Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

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

COMMENTS OF WCAI

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EXECUTIVE SUMMARY

The Wireless Communications Association International, Inc. ("WCAI"), the trade association of the wireless broadband industry, submits these comments on the *Notice of Proposed Rulemaking* released by the Federal Communications Commission in this proceeding on October 22, 2009.[1]

The inherently shared, transient nature of mobile wireless broadband use presents unique challenges for wireless networks. Mobile wireless broadband service providers are rapidly developing and deploying the most advanced technologies available to meet these challenges; however, the laws of physics dictate that mobile wireless broadband service providers cannot build infinite capacity into their networks to meet infinite demand. Mobile wireless broadband service providers thus require flexibility in prioritization, pricing and other network management policies to provide the best possible user experience to their subscriber bases as a whole.

The rules proposed in the *NPRM* nevertheless appear to presume that traffic prioritization, and perhaps even usage-based pricing, are discriminatory. If such presumptions are included in the final rules, it likely would limit business model innovation and disrupt existing business models by forcing service providers to ask the Commission for permission to innovate.

To remedy these concerns, the Commission should apply a general standard of "reasonableness" to any rule restricting discrimination by wireless broadband

[1] *Preserving the Open Internet*, Notice of Proposed Rulemaking, 24 FCC Rcd 13064 (2009) ("*NPRM*").

providers. Limiting the rule to unreasonable discrimination would be consistent with Title II of the Communications Act and the extensive body of judicial precedence interpreting it. Such an approach would be more likely to withstand judicial scrutiny, and less likely to discourage investment and innovation or disrupt existing business models. At the same time, consumers would be more than adequately protected from any potential for unreasonable or anticompetitive discrimination from mobile wireless broadband service providers.

The Commission should also adopt an exception for managed services from net neutrality restrictions, which would enable mobile wireless broadband service providers to continue to employ innovative new business models. The Commission should define managed services in as general a manner as possible, and determine whether services meet the definition on a case-by-case basis, without attempting to define how much network capacity could be devoted to those services.

Finally, the Commission should not impose a "tethering" requirement on mobile wireless broadband networks. Requiring tethering would destroy the business cases for innovative wireless devices predicated on limited bandwidth requirements (*e.g.*, Kindle, OnStar, smart grid, etc.) by imposing a "one-size-fits-all" business model on mobile wireless broadband service providers.

DISCUSSION

The Commission is considering application of net neutrality regulations at a time when the mobile wireless broadband industry is in the early stages of the transition from switched, voice-centric mobile services to IP-centric services provided over mobile broadband platforms. These integrated mobile broadband

platforms are capable of providing numerous services beyond voice, including Internet access, machine-to-machine ("M2M") communications, location services, and mobile video. Innovative mobile broadband platforms can serve every type of customer, including individual consumers, enterprises, and other "vertical" customers (*e.g.*, public safety, health, and education). And they communicate with an incredible array of devices, including miniature sensors, automobiles, mobile phones, handheld computing devices, netbooks, desktops, and servers in the "cloud."

This transition from voice-centric to IP-based services is having a profound impact on the mobile industry and consumers. Consumers with smartphones and netbooks are increasing the demand for network capacity dramatically, while competition continues to exert downward pressure on pricing.[2] Mobile wireless broadband service providers are upgrading their networks and seeking additional spectrum to help meet this demand, but it is unlikely that these activities alone will be sufficient to assure that American consumers experience the quality of mobile wireless broadband service they increasingly demand. If current trends continue unabated, traffic demands will increasingly exceed capacity. In this environment of innovation, investment, and bourgeoning consumer demand, mobile broadband providers will require flexibility in pricing, prioritization, and other network management policies to provide the best possible user experience to their subscriber bases as a whole.

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[2] *See* Mark Lowenstein, *Avoiding the 'AOL problem'*, Fierce Wireless (Oct. 27, 2009) (available at http://www.fiercewireless.com/story/avoiding-aol-problem/2009-10-27).

