

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

In the Matter of)	
)	
Preserving the Open Internet)	GN Docket No. 09-191
)	
Broadband Industry Practices)	WC Docket No. 07-52
)	

COMMENTS OF THE CENTER FOR DEMOCRACY & TECHNOLOGY

The Center for Democracy & Technology (CDT) respectfully submits these comments in response to the Commission’s September 1, 2010 Public Notice announcing a further inquiry in the above captioned proceedings, on the subjects of “specialized” services and the application of openness principles to mobile wireless platforms.

I. Specialized Services

In CDT’s view, the goal of the Open Internet proceeding should be to ensure the preservation of basic Internet access service – that is, Internet access service that operates on a best-efforts basis, is fully open to independent speakers and innovators, and creates a platform on which innovation can occur without any network operator permission. Network operators may well offer additional services that reflect different business models or technical architectures. But such services should create *additional* options to ordinary Internet access. The Commission’s approach to “specialized” services should reflect this principle; network operators should have leeway to experiment with service offerings that are not Internet access, so long as such services do not impair the robustness, availability, or openness of the operators’ Internet access offerings.

Cabining the impact of specialized services on regular Internet access service requires that the two types of services remain distinct and that the Commission actively police the line between them. In policing this line, the Commission needs to look at both functional and technical characteristics.

From a functional standpoint, it is crucial that specialized services be truly *specialized*, in the sense of serving a specific and limited purpose. A service that provides a general-purpose ability to send and receive data communications across the Internet should not be eligible for treatment as a specialized service. Otherwise, network operators would have an easy way to evade open Internet rules. They could offer something that gives consumers the most popular capabilities of Internet access – the ability to send email, access popular websites, and so forth – while labeling it a “specialized service” and hence exempting it from the open Internet rules. Pricing or other incentives could be used to drive customers towards the specialized service in place of plain old Internet access.

In considering this risk, the Commission should not limit itself to analyzing each specialized service in isolation. It is entirely conceivable that a network operator, hoping to evade the open

Internet rules, could offer a number of services that, taken individually, might seem to serve limited purposes – but that also, when taken together, offer all of the most popular functions of Internet access service. For example, imagine a suite of services that includes a music download service, a VOIP service, a travel shopping service, an online bookstore service, and so forth. Given a broad enough package of specialized services, customers could come to view the package as a plausible substitute for Internet access, because the package provides them with essentially all the main functions they are looking for out of their Internet access.

In our prior comments in this proceeding, CDT suggested specific language to prevent this kind of evasion of the open Internet rules. Specifically, we proposed that the definition of “specialized service” should require that the service not be *“intended, marketed, or widely used as a substitute for broadband Internet access service, either individually or together with other [specialized] services offered by the same provider.”*¹ In defining specialized services, the Commission should be sure to include this or comparable language. Any service or suite of services that provides consumers with a functional substitute for Internet access should be treated as Internet access for purposes of the open Internet rules.

In addition to this functional component, the line between specialized services and Internet access services must have a technical component. The Commission needs to ensure that specialized services are not delivered in a manner that threatens the technical operation of best-effort Internet services.

For example, suppose that a carrier engineers its network so that Internet access traffic and specialized services traffic are delivered over fully shared, undifferentiated bandwidth, with the specialized services receiving first priority. If the specialized traffic always has first claim on network resources, then during times of congestion, the Internet traffic will be “last in line” and its performance will be inferior to that of the specialized traffic. Indeed, as specialized services proliferate, the increasing specialized traffic could lay claim to most or all of the capacity at congested bottlenecks, leaving little bandwidth or other capacity for regular Internet traffic. In this scenario, there really is not much of a best-efforts Internet left; rather, there is a system in which effective access to end users depends on cutting a deal with the carrier, and traffic for which no deal has been cut is carried on a best-efforts basis using only whatever scraps of capacity are left after the demands of the prioritized traffic have been satisfied. Far from preserving an “innovation without permission” environment, this would create a strong burden for online innovators to negotiate with carriers for carriage via specialized services – because at points of congestion, only specialized services get reliable access to scarce bandwidth or capacity. An innovator that elected eschew such negotiation and instead rely on ordinary Internet delivery would face a serious competitive disadvantage in serving that carrier’s subscribers.

There are two ways to avoid this kind of negative impact on Internet access services. First, and most simply, a carrier could deliver specialized services on bandwidth that is physically or logically separate from the bandwidth used to deliver Internet access traffic. This is what happens in the traditional cable network architecture: cable television programming and Internet access traffic are assigned separate channels. In this type of approach, the ebb and flow of specialized services traffic has *no impact* on the performance of Internet access traffic. In the language of CDT’s suggested definition, the specialized service in this case *“is allocated bandwidth on last-mile transmission facilities that is separate from bandwidth allocated to*

¹ CDT Reply Comments (http://www.cdt.org/files/pdfs/CDT_Reply_Comments-Open_Internet.pdf) at 39.

