

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

In the Matter of )  
 ) WC Docket No. 07-52  
Broadband Industry Practices )  
 )

**COMMENTS OF CTIA – THE WIRELESS ASSOCIATION®**

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**I. INTRODUCTION AND SUMMARY**

CTIA – The Wireless Association® (“CTIA”)<sup>1</sup> hereby submits its comments in response to the Commission’s *Broadband Industry Practices* Notice of Inquiry (“NOI”).<sup>2</sup> The NOI seeks comment, *inter alia*, on the state of the broadband industry and whether regulatory intervention is appropriate. As many of the issues addressed by the NOI are also being addressed in the Commission’s proceeding on the Skype Petition,<sup>3</sup> CTIA attaches to this filing a copy of its Opposition to the Skype Petition, for reference in support of the arguments made below. CTIA believes at this time that no Internet regulation is necessary in the competitive wireless industry.

CTIA is pleased to report explosive growth of wireless broadband offerings and

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<sup>1</sup> CTIA – The Wireless Association® is the international organization of the wireless communications industry for both wireless carriers and manufacturers. Membership in the organization covers Commercial Mobile Radio Service (“CMRS”) providers and manufacturers, including cellular, Advanced Wireless Service, broadband PCS, and ESMR, as well as providers and manufacturers of wireless data services and products.

<sup>2</sup> See *Broadband Industry Practices*, Notice of Inquiry, WC Docket No. 07-52 (2007) (“*Broadband Industry Practices NOI*”).

<sup>3</sup> See Petition to Confirm a Consumer’s Right to Use Internet Communications Software and Attach Devices to Wireless Networks, Skype Communications S.A.R.L., RM-11361 (filed Feb. 20, 2007) (“Skype Petition”).

competition. Regulatory intervention is unnecessary to ensure consumers have a choice of access providers and access to a wide array of content and applications of their own choosing.

Imposition of net neutrality obligations on mobile wireless broadband providers would harm consumers and undermine wireless networks. Indeed, as a review of the application of the Commission’s Broadband Policy Statement principles to wireless indicates, in each case, application of a particular principle is either unnecessary or would result in affirmative harm to wireless consumers. Moreover, because the objectives of the Broadband Policy Statement – competition, innovation, and consumer access to content and applications of their own choosing – have already been achieved in the wireless industry, the Commission need take no further action.

## **II. “NET NEUTRALITY” IS A SOLUTION IN SEARCH OF A PROBLEM IN THE COMPETITIVE WIRELESS INDUSTRY**

With respect to wireless broadband service, “net neutrality” not only remains a solution in search of a problem, but actually threatens to deprive consumers of the benefits of the robust competition in the wireless industry – continued innovation, increasing choice and affordable prices – and the build-out of wireless broadband networks. In launching the NOI, the Commission stated that one of its purposes was to determine “whether consumer choice of broadband providers is sufficient to ensure that all policies benefit consumers” or whether “any regulatory intervention is necessary.”<sup>4</sup> The answer to the first question is “yes” and the second is “no.” The wireless broadband market is exceedingly competitive. The mobile wireless and mobile wireless broadband markets are not characterized by any competitive harm or market failure that warrants a remedy. Accordingly, regulatory intervention is not appropriate.

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<sup>4</sup> *Broadband Industry Practices NOI* at ¶ 1.

In 1993, Congress amended the Communications Act to revise fundamentally the statutory system of licensing and regulating wireless telecommunications services and to implement its “general preference in favor of reliance on market forces rather than regulation.”<sup>5</sup> As the Commission has noted, the broad goal of that action was “to ensure that economic forces – not disparate regulatory burdens – shape the development of the CMRS marketplace.”<sup>6</sup> In the Telecommunications Act of 1996, Congress extended this free market regulatory approach to the Internet by establishing that “[i]t is the policy of the United States ... to preserve the vibrant and competitive free market that presently exists for the Internet and other interactive computer services, unfettered by Federal or State regulation.”<sup>7</sup> These provisions instruct the Commission not to intervene in the wireless and broadband markets unless there is evidence of a market failure or competitive harm and a regulatory solution is available that will improve the net welfare of the consuming public.