The network neutrality rules proposed in the *NPRM* could have the unintended consequence of disrupting these evolving, innovative business models at a critical inflection point in the transition to next generation, IP-centric mobile wireless broadband networks. The transition toward a world in which communications capability is embedded in everyday devices is still in its infancy. Inadvertently disrupting this ongoing revolution could reduce investment and delay the deployment and adoption of mobile wireless broadband networks and services. WCAI offers these comments to delineate potential unintended consequences of the proposed rules and promote a more robust dialogue in this proceeding.

I. Mobile wireless broadband networks inherently *share* last mile capacity among *mobile* users.

Many net neutrality advocates continue to underestimate the significant differences between wireline and wireless broadband networks, which face very different challenges in meeting the ever-increasingly demand for capacity. The last mile in wireline networks can be dedicated to an individual consumer, and potential network bottlenecks are typically at aggregation or interconnection points. In mobile wireless broadband networks, last mile capacity is inherently shared among users accessing the same base station sector antenna, which extends the potential for congestion to the access network. Mobile wireless broadband network users are, by definition, transient. For major, pre-planned events like the Presidential inauguration, it is possible to take steps to alleviate congestion in advance, but congestion is always a risk during spikes from sporting events, concerts, and

emergencies.[3] Usage during widespread emergencies can be particularly unpredictable, yet it is during emergencies that consumers value mobile wireless connectivity the most.

Moreover, while some utilize their devices for services that place little strain on the network (*e.g.,* emails), others either use the network for services that require low latency (*e.g.,* voice) and/or high bandwidth (*e.g.,* streaming video). The potential for video applications to materially slow mobile networks is of particular concern – imagine the strain on network resources had mobile broadband video services been widely-available as the tragic events of September 11, 2001 played out. Notwithstanding the best efforts of mobile network designers to meet consumer demand, it is inevitable that there will be periodic spikes in which demand exceeds supply at a given base station sector. These essential distinctions between wired and wireless networks must be considered when evaluating prioritization, pricing, and other issues related to network congestion on mobile wireless broadband networks.

Despite these key differences between wireless and wired networks, some would have the Commission believe that network congestion is a myth. For example, Free Press and New American Foundation argue that "the biggest hurdle to offering more powerful services on the Internet is not congestion, but rather delayed deployment of truly high-speed Internet access services."[4] According to these

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[3] *See* Matt Richtel, *Inauguration Crowd Will Test Cellphone Networks*, New York Times (Jan. 18, 2009) (available at http://www.nytimes.com/2009/01/19/technology/19cell.html).

[4] Notice of *ex parte* presentation, M. Chris Riley & Robb Topolski, *The Hidden Harms of Application Bias*, Free Press and New America Foundation, GN Docket No. 09-191 (FCC), at 1 (filed Nov. 9, 2009).

commenters, broadband service providers should simply "build a bigger pipe."[5] Where mobile wireless broadband is concerned, however, this argument is incongruous.[6]

The laws of physics dictate that mobile wireless broadband service providers cannot build infinite capacity into their networks to meet infinite demand. In its initial comments in the National Broadband Plan proceeding,[7] WCAI presented data regarding the dramatic increase in wireless data traffic and the need for additional spectrum – facts that have since been confirmed by the Commission.[8] Mobile data use is expected to grow 129% by 2013 (and data usage on AT&T Mobility's network has already increased by 5,000%),[9] but 4G technologies are expected to yield only approximately 50% additional capacity over 3G technologies.[10] Some additional capacity can be gained by cell-splitting, but there are practical and physical limits to the amount of additional capacity that can be gained by frequency re-use. Reasonable network management practices are critical to providing the quality of service that consumers demand, since additional spectrum and technological innovations alone will not solve the growing threat of congestion on mobile wireless broadband networks.

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[5] *Id*. at 7.

[6] WCAI takes no position regarding the accuracy of this statement as it applies to wired networks.

[7] Comments of WCAI, GN Docket No. 09-51 (FCC) (filed Jun. 8, 2009).

[8] See Commission Meeting Slides at 61-74 (Sep. 29, 2009) (available at http://www.fcc.gov/openmeetings/2009_09_29-ocm.html).