*broadband Internet access service, such that usage spikes for the specialized [] service do not affect the amount of last-mile bandwidth available for broadband Internet access service.*²

A second approach would be for a carrier to allow some sharing of bandwidth between specialized and Internet access services – but to engineer things in a way that puts a cap on how much impact specialized services traffic can have on the amount of capacity available for Internet access traffic.

For example, instead of forcing Internet access traffic to wait in a crowded router queue until all the prioritized specialized traffic has been sent, a carrier could create separate router queues for the two categories of traffic. The specialized traffic might be “prioritized” in the sense that its queue is tolled more frequently than the Internet queue. But the Internet queue would be tolled at a regular and sufficient frequency as well. In this scenario, the Internet traffic does not have to wait until all of the prioritized traffic has been sent; it still gets access to a share of network resources, even when there is a surplus of specialized services traffic.

In this model, the specialized and Internet services can effectively borrow capacity from one another when the network capacity exceeds demand. Indeed, if either category of service is not generating traffic at any point in time, the other category could go ahead and fully occupy all available bandwidth. The key, however, is that when congestion arises, regular Internet access traffic must retain access to an effective baseline of network capacity. So long as that baseline represents a sufficiently robust level of capacity, capacity sharing between Internet services and prioritized specialized services should be acceptable.

CDT’s suggested definition of specialized services reflects this approach by saying that the specialized service *“receives priority over Internet access traffic on last-mile transmission facilities, if at all, only in a manner designed to ensure that a robust amount of bandwidth remains available for Internet access traffic even during periods of heavy usage of the [] specialized services.”*³

One question this language does not answer is what would qualify as “robust.” CDT addressed this question at some length in its prior comments.⁴ In brief, CDT believes that a robust amount of capacity should be one that is capable of supporting a wide range of mainstream Internet applications. No rigid numerical threshold need be set, but the Commission could establish some presumptions or safe harbors to promote greater certainty.

Given these considerations, CDT’s suggested definition for specialized services is as follows. The Commission would police the line between specialized services and Internet services by evaluating potential specialized services against this standard:

² CDT Reply Comments at 40.

³ CDT Reply Comments at 40.

⁴ CDT Reply Comments at 37-38.

Specialized Broadband Transmission Service: Any communication service by wire or radio that—

(a) provides broadband data transmission—

(i) between an end user and a limited number of parties or endpoints; or

(ii) for a limited set of purposes or applications;

(b) is not intended, marketed, or widely used as a substitute for broadband Internet access service, either individually or together with other managed or specialized services offered by the same provider; and

(c) either—

(i) is allocated bandwidth on last-mile transmission facilities that is separate from bandwidth allocated to broadband Internet access service, such that usage spikes for the specialized service do not affect the amount of last-mile bandwidth available for broadband Internet access service; or

(ii) receives priority over Internet access traffic on last-mile transmission facilities, if at all, only in a manner engineered to ensure that a robust minimum amount of bandwidth remains available for Internet access traffic even during periods of heavy usage of the managed or specialized service.

Another approach to policing the line between specialized and Internet access services would be to build on a concept included in the joint principles released by Verizon and Google, which called on the Commission to issue an immediate report if it found that non-Internet services were being offered in a manner to “evade these consumer protections.”⁵ The Commission could include a provision its rules stating that:

If the Commission finds that one or more specialized services are functioning to a substantial degree as a substitute for broadband Internet access service, or are otherwise being offered with the purpose or effect of evading these open Internet protections, the Commission may treat such service or services as broadband Internet access service.

Even if specialized services are defined so as to be distinct from Internet access services – in terms of having both a limited functional purpose and a limited impact on the technical performance of Internet traffic – there remain at least two additional policy considerations.

One policy concern centers on bandwidth allocation. The fact that specialized services may be distinct from Internet access services in all the ways discussed above would be of little comfort to Internet access users if the network operator were to devote the bulk of capacity to the former and reserve only a small amount for the ordinary Internet.

CDT recommends dealing with this risk in two ways. First, the Commission should carefully monitor and report on carriers’ practices in this area. It should require network operators, when

⁵ Verizon-Google Legislative Framework Proposal (http://docs.google.com/viewer?url=http%3A%2F%2Fwww.google.com%2Fgoogleblogs%2Fpdfs%2Fverizon_google_legislative_framework_proposal_081010.pdf) (paragraph on “Additional Online Services”).

offering specialized and Internet access services in the same geographic markets, to disclose how much bandwidth they allocate to each category of service. In addition, the Commission should expressly state that in its broadband deployment reports pursuant to Section 706 of the Telecommunications Act of 1996, it will include an analysis of what impact, if any, the offering of specialized services appears to be having on the robustness of broadband Internet access offerings.