Proponents of “net neutrality” are unable to identify a competitive harm or market failure that warrants a remedy and therefore they fail to meet their burden. Both the broadband market, and wireless broadband market more specifically, are exceptionally competitive. As documented in the Commission’s recent *High-Speed Services for Internet Access* report, multiple competing platforms – asynchronous digital subscriber line (“DSL”), synchronous DSL, cable modem, traditional wireline, satellite, fixed wireless, mobile wireless, fiber, and powerline – continue to

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<sup>5</sup> See *Petition of New York State Public Service Commission To Extend Rate Regulation*, Report and Order, 10 FCC Rcd 8187, ¶ 18 (1995); Omnibus Budget Reconciliation Act of 1993, Pub. L. No. 103-66, Title VI, § 6002 (1993) (codified in principal part at 47 U.S.C. § 332).

<sup>6</sup> *Implementation of Sections 3(n) and 332 of the Communications Act*, Third Report and Order, 9 FCC Rcd 7988, ¶ 4 (1994).

<sup>7</sup> 47 U.S.C. § 230(b)(2).

enter and thrive in the competitive broadband marketplace.<sup>8</sup> Indeed, 1,323 broadband providers offered Internet access as of June 2006.<sup>9</sup> Additionally, the report reflects that 87.5 percent of ZIP codes have between three and ten or more providers of high-speed lines as of June 2006.<sup>10</sup> And more than 19 percent of ZIP codes have ten or more providers of high-speed lines operating in them.<sup>11</sup> Moreover, the report notes that “[h]igh-speed lines (or wireless channels) connecting homes and businesses to the Internet at speeds that exceed 200 kbps in *at least one* direction increased from 51.2 million lines to 64.6 million lines during the first half of 2006.”<sup>12</sup> The recent report also documents the rapid geographical expansion of services offered by multiple high-speed broadband access providers.<sup>13</sup>

CTIA is particularly proud of the rapid deployment and continuing growth of wireless service providers in the broadband marketplace. The wireless industry is composed of more than 160 different wireless providers including the “national” carriers such as AT&T, Sprint Nextel, Verizon Wireless, and T-Mobile USA; carriers with a significant regional presence, such as Alltel, U.S. Cellular, Dobson Communications, and SunCom; and more than 140 carriers competing to serve consumers in smaller markets.<sup>14</sup> Collectively, these carriers have established

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<sup>8</sup> See *High-Speed Services for Internet Access: Status as of June 30, 2006*, released January 31, 2007, at [http://hraunfoss.fcc.gov/edocs\\_public/attachmatch/DOC-270128A1.pdf](http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-270128A1.pdf), at Tables 1, 7, 8 and 15 (“*2006 High-Speed Services Report*”).

<sup>9</sup> See *id.* at Table 7.

<sup>10</sup> See *id.* at Table 15.

<sup>11</sup> See *id.*

<sup>12</sup> *Id.* at 2 (emphasis in original).

<sup>13</sup> See *id.* at Map attached to Table 16.

<sup>14</sup> Additionally, the wireless industry has seen the emergence of successful Mobile Virtual Network Operators (“MVNOs”) such as Virgin Mobile USA, TracFone, Disney Mobile, and

a competitive national footprint, and according to the Commission, 98 percent of all Americans live in counties where at least three wireless carriers compete for subscribers, and 94 percent of Americans live in counties with four or more wireless competitors.<sup>15</sup> Many of these carriers have deployed wireless broadband services and the latest generations of wireless technologies to consumers at an exceptional pace. Indeed, in the *High-Speed Services* report, the Commission notes that while total broadband lines grew 26 percent from December 2005 to June 2006,<sup>16</sup> almost 60 percent of all new high-speed lines reported during the same period were mobile wireless broadband lines,<sup>17</sup> outpacing the additions for traditional telephone companies and cable companies combined. This was a significant increase from the last half of 2005 when 35 percent of new broadband subscribers were mobile wireless broadband subscribers.<sup>18</sup>

Moreover, the significant growth in the wireless broadband access market has been nationwide, providing consumers from all across the country with a wide range of wireless broadband options. The Commission recently explained that Code Division Multiple Access

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Jitterbug. MVNOs provide service offerings that are tailored to niche markets and specific demographic groups, such as young professionals, families, and Hispanic consumers. MVNOs have proven to be remarkably successful since their beginning in 2003, almost tripling their subscribership from 4.7 million to 13.4 million subscribers.