[9] *Id*. at slides 66, 71.

[10] *See* Mark Lowenstein, *Avoiding the 'AOL problem'*, Fierce Wireless (Oct. 27, 2009) (available at http://www.fiercewireless.com/story/avoiding-aol-problem/2009-10-27).

Mobile wireless broadband service providers are rapidly developing and deploying the most advanced technologies available. Clearwire currently provides 4G WiMAX service in 27 markets throughout the United States,[11] and plans to deploy in a total of 80 markets by year end.[12] Verizon Wireless has reportedly constructed trial LTE networks in Boston and Seattle, and expects that its LTE network footprint will cover 100 million people by the end of 2010.[13] AT&T Mobility recently upgraded its network to HSPA 7.2 technology, which provides theoretical peak throughput of 7.2 Mbps,[14] and is continuing to upgrade its backhaul network in preparation for the deployment of LTE technology in 2011.[15] Mobile wireless broadband service providers are thus aggressively deploying the most advanced wireless network technologies available at a cost of billions of dollars of capital investment. In the mobile wireless market segment, deployment of "truly high-speed Internet access services" cannot fairly be characterized as "delayed."

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[11] See News Release, *Clearwire to Launch First Metropolitan 4G Network in Malaga, Spain* (Jan. 8, 2010) (available at http://newsroom.clearwire.com/phoenix.zhtml?c=214419&p=irol-newsArticle&ID=1372805&highlight).

[12] Phil Goldstein, *Clearwire Looking at Multiple New Wholesale Partners*, Fierce Wireless (Jan. 8, 2010).

[13] Ceclia Kang, *Chat with Verizon Wireless CTO Lynch on end of all-you-can-eat pricing,* (Jan. 8, 2010) (available at http://voices.washingtonpost.com/posttech/2010/01/chat_with_verizon_wireless_cto.html).

[14] Phil Goldstein, *AT&T upgrades cell sites to HSPA 7.2 software*, Fierce Wireless (Jan. 6, 2010) (available at http://www.fiercewireless.com/story/t-upgrades-cell-sites-hspa-7-2-software/2010-01-06?utm_medium=rss&utm_source=rss&cmp-id=OTC-RSS-FW0).

[15] Press Release, *AT&T Upgrades 3G Technology at Cell Sites Across Nation* (Jan. 5, 2010) (available at http://www.fiercewireless.com/press-releases/t-upgrades-3g-technology-cell-sites-across-nation).

II. Defining traffic prioritization and usage-based pricing as *presumptively* discriminatory would deter investment, deter business model innovation, and disrupt existing business models.

For the reasons described above, mobile wireless broadband service providers will require flexibility in prioritization, pricing, and other network management policies to provide the best possible user experience to their subscriber bases as a whole. The rules proposed in the *NPRM*, however, appear to presume that traffic prioritization is discriminatory. Moreover, although the *NPRM* focuses on the potential adverse consequences of allowing carriers to charge content, applications and service providers for enhanced or prioritized access to the subscribers of the broadband Internet access service provider,[16] the *NPRM* goes so far as to seek comment on whether broadband service providers should be permitted to engage in usage based pricing of end users.[17]

As applied to mobile wireless broadband service providers, this approach would likely deter investment, limit business model innovation, and disrupt existing business models – all to the detriment of American consumers. What has made the Internet so successful to date is its ability to respond to consumer demand with innovative new paradigms. For example, the Kindle service uses an innovative new business model that provides 3G wireless connectivity to consumers for the limited purpose of downloading electronic books they have purchased from Amazon, without requiring the consumer to pay, or even have a relationship with, the

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[16] *See NPRM* at ¶ 106 ("106. We understand the term "nondiscriminatory" to mean that a broadband Internet access service provider may not charge a content, application, or service provider for enhanced or prioritized access to the subscribers of the broadband Internet access service provider").

[17] *See id.* at ¶ 137.

broadband service provider. Although there is nothing in the *NPRM* to suggest the Commission intends to outlaw this particular approach, it is not self-evident from the proposed rules that such a broadband access approach, available only to users of a particular device (the Kindle) and only when used for a particular purpose (downloading purchased electronic books), passes muster under a non-discrimination requirement.