Second, as discussed above, the Commission should actively police the line between specialized services and Internet access services. It seems likely that, if a carrier were to devote the lion's share of network capacity to specialized services in lieu of Internet access, the carrier would have to be taking functions for which Internet users today rely on the Internet and shifting them over to specialized service alternatives. The more a carrier does this – that is, the more it structures its network to encourage users to rely on specialized services instead of the Internet – the greater the risk it should face of the Commission declaring that the carriers' specialized services should henceforth be treated as Internet access services. In short, the Commission's ability to police the line between specialized and Internet services should offer a defense against network operators starving Internet access of bandwidth in order to favor its specialized services. Once the specialized services assume enough of the functions of Internet access, they would become subject to the open Internet rules.

An additional policy concern, as noted in the Public Notice, is the risk of anti-competitive conduct with respect to specialized services. Here, too, CDT believes that the principles and definitions described above offer a measure of protection. Specifically, where open, best-efforts Internet access is available at a robust level of capacity, the potential for anti-competitive conduct should be reduced – because for most kinds of online service offerings, the ordinary Internet would offer a sufficient platform for delivering services to end users. So long as that robust ordinary Internet platform is available, treatment as a specialized service should be of premium importance only to online services with extremely high bandwidth, performance, or reliability requirements. The Commission should monitor and report on any anti-competitive conduct with regard to such services. The Commission could also include, in its reports on bandwidth allocation as described above, an analysis of whether bandwidth allocation patterns increase the risk of anti-competitive conduct.

II. Mobile Wireless Platforms

As CDT has indicated throughout this proceeding, we believe that it would be reasonable to allow operators of mobile wireless networks to prioritize voice telephone traffic.⁶ This reflects the history, and still the perception of many users, of mobile wireless service providing first and foremost a mobile telephone capability.

The Commission should categorically reject, however, the claim that mobile wireless operators need unconstrained freedom to play favorites and hence should be entirely exempt from openness rules. There is simply no basis for the assertion that wireless providers would need to discriminate among traffic based on content-based factors such as its source, ownership, or application.

⁶ CDT Comments (http://www.cdt.org/files/pdfs/2010_CDT_openness_comments.pdf) at 52; CDT Reply Comments at 41.

As CDT discussed in its reply comments, the technical factors cited by many advocates of excluding mobile wireless services are almost entirely irrelevant.⁷ Yes, there are significant technical differences between mobile wireless and wireline services. But open Internet rules can accommodate those differences. First, practices needed to address technical challenges of the mobile wireless environment would qualify as “reasonable network management.” Second, carriers would remain free to engage in any practices that focus on factors like how much bandwidth individual users are consuming. Usage-based management of network resources should not conflict in any way with openness rules. And as the Public Notice observes, wireless carriers may already be moving in this direction by adopting usage-based pricing plans.

CDT believes that extensive discussion of the technical characteristics of mobile wireless is, more than anything, an attempt to get the Commission to lose the forest in the trees. But the Commission should not lose focus. The question it should be asking, as it looks at the technical descriptions it is sure to receive in response to this further inquiry, is whether any of them demonstrate a concrete need for mobile wireless carriers to have unlimited discretion to single out specific applications, content, or services for special treatment. Do the technical characteristics a commenter is citing explain why, if two different services generate similar patterns of bandwidth consumption, a wireless carrier would need the ability to restrict one but not the other? Is there really a *technical* reason why a carrier might need to restrict one high-bandwidth application but not another?

If wireless carriers do not respond to this public notice with a sound and convincing description of why exactly they need free rein to play favorites, then CDT suggests the Commission should take that as strong evidence that no such reason exists. In other words, the burden must be on the carriers to explain the link between the technical details they discuss and the policy exemption they are seeking. CDT believes that, in the end, no such link can be made. Mobile wireless carriers can address their various technical challenges without running afoul of open Internet principles.

Indeed, the repeated assertion that discriminatory treatment is somehow a necessary component of wireless network management, with no convincing technical explanation for why this would be so, simply underscores the importance of applying openness principles to wireless. In the absence of rules to the contrary, it appears that picking and choosing among Internet applications and forcing online service providers to negotiate for permission or approval of carriers is exactly what mobile wireless operators envision. As more and more Internet use moves onto mobile platforms, it is crucial that the Commission take action to prevent such gatekeeping.

Finally, the Commission should avoid trying to “split the baby” in this area by making open Internet protections available for some kinds of mobile applications and applications environments but not others. For example, drawing distinctions between native applications and web-based applications would likely be difficult or impossible given that many native applications make extensive use of web technologies and many of web-based applications take advantage of native capabilities to offer device-specific experiences. Policies that prevent discrimination on the basis of application, regardless of how applications are designed, would render such hair-splitting unnecessary and allow applications developers the freedom to design their products for whichever platforms they see fit.

⁷ See CDT Reply Comments at 41-43.

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CDT appreciates the Commission's continued attention to the crucial issue of Internet openness.

Respectfully submitted,

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