot more work, even if a standard is chosen and articulated with the unavoidable errors brushed aside. And any standard would struggle to adapt to new technology inventions and innovations, whose quality needs may not be determinable.

The far better approach is to presume that prioritization, and particularly prioritization in exchange for payment, is a violation of open Internet rules on the grounds that it is unreasonable discrimination.

B. Presumption not a complete ban

Adopting a presumption that prioritization is a violation of the rule would leave the Commission with ample options to preserve future potential good that can come from prioritization. User-directed priority, reasonable network management, specialized services, and individual case-by-case instances in which the network operator can overcome the presumption all create acceptable exceptions to permit prioritization practices.

User-directed priority, although long ago envisioned through the Internet technical standards of DiffServ and IntServ, has never been made a focus of network operators. Alcatel-Lucent spends significant time in its filing describing the feasibility and validity of allowing prioritization where the choices are made by users through real-time signals, without constraints

or application-specific decisions by network operators.³⁹ User-directed priority, when designed correctly, greatly alleviates the harms for choice, competition, and innovation that prioritization and concomitant degradation normally pose.

Exceptions for reasonable network management, where an act of prioritization is properly located within that scope, would also be permissible in a rule schema that includes a presumption against prioritization. For example, prioritizing use of the network by emergency services would seem to fit naturally within this category.

Specialized services, if engineered as non-Internet-connected communications services that share the physical infrastructure of Internet access services but do not interfere with their use, also offer an opportunity for new business models and differential treatment, without causing generalized harms to the open Internet. Already, with many ISP infrastructures, MVPD and voice services share the same infrastructure as broadband services, under different legal frameworks and rules.

Even apart from these exemptions, should a new business model be conceived of that requires some form of prioritization yet does not fit within any of the established exceptions, establishing a presumption would not prohibit that business model from emerging. Companies can request that the presumption be overcome. If a company describes its proposed business model in detail, compellingly explains its meritorious nature for the open Internet as a whole, and if the Commission gives opportunities to public interest organizations and others to identify defects in their arguments or harms for consumers and/or competition incurred by the practice that the companies may not have recognized (or may be deliberately omitting) – and if no such defects are present or valid – then overcoming the presumption would be proper.

³⁹ Comments of Alcatel-Lucent at 21-22.

IV. SAME RULES, DIFFERENT MANAGEMENT FOR MOBILE

The Commission faces two choices for a path forward on mobile networks. The first path is to follow the pattern of the 2010 rules, creating exceptions for mobile through the rules themselves.⁴⁰ The second path is to apply the same rules to mobile networks, and create ample room for network management through the reasonable network management exception. The first path includes no effective mechanism to prohibit bad behavior from emerging. The second leaves in place oversight for harmful practices, without barring the ability of mobile network operators to deliver the services expected by their subscribers.

One challenge facing the Commission is how to articulate the scope of the reasonable network management in a dynamic, flexible manner that simultaneously provides certainty to network operators investing in next generation wireless networks. There are many, non-exclusive approaches to help achieve this, in contrast to the strident false choice presented in a recent CTIA *ex parte* claiming that reasonable network management exceptions must by necessity be too broad or too restrictive.⁴¹ One approach that might be helpful in this exercise is to consider whether practices generally reflect industry standards and best practices. Another might be to focus specifically on blocking and application-specific discrimination practices, and permit management practices that do not look at the application or content in use. A third might be to consider a “sandbox” style exception, a safe harbor that allows for experimentation with new network management practices, on a time-limited basis, if announced in advance. Such a mechanism would help build a record to seek industry standardization, or a determination by the Commission that the experimental practice qualifies as reasonable. These need not be resolved at

⁴⁰ Although the rules were more limited in their governance of mobile networks, informally, the Order made clear that behavior by mobile operators that would violate the fixed rules would not be tolerated. *See Preserving the Open Internet*, GN Docket No. 09-191, WC Docket No. 07-52, Report and Order, 25 FCC Rcd 17905, para. 105 (2010).

⁴¹ Letter from Scott Bergmann, Vice President, Regulatory Affairs, CTIA to Marlene H. Dortch, Secretary, Federal Communications Commission, GN Docket No. 14-28 (filed Sep. 4, 2014), at 3 (CTIA *Ex Parte*).

the same time as the adoption of rules in this proceeding, either; they are offered to indicate that the concept of reasonable network management is effective and powerful, and can be adapted through Commission guidance over time to empower good, dynamic management practices.