And that is the problem with barring discrimination, even if the discrimination is reasonable and not at all anti-competitive. When an innovator considers a radical change in the way goods or services are delivered via broadband, reasonable, benign discrimination (such as that inherent in the delivery of e-books to the Kindle) is certainly possible, and the innovator must have clarity as to whether such discrimination is permitted. To offer an innovative service pursuant to the Commission's proposed net neutrality rules, however, innovators would first need to determine whether it would violate one of the net neutrality presumptions, and if so, whether the new service would otherwise fall within one of the exceptions. If the service provider will bear the burden of proof to show that an exception applies, they are likely to act with caution in making such an evaluation. To the extent there is any question as to whether a new service is consistent with the rules, innovators may be forced into the awkward position of asking the Commission for permission to innovate. At best, this delays innovation, and at worst innovation does not occur because of the time, money and public scrutiny of proprietary matters that would be required to secure Commission consent.

This is particularly problematic because the presumption in the *NPRM* that traffic prioritization and at least some pricing techniques are discriminatory goes too far. Discrimination within the meaning of the Communications Act is limited to circumstances in which like services are treated differently. So long as "like" types of traffic are treated similarly, there is no cognizable discrimination.[18]

III. The Commission cannot use its ancillary jurisdiction to adopt net neutrality rules for broadband providers that are *more* stringent than Title II regulation.

Because the D.C. Circuit Court of Appeals will soon address whether the Commission has jurisdiction over the Internet pursuant to its "ancillary" jurisdiction,[19] WCAI expresses no opinion on the extent of the Commission's authority over the Internet generally. For present purposes, WCAI's concern is that, if adopted as proposed, the Commission's net neutrality rules would impose restrictions on service providers that are impermissibly more stringent than those in Title II. At the heart of Title II is the prohibition of *unreasonable* conduct by common carriers: Section 201(b), for example, prohibits *unreasonable* "charges, practices, classifications, and regulations," while Section 202 prohibits "*unreasonable* discrimination" in "charges, practices, classifications, regulations, facilities, or services" of common carriers.[20] In proscribing unreasonable practices, however, Congress left common carriers latitude to make *reasonable* distinctions and discriminations in the provision of services.

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[18] *See* 47 U.S.C. §202(a).

[19] *See Comcast Corp. v. F.C.C.*, No. 08-1291 (D.C. Cir. Filed Sept. 4, 2008).

[20] 47 U.S.C. § 202(a) (emphasis added). Since the enactment of these provisions, scores of court cases have given shape to "reasonableness" in the specific application of these provisions.

The Commission's *NPRM* questions whether the approach taken in Section 202(a) goes far enough, but yet seems to eliminate all latitude for reasonableness in the net neutrality context except in connection with "network management."[21] Under the Commission's proposed approach, wireless broadband Internet access service providers would be strictly prohibited from making even *reasonable* distinctions unless it could be shown that such discriminations were related to network management. Because this is a far more narrow approach than that dictated by Congress for common carriers in Title II, the Commission lacks jurisdiction to impose such regulations on non-Title II mobile wireless broadband Internet access providers.

As noted above, Congress determined more than 70 years ago in Sections 201 and 202 of the Act that the best way to promote communications by wire and radio was to ensure that carriers did not act "unreasonably." The net neutrality rules proposed in the *NPRM* eliminate this reasonableness qualifier except by way of an exception limited to the relatively narrow scope of network management. If the FCC were allowed to read the word "reasonable" out of a nondiscrimination provision adopted pursuant to its ancillary authority that is otherwise substantively similar to existing Title II provisions, then the FCC would be able to exercise *more expansive authority* over non-common carriers pursuant to Title I than Congress has provided the FCC over common carriers pursuant to Title II. Such an interpretation of the FCC's jurisdiction would be manifestly inconsistent with the structure of the Communications Act itself and the clear intent of Congress.

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[21] See *NPRM* at ¶ 109.