<sup>15</sup> See *Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993 Annual Report and Analysis of Competitive Market Conditions With Respect to Commercial Mobile Services*, Eleventh Report, WT Docket No. 06-17, ¶ 41 (2006), available at [http://hraunfoss.fcc.gov/edocs\\_public/attachmatch/FCC-06-142A1.pdf](http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-06-142A1.pdf) (“*Eleventh CMRS Report*”).

<sup>16</sup> See *2006 High-Speed Services Report* at 2.

<sup>17</sup> See *id.* at Table 1. See also *id.* at Map 1, in Appendix A.

<sup>18</sup> See *High-Speed Services for Internet Access: Status as of December 31, 2005*, released July 26, 2006, at [http://hraunfoss.fcc.gov/edocs\\_public/attachmatch/DOC-266596A1.pdf](http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-266596A1.pdf), at Table 1 and Chart 1.

(“CDMA”) 1xRTT and/or 1x Evolution – Data Optimized (“EV-DO”) networks now serve counties containing roughly 99 percent of the population.<sup>19</sup> General Packet Radio Service (“GPRS”), Enhanced Data for GSM Evolution (“EDGE”), and/or WCDMA/HSDPA (Wideband CDMA/High-Speed Downlink Packet Access) networks serve counties containing approximately 94 percent of the population.<sup>20</sup> And at the time the FCC collected its data, higher speed technologies, EV-DO and WCDMA/HSDPA, served counties containing 63 percent and 20 percent of the population, respectively.<sup>21</sup> The competition among wireless broadband providers and the number of high-speed wireless broadband access options continue to rapidly increase as CTIA’s members significantly expand and upgrade their nationwide broadband networks and as more spectrum becomes available for wireless broadband as a result of the Advanced Wireless Services and 700 MHz auctions. Some of the larger networks and planned upgrades include:

- **Alltel:** AccessSM Broadband service (EV-DO) offers speeds of 400-700 kbps (in more than 100 cities, covering 44 million pops).
- **AT&T Mobility:** BroadbandConnect (HSDPA) service offers speeds of 400-700 kbps (165 cities, including 73 of the top 100 markets).
- **Sprint Nextel:** EV-DO service offers speeds of 400-700 kbps (covering more than 200 million pops now, rising to 280 million by YE2008). The EV-DO Revision A (“Rev. A”) network now covers more than 95 million people, and expansion of network upgrade continues. Rev. A offers upload speeds of 350-500 kbps, and download speeds up to 600 kbps-1.4 Mbps.
- **T-Mobile USA:** Offers mobile Internet access through its GPRS/EDGE network, with a typical EDGE download speed of 100 kbps, and operates a network of more than 8,000 wireless hotspots; T-Mobile’s HSDPA network is currently in deployment.
- **Verizon Wireless:** EV-DO-based broadband service offers speeds of 400-700 kbps (in

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<sup>19</sup> See *Eleventh CMRS Report* at ¶ 117.

<sup>20</sup> See *id.*

<sup>21</sup> See *id.*

242 cities, covering 200 million pops). Verizon is upgrading to EV-DO Rev. A. Moreover, mobile web use in the United States is unrivaled in almost any country. The United States trails only the United Kingdom in the number of mobile web users, according to a recently published study by Bango.Net Limited, a number that is increasing at a dramatic pace.<sup>22</sup>

Undeniably, the rapid build-out of new and innovative facilities-based wireless broadband access services, along with the expansions of other broadband providers, provides consumers with the incomparable benefits of a competitive market. Prices for wireless broadband service remain low while the speeds and varieties of wireless broadband options steadily increase. As CTIA discusses below, with several wireless broadband access options available to most consumers, and more options coming online almost daily, there is no empirical evidence of anticompetitive behavior or harms to wireless consumers warranting regulatory intervention, and the possibility of market failure in the future is exceptionally low.<sup>23</sup> Regulatory intervention would only impede the continued growth of the highly-competitive broadband services market. Instead, the Commission should maintain its procompetitive, “light touch” approach to broadband regulation, especially to wireless broadband.

### **III. THE FCC SHOULD NOT OVERLOOK THE UNIQUE ATTRIBUTES OF SPECTRUM-BASED BROADBAND SERVICES**

In order to achieve the NOI’s objective of “understanding . . . the nature of the market for

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<sup>22</sup> See Press Release, Bango.Net Ltd., *Mobile Web Use in the US Surges Ahead with Three Fold Increase in Last 12 Months* (June 5, 2007), available at [http://bango.com/news/pressreleases/143\\_mobilewebgrowth.aspx](http://bango.com/news/pressreleases/143_mobilewebgrowth.aspx).