A. Same rule framework essential for openness

The Commission must take strong steps to promote openness, choice, and innovation in mobile applications and content. The bulk of initial comments support applying the same rules to mobile access services as fixed.⁴² Mozilla’s initial comments made these arguments in detail as well.⁴³ Mobile access is a key component of the “virtuous cycle” that underlies this proceeding. As initial comments by the Open Technology Institute at New America Foundation demonstrate, arguments derived from the unique market posture of mobile services are unconvincing, outdated, and unsuitable to justify a regulatory distinction.⁴⁴ Finally, there are also certainly “operational constraints” on satellite networks, and the operational characteristics of cable, fiber, and DSL networks vary quite widely as well.⁴⁵

Initial comments indicate that there should be no significant impact on today’s mobile services if the same rules are adopted, as major providers have already established policies that indicate nondiscrimination and no blocking.⁴⁶ Arguments against applying the same rules are thus self-contradicting, in that adopting effective rules to protect openness will simultaneously not have an impact, and yet destroy the carriers’ ability to offer services.

It’s not enough to say simply “mobile is different,” because all networks are different. The question instead is how to ensure ample freedom for essential network management – a

⁴² See, e.g., Comments of the Internet Association at 20-21; Comments of National Public Radio, Inc. at 11.

⁴³ Comments of Mozilla at 22-24.

⁴⁴ Comments of the Open Technology Institute at the New America Foundation and Benton Foundation at 30-53.

⁴⁵ Comments of CTIA at 14.

⁴⁶ *Id.* at 12-13.

constraint better addressed through the exception to the rules designed precisely for it, rather than abandoning meaningful rules from the outset.

Some commenters contend erroneously that consumer choice is sufficient to police bad behavior, and note that consumers effectively have more choice of mobile providers than fixed.⁴⁷ Although the latter observation is certainly true, the former is not, because the harmful behavior may not be noticeable to subscribers, particularly if directed against new services and content providers who have not yet been able to emerge and reach public consciousness. For example, if a wireless carrier blocks YouTube, users would revolt and enough would leave to pressure the provider to undo the change. But if the carrier blocks YouTube's startup competitor NewTube, not known to the public outside Silicon Valley, few subscribers if any would notice, and market pressure for change would be nonexistent. Yet NewTube would never have a chance to emerge and disrupt the market for mobile Internet-based video delivery services.

B. Legitimate technical challenges addressed through reasonable network management

Many opponents of net neutrality for mobile access services seem confused, believing that the Commission has proposed a ban on network management practices as a whole, rather than rules prohibiting blocking and discrimination in management. Most, if not all, of the mechanisms cited in CTIA's filings – including scheduling for downlink and uplink,⁴⁸ handover between cell towers, load balancing, power control, and interference coordination, among others⁴⁹ – would not be seen as blocking or discriminatory unless explicitly designed to be (for example, a load balancing algorithm that proactively blocks BitTorrent to “reduce load”). So

⁴⁷ *E.g. id.* at 28.

⁴⁸ *Id.* at 18.

⁴⁹ CTIA *Ex Parte*, Reed and Tripathi paper at 5.

arguments against applying meaningful rules to mobile services because of the complexity of network management, on some level, miss the point.

The Commission can take additional affirmative steps to indicate what it believes to fall within the scope of reasonable network management. For example, network management that generally reflects industry standards and best practices could be declared reasonable. The Commission could separate application-specific from application-agnostic discrimination.⁵⁰ In addition, the Commission might consider creating “sandbox”⁵¹ style exceptions, safe harbors allowing for experimentation with new network management practices, on a time-limited basis, if announced in advance. These determinations need not be made immediately, either; the rules can and should make clear that reasonable network management is permissible, and then subsequent guidance should be provided by the Commission on the scope of that exception.

V. CONCLUSION

The Commission stands at a crossroads, with the future of the Internet at stake. Down one path, Internet users and developers will continue to enjoy the benefits of a neutral, open Web, where they can innovate and choose and compete without gatekeeper interference. Down the other is an uncertain future of legal risks, side deals, and barriers to invention and growth. Although this proceeding has reached a core of general agreement, how the Commission resolves the outstanding issues of authority, prioritization, and mobile rules will determine which path the Internet will face.

Mozilla has offered a compelling strategy to protect the open Internet, and encourages the Commission to follow it.

⁵⁰ Professor van Schewick has advocated this since 2010. See Barbara van Schewick, “Network Neutrality: What a Non-Discrimination Rule Should Look Like,” SSRN (Sep. 20, 2010), at <http://ssrn.com/abstract=1684677>.

⁵¹ Commissioner Jessica Rosenworcel, “Sandbox Thinking,” *Democracy* (Fall 2014), at <http://www.democracyjournal.org/34/sandbox-thinking.php>.