IV. The Commission should apply a general standard of reasonableness to each of the proposed rules.

To remedy the concerns expressed above – discouraging investment and innovation and the lack of ancillary jurisdiction – the Commission should apply a general standard of "reasonableness" to each principle. Limiting the principles to unreasonable discrimination would bring them into accord with Title II of the Communications Act and the extensive body of judicial precedence interpreting it. Such rules would be more likely to withstand judicial scrutiny, and less likely to discourage investment and innovation or disrupt existing business models. At the same time, consumers would be more than adequately protected from any potential for unreasonable or anticompetitive discrimination from mobile wireless broadband service providers.

V. The Commission should adopt a market-based managed services exception.

Given the inherently shared and mobile nature of wireless broadband connections, the flexibility to employ traffic prioritization and usage-based pricing will be required to maximize efficient use of spectrum and ensure quality of service for particular latency-sensitive applications (*e.g.,* voice). An exception for managed services from net neutrality restrictions would enable mobile wireless broadband service providers to continue to employ innovative new business models without having to ask the Commission for permission. Voice services are an excellent example of a managed service for mobile wireless service providers. Voice customers expect the highest reliability of service available. Mobile wireless broadband service providers would be unable to meet these consumer demands

without having the ability to manage network access priorities for voice and other services.

The Commission should not attempt to define the managed services exception too narrowly. In regard to the Commission's request for specificity "about the current or likely future identity of such offerings,"[22] the dynamic nature of the Internet services makes such prediction impossible. And to the extent the Commission attempts to make such predictions, it will likely get them wrong. Instead, the Commission should define managed services in as general a manner as possible, and determine whether services meet the definition on a case-by-case basis.

For the same reasons, the Commission should also avoid attempting to define how much network capacity could be devoted to managed services. It is impossible in advance to allocate bandwidth among future services. To date there is no evidence that operators have allocated a disproportionate percentage of bandwidth to any particular service, and thus no reason to believe they would do so going forward. The market will discipline providers to allocate capacity between managed and unmanaged services in response to consumer demand.

VI. Requiring tethering would limit consumer choice and destroy current business models for mobile wireless devices.

The Commission should not impose a "tethering" requirement on mobile wireless broadband networks. Such a requirement would destroy current business models for mobile wireless devices and reduce consumer choice. This would harm

[22] *NPRM* at ¶150.

consumers, device manufacturers, applications providers, and mobile wireless broadband service providers.

A. The market for mobile broadband platforms has developed very differently than the wired Internet market.

In the *NPRM*, the Commission analogizes "tethering" to the residential landline context, where "broadband providers typically provide a modem that attaches to the network, but allow users freely to interconnect devices locally to the modem through an Ethernet or WiFi connection."[23] However, this analogy is of limited usefulness in the context of mobile wireless broadband, which is a separate product market from wired broadband. The diversity and dynamism afforded by mobility has produced a very different environment for mobile wireless broadband than the wired Internet. Only a few years ago, all mobile devices were known as "handsets," and had relatively limited Internet capabilities, if any. In just the last few years, however, the term "handset" has been relegated to a subset of the mobile device universe. There are now a number of different types of devices used to access the mobile broadband platform, including traditional voice-centric handsets, smartphones, netbooks, dongles, and e-readers and other embedded devices, all of which meet different consumer needs.

Handsets. Many consumers still prefer to use "traditional," voice-centric handsets. These consumers predominantly use their devices for voice calls and text messaging. They are satisfied with the limited Internet capabilities of their mobile devices and often prefer to access the Internet using a wired connection.

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[23] *NPRM* at ¶164.

Smartphones. Smartphones are capable of Internet browsing using familiar interfaces, albeit on a small screen, as well as voice calls and text messaging. They are defined almost as much by their OS as their manufacturer or vendor. These devices are now typically marketed as an integrated, managed service platform that includes the device, its OS, the ability to distribute client software onto the device, integration between the device-side and server-side elements of the platform, a third-party developer community, and an application store which was pioneered by Apple.