<sup>23</sup> See, e.g., Michael L. Katz, “Measuring Competition Effectively,” May 10 2004; Marius Schwartz and Federico Mini, “Hanging up on *Carterfone*: The Economic Case Against Access Regulation in Mobile Wireless,” May 2, 2007; Robert W. Hahn, Robert E. Litan, and Hal Singer, “The Economics of “Wireless Net Neutrality,” AEI Brookings Joint Center Related Publication 07-10, April 2007.

broadband and related services;”<sup>24</sup> the Commission should recognize the different characteristics of competing broadband platforms and, particularly, those characteristics which make the wireless platform unique. At the core, the distinguishing characteristic of wireless broadband is the use of radio spectrum. Mobile wireless broadband access is available whenever and wherever the consumer needs it, be it for work, play, commerce, health or personal safety. This mobility is possible because wireless communications are conducted through the transmission of radio frequency (“RF”) energy through the radio spectrum rather than by wire. As a technical matter, wireless and wireline communications differ in fundamental ways which make application of any net neutrality obligations designed for wireline communications, an ill-fit for wireless.

First, wireless is a shared network medium. Unlike traditional wired broadband where each user has a dedicated pipe to their home, the wireless user must share the available bandwidth with other users – both voice and data users – in their vicinity.<sup>25</sup> A few users running applications that consume large amounts of bandwidth (“bandwidth hogs”), or poor handset performance and inefficient vocoders, can result in fewer connections per cell, or the need for increased cells to maintain capacity.<sup>26</sup> Artificially and arbitrarily limiting carriers’ ability to manage their networks and the devices their networks must support would undermine the performance of those networks, the operation of the devices they support and degrade

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<sup>24</sup> See *Broadband Industry Practices NOI* at ¶ 1.

<sup>25</sup> See Opposition of CTIA – The Wireless Association®, RM-11361, at Exhibit C – “Wireless Handsets Are Part of the Network” by Charles L. Jackson, at 3.1.1 (filed Apr. 30, 2007) (“Jackson Technical Statement”); see also Marius Schwartz and Federico Mini, “Hanging up on *Carterfone*: The Economic Case Against Access Regulation in Mobile Wireless,” p. 19, May 2, 2007.

<sup>26</sup> See *id.*

consumers' overall wireless broadband experience. Condemning wireless carriers to providing a shoddy product seems absurd given the FCC's stated objective of wanting to spur wireless broadband deployment. Wireless consumers demand quality of service and will not tolerate a wireless broadband experience that is anything less than stellar.

Second, optimizing the user experience in a shared setting requires dynamic coordination of multiple variables impacting the network experience. Like any network operator, a wireless operator has limited tools to manage its scarce resource. A wireless operator must manage network resources so that all customers sharing those resources receive a reasonable quality of service.<sup>27</sup> Wireless consumers use spectrum in a shared environment where the elements of the network dynamically allocate resources based upon a number of factors including spectral efficiency of the handset, the number of users connected to a cell site, and the particular application for which the handset is requesting spectrum.<sup>28</sup> Although wireless users are not actually sharing a call, the spectrum over which the call or wireless Internet connection is made, is shared, and when one wireless user has a less efficient handset than other users on the network, or is using an inordinately bandwidth intensive application as compared to the other network users, the entire network and all consumers on it suffer. It seems patently unfair to allow the desires of the few to undercut the needs of the many. Therefore, wireless carriers need the ability to manage the real-time dynamics of their RF network and the devices that connect to, and interact, with them, as they have for more than 15 years much to the benefit of their customers.

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<sup>27</sup> Robert W. Hahn, Robert E. Litan, and Hal Singer, "The Economics of "Wireless Net Neutrality," AEI Brookings Joint Center Related Publication 07-10, p. 24, April 2007.

<sup>28</sup> See Jackson Technical Statement at 3.1.

Third, radio transmissions in a shared spectrum environment are susceptible to and may create electromagnetic interference. Unlike the wireline environment, where faulty equipment or mis-use of the network impairs a single user's experience, a non-compliant wireless device can negatively impact the user, fellow-users on the same network, and users of competing networks and services in the same or adjacent spectrum bands. While industry standards and generally applicable regulation – such as the Commission's frequency-specific service rules and equipment certification program – help to partially address interference concerns, they are incomplete solutions. Carrier-specific interference management practices, tailored to their individual networks and the technologies and devices they support, are essential to mitigating interference and maximizing spectral efficiency. Regulatory constraints on carriers' flexibility to manage interference could undermine existing, successful practices that ensure that American consumers derive the maximum benefits from finite spectrum resources.

#### **IV. WIRELESS BROADBAND CONSUMERS HAVE ACCESS TO THE CONTENT OF THEIR CHOICE**

The exceptionally competitive broadband marketplace has been more than capable of providing consumers with a wide range of competing options designed to meet their specific demands, without the need for “net neutrality” prescriptions. Indeed, no empirical problems or actual market failures have been identified – particularly in the wireless broadband market – that warrant regulatory intervention.

The absence of blocking conduct is a direct result of vibrant competition in the wireless broadband marketplace that gives providers strong, market-based incentives to provide subscribers with access to whatever legal content they desire. Unquestionably, if a broadband provider were to engage in content blocking, that provider's customers would quickly migrate to one of the more than four competitors in their area who would be more than happy to provide

unfettered Internet access. Wireless carriers differentiate themselves on the manner and quality of content access, as well as by tailoring their offerings around particular content of interest to discrete classes of users. In terms of wireless broadband access technologies, carriers offer consumers a choice of 3G technologies (*e.g.*, EV-DO and HSDPA ) with 4G technologies (*e.g.*, WiMAX, Long-Term Evolution (“LTE”), and Ultra-Mobile Broadband (“UMB”)) in advanced development and deployment planning. Other carriers include WiFi as part of their service offering. Web offerings are available in both a carrier-mediated “on portal” environment, as well as “off-portal” through mobile web browsers offering an unfettered navigation experience. And mobile virtual network operator (“MVNO”) offerings cater to the content preferences and stylings of every conceivable taste, from child-friendly Disney Mobile to senior-focused Jitterbug.

## **V. WIRELESS CONSUMERS HAVE ACCESS TO THE NON-HARMFUL APPLICATIONS OF THEIR CHOICE**

Consumers today have unprecedented access to an array of applications that are downloadable and usable on a growing list of mobile wireless devices. Wireless carriers – and network operators – carefully balance consumers’ insatiable desires for increased functionality with the need to ensure a user experience that is second to none.

Entitling consumers to run *any* application of their choice would expose wireless broadband networks to a variety of threats. First, such a principle would open up the network for abuse by “bandwidth-hogs.” Wireless users that run applications requiring large amounts of bandwidth such as streaming media or peer-to-peer applications degrade network performance and have the potential, if unregulated, to completely block service for other users. Peer-to-peer applications like BitTorrent, which is a frequently used program for sharing and downloading larger video files, are particularly disruptive because they require large amounts of bandwidth

and also access the Internet when they are both active *and* idle. Specifically, peer-to-peer services often rely on distributed databases to maintain the presence of users and materials available on the networks. Distributed databases use all of the connected users as nodes of the network and send each other signals to indicate when users “near” them in the network have logged in, logged out, or have begun to transfer data.<sup>29</sup> Enabling bandwidth hogs to run these applications unconditionally and unchecked would seriously impair wireless network functionality and degrade quality of service for other users.

An application access obligation also could expose wireless broadband networks to denial of service attacks and other problems caused by malware. Malware and mobile viruses have become more prevalent as society has widely adopted smart phones.<sup>30</sup> Because wireless broadband users will increasingly turn to these PC-styled devices, the threat of attacks to wireless networks will only increase. Therefore, wireless broadband providers must have the authority to manage the types of applications that run on their network, so they can minimize potential threats. If the Commission stripped wireless providers of the ability to manage application use, mobile viruses and malware would spread rapidly.

Allowing consumers to run any application of their choice also may degrade quality of service because wireless broadband consumers may not always gauge the full impact their applications have on the network at large. As discussed above, wireless broadband use occurs over a shared-network medium. Many wireless users, however, do not understand this

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<sup>29</sup> See Salman A. Baset and Henning Schulzrinne, “An Analysis of the Skype Peer-to-Peer Internet Telephony Protocol,” Columbia University (Sept. 15, 2004).