Netbooks. Netbooks (also called mini notebooks or subnotebooks) are a category of small, light and inexpensive laptop computers designed primarily to access web-based applications and perform general computing tasks. These devices often rely on low-cost, power-saving chips more similar to those used in smartphones than desktop PCs. Currently, most netbooks rely on Intel's Atom processor and run the Windows OS; however, "[t]he new breed of netbooks, built on cellphone innards, threatens to disrupt that oligopoly."[24] These new netbooks are typically based on the ARM or MIPS architectures (produced by multiple semiconductor manufacturers) and Linux operating system,[25] and some are implementing Google's Android OS[26] or newer (and separate) Chrome OS instead.[27]

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[24] Ashley Vance and Matt Richtel, *Light and Cheap, Netbooks are Poised to Reshape PC Industry*, New York Times (Apr. 1, 2009) (available at http://www.nytimes.com/2009/04/02/technology/02 netbooks.html?_r=1).

[25] *Id.*

[26] *See* Wikipedia, "Netbook" (available at http://en.wikipedia.org/wiki/Netbook).

[27] Wikipedia, "Google Chrome OS" (available at http://en.wikipedia.org/wiki/Chrome_os).

Although they were initially intended as replacements or companions for desktop PCs, netbooks also compete with smartphones. Most netbooks come with built-in Wi-Fi connections, and many netbooks come with built-in mobile broadband connectivity as well. This year AT&T started offering netbooks for $49.99 with a 3G service plan, which is derivative of the practice in Europe, where subsidizing 3G netbooks in this way is popular.[28] Other elements of the netbook business model are also derived from the smartphone segment. Intel just announced a developer program and application storefronts for independent software vendors and developers to encourage the creation of innovative applications for its Atom processor-based products and Moblin OS (as well as the Windows OS).[29]

Dongles. Dongles are primarily used to provide portable Internet access to laptop computers that lack mobile wireless broadband capability. This method of accessing mobile networks is more akin to typical, wired PC usage than a smartphone or even a netbook – dongle users tend to mirror their interactions on the PC and are less communications-centric than smartphone users.[30] This service is thus a competitor to Wi-Fi hotspot access and even traditional ISP services. With the deployment of next-generation networks, like Clearwire's WiMAX network, and

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[28] Luigi Lugmayr, *AT&T offers Netbooks with 3G Service*, I4U News (April 1, 2009) (available at http://www.i4u.com/article23969.html).

[29] Agam Shah, *Intel promotes app store model for netbooks*, Network World (Sep. 22, 2009) (available at http://www.networkworld.com/news/2009/092209-intel-promotes-app-store-model.html ?page=1).

[30] *See* Eliot Weinman, *Harnessing the Mobile Internet*, Yankee Group Research at 34 (2009).

radio capabilities built-in to laptops, like Intel's WiMAX chips, this trend is likely to accelerate.

Embedded Devices. Today virtually any device or thing can be connected wirelessly to the Internet, including automobiles, appliances, cameras, music devices, and e-book readers. Sometimes these communications are M2M, and sometimes they involve human interaction (*e.g.,* e-book readers). The key characteristic of embedded devices is that they are dedicated to handling a particular communications task.[31] One of the more popular embedded devices is the Kindle e-book reader offered by Amazon, which was the "most wished for" and "most popular" holiday gift at Amazon in December, 2009.[32] Kindle devices allow consumers to download electronic books using mobile wireless broadband connectivity with "no monthly fees, no annual contracts, and no hunting for Wi-Fi hotspots."[33] As noted above, from the consumer perspective, it is not being directly charged to use a 3G network to download an e-book with a Kindle device.

B. Different types of mobile wireless devices generate different capacity demands.

The Commission itself has recognized that the types of mobile wireless devices described above often generate very different capacity demands. At the Commission's September 29, 2009 open meeting, Commission staff presented data

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[31] *See* Wikipedia, "Embedded system" (available at http://en.wikipedia.org/wiki/Embedded_device).

[32] *See* Nathan Webster, *Kindle Is The Most Wished For & Most Popular Holiday Gift at Amazon*, The Cinema Post (Dec. 15, 2009) (available at http://www.thecinemapost.com/2009/12/15/kindle-is-the-most-wished-for-most-popular-holiday-gift-at-amazon/).

[33] *See* Amazon Kindle advertisement (available at http://www.amazon.com/Kindle-Wireless-Reading-Display-Generation/dp/B0015TG12Q/ref=amb_link_17989822_3?pf_rd_m=ATVPDKIKX0DER&pf_rd_s=center-1&pf_rd_r=011V1J0Y2XC0GPHVS0CZ&pf_rd_t=101&pf_rd_p=51296642&pf_rd_i=507846).

explaining that the average smartphone consumes 30 times more data than the average handset, and the average mobile PC consumes 450 times more data than the average handset.[34] Embedded devices like the Amazon Kindle, however, likely use *less* network capacity than a traditional handset.

Because different types of devices have different levels and patterns of consumption, mobile wireless broadband service providers are able to offer pricing plans tailored to the needs of those devices and the consumers that use them. For example, 3G wireless broadband connectivity can be included in the e-book purchase price charged by Amazon to consumers in connection with Amazon Kindle devices because e-book downloads consume limited amounts of network capacity, and because the access by the consumer is limited solely to that download. In contrast, a consumer who downloads an e-book using the Kindle application on the iPhone, which can also be used for data intensive web browsing, must pay at least the minimum monthly service charge for the iPhone, even if the consumer only wishes to download e-books. Thus, the ability to tailor pricing plans to the usage profiles of embedded devices allows mobile wireless broadband service providers to meet unique consumer needs at the lowest cost.

Requiring tethering would destroy the business cases for innovative wireless devices predicated on limited bandwidth requirements (*e.g.*, Kindle, OnStar, smart grid, etc.), and thus harm consumers. By imposing a "one-size-fits-all" business model on mobile wireless broadband service providers, consumers interested in

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[34] *See* Commission Meeting Slides at 70 (Sep. 29, 2009) (available at http://www.fcc.gov/openmeetings/2009_09_29-ocm.html).

participating only in particular segments of the mobile wireless broadband market would no longer enjoy the type of advantageous pricing currently offered with Kindle devices. With a tethering requirement, every Kindle device would become a radio access point that could turn any laptop into a "mobile PC" – a device that uses 450 times the data capacity of a traditional handset. In this scenario, a service provider subject to non-discrimination provisions would be forced to assume that the Kindle would be used in this way and would have to establish a pricing plan that reflects that level of usage. This would harm consumers who wish only to download e-books. Rather than being able to download e-books for free using a Kindle, consumers would be forced to pay for full, mobile Internet browsing capability they may not want or need.

Even assuming the analogy to the wired Internet is persuasive, mandating tethering capability for wireless devices would go well beyond what has been required in the wireline context. The Commission has not mandated the modem-based business model in the wireline context, and not every wireline device can connect through a broadband modem. For example, fax machines can interconnect with the wired data network, but do not necessarily allow other devices to connect through the fax machine. The modem model has arisen in the context of the wired Internet through market forces – *i.e.*, because consumers have demanded that particular model in that particular context – not because the Commission has mandated it.

Moreover, as noted above, mobile wireless broadband service providers face different capacity challenges than wired operators due to the inherently shared and

transient nature of mobile wireless broadband networks. There is already a growing gap between consumer demand and network capacity. Mandatory tethering would exacerbate the bandwidth burden that flat-rate smartphone, netbook, and laptop data plans already impose on the networks.

Finally, although it is unclear how a mandatory tethering requirement would be implemented, it would appear to require that device manufacturers and service providers include particular functionality in their devices. For example, the Commission asks whether service providers should be required to offer wireless modems that could be easily inserted into end-user devices.[35] Imposing this "cableCARD" like requirement would be a step backwards for the mobile wireless broadband industry and consumers. One of the advantages of embedded processing devices is their low cost and attractive form factor, both of which would be hindered by such a requirement.

CONCLUSION

WCAI stands ready and willing to work with the FCC to avoid the potential for unintended consequences in this proceeding.

Respectfully submitted,

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[35] *NPRM* at ¶166.