<sup>30</sup> *Increasingly Vital Wireless Devices Are Vulnerable to Attack, Security Pros Say*, COMMUNICATIONS DAILY, Mar. 22, 2007 (reporting that “security researchers have discovered over 400 mobile viruses over the last two years,” as well as mobile phishing and spam).

shared-network principle and would not realize that the use of certain applications could damage overall network functionality. By the time a carrier could detect the network impairment and pinpoint the cause, it would be too late. The harm will have already occurred. Further, significant questions exist regarding, for example, (1) thresholds for a carrier's determination of harm to the network, (2) what actions could be taken to resolve the harm, (3) what (and how) enforcement of that determination of harm would occur, and (4) would such enforcement involve the Commission. These are but a few of the questions that arise in the context of an application access obligation, but they are by no means comprehensive. The Commission should expect that wireless broadband users will run bandwidth-heavy applications or applications infected with malware without a full understanding that these programs hurt the overall network. Thus, wireless broadband providers must retain discretion over the types of applications that run on their networks in order to minimize operational and security threats that could affect all users of the network.

## **VI. THERE IS NO COMPETITIVE OR TECHNICAL BASIS FOR IMPOSING DEVICE CONNECTION OBLIGATIONS ON WIRELESS**

As the record in the Skype proceeding<sup>31</sup> demonstrates, consumers have access to an unprecedented variety of mobile wireless devices. In the competitive wireless industry consumers ultimately drive carrier handset decisions. While some consumers want handsets that offer the most number of new and innovative features that the technology will bear, others may prefer to receive a handset with a minimal set of features.<sup>32</sup> Ultimately, it should be up to consumers and the competitive market to determine what features they want and carriers should

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<sup>31</sup> See Skype Petition.

<sup>32</sup> See Jitterbug, <http://www.jitterbug.com>; Firefly, <http://www.fireflymobile.com>.

have the freedom to give them what they ask for.<sup>33</sup> Indeed, there currently are about 700 wireless handsets on the market in the United States. The record in the Skype proceeding also demonstrates that requiring wireless carriers to allow consumers to connect their choice of legal devices would produce major harms without any underlying policy justification. The weight of the record in the Skype proceeding clearly establishes that such a requirement is both unnecessary from a market harm standpoint and would be detrimental to consumers and the public interest.

Comparisons between the monopoly market of the *Carterfone*-era and the wireless market of today are completely inapposite, and there is no need to impose a device connection obligation on wireless providers. As shown above, today's wireless services market boasts intense and growing competition for customers between national and regional companies.<sup>34</sup> These companies offer a variety of different services utilizing broadband technology, allowing consumers to choose the service that best fits their needs.<sup>35</sup> Furthermore, the Commission has consistently found that the wireless services market is competitive and is producing significant consumer benefits.<sup>36</sup>

The wireless equipment market is also highly competitive. There are numerous equipment manufacturers that compete to offer a range of 3G phones and other devices with the

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<sup>33</sup> Robert W. Hahn, Robert E. Litan, and Hal Singer, "The Economics of "Wireless Net Neutrality," AEI Brookings Joint Center Related Publication 07-10, at 34, April 2007.

<sup>34</sup> *See supra* Part I.

<sup>35</sup> *See id.*

<sup>36</sup> *See Eleventh CMRS Report at ¶¶ 2-3; Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993, Annual Report and Analysis of Competitive Market Conditions with Respect to Commercial Mobile Services, Tenth Report, 20 FCC Rcd 15908, ¶¶ 3-4 (2005).*

newest features: including Wi-Fi capability, advanced Bluetooth, music downloading, advanced browsing and other features that facilitate wireless broadband usage.<sup>37</sup> Manufacturers are constantly entering the market and introducing innovative new devices, like Apple's iPhone.<sup>38</sup> Moreover, no U.S. wireless service provider is also an equipment manufacturer. Thus, competitive harms from vertical integration between service providers and equipment manufacturers like those that existed when *Carterfone* was imposed on wireline providers are non-existent in this market. Regulatory intervention is unnecessary in this market that continues to bring innovative equipment, applications, and service offerings to consumers.

In addition to being unnecessary, establishing an obligation that carriers support all devices could be detrimental to the public interest. Such an obligation would essentially dissociate wireless handsets from the wireless networks. The resulting operational realities could be particularly harmful to providers and consumers.

It is important to note that wireless devices do not simply "attach" to wireless networks, but are rather a component of the network itself.<sup>39</sup> As Verizon Wireless noted in its comments to the Skype Petition, "a wireless network is comprised of both cell sites *and* mobile stations" and "a network's effective coverage areas can only be defined in relation to the design and power levels" of the fixed and mobile portions of that network.<sup>40</sup> Moreover, wireless providers are

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<sup>37</sup> See Opposition of CTIA – The Wireless Association®, RM-11361, at 17-19 (Apr. 30, 2007); Comments of AT&T, RM 11361, at 50 (Apr. 30, 2007); Comments of LG Electronics MobileComm USA, RM-11361, at 3 (Apr. 30, 2007); Comments of Sprint-Nextel, Inc., RM-11361, at 5-6 (Apr. 30, 2007).

<sup>38</sup> Comments of Verizon Wireless, RM-11361, at 11 (Apr. 30, 2007).

<sup>39</sup> See Jackson Technical Statement at 41-43.

<sup>40</sup> See Comments of Verizon Wireless, RM-11361, at 30 (Apr. 30, 2007) (emphasis in original).

responsible for ensuring that the operation of mobile devices on their networks do not cause harmful interference to other users and must comply with numerous social obligations imposed by the Commission. Dissociating handsets from their networks would make these tasks more difficult and lead to significant public interest harms.

Wireless service providers work extensively with equipment manufacturers to ensure excellent service quality on their networks. These efforts are aimed at ensuring that there is no in-band or out-of-band interference and are also designed to ensure that provider-approved devices work optimally on their associated networks through the use of vocoders and over-the-air service and provisioning.<sup>41</sup> In the Skype proceeding, parties provided substantial evidence that introducing numerous unknown and uncertified devices onto the network could lead to increased interference on the customer's own network and on competitor networks, impairing service for other users.<sup>42</sup> One commenter provided a startling real-world example in which a single piece of unauthorized equipment "negatively impacted nearly 200 surrounding cell sites within the New York Metropolitan area, which resulted in tens of thousands of blocked calls."<sup>43</sup> The introduction of more unauthorized devices as a result of a requirement to support any device would lead to more interference, which will be difficult to isolate and eliminate and could degrade service for a multitude of wireless users.

In addition, unlike the wired world in which the technical specifications of the network

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<sup>41</sup> See Comments of Sprint-Nextel, RM-11361, at 7-13 (Apr. 30, 2007).

<sup>42</sup> See Comments of Verizon Wireless, RM-11361, at 33 (Apr. 30, 2007); Comments of Motorola, Inc., RM-11361, at 9 (Apr. 30, 2007).

<sup>43</sup> Comments of Verizon Wireless, RM-11361, at 34-35 (Apr. 30, 2007); CTIA has also evidenced the dangers of unauthorized repeaters and jammers. See CTIA White Paper on the Harmful Impacts of Unauthorized Wireless Repeaters, WT Docket 03-264 (filed May 15, 2006)

and the method of network connection are standardized and long-established, the Commission has encouraged the use of competing technologies and standards in the wireless world.<sup>44</sup>

Because commercial wireless companies in the United States utilize different air interface standards, compatibility problems would arise if the third Broadband Policy Statement policy principle were applied. For example, a customer that wants to use an UMTS/HSPA-only compatible device on an EV-DO network would not be able to do so. This problem is not easily remedied, however, because adding multi-mode, multi-band functionality to all phones would be expensive and would unnecessarily drive up consumer device costs.<sup>45</sup>

Dissociating handsets from the network also could lead to a number of public interest harms unrelated to interference or air interface standards. Specifically, a requirement to support any device would make it extremely difficult to comply with and enforce a number of social policy goals that the Commission has imposed, at least in part, upon carriers. For example, E911 regulations require that, as of December 31, 2005, 95% of handsets on carrier networks have GPS functionality.<sup>46</sup> If wireless providers are required to open their networks to any device, this E911 mandate becomes “problematic if not unenforceable.”<sup>47</sup> Hearing aid compatibility, another Commission mandate upon carriers,<sup>48</sup> presents similar problems.

Finally, a requirement to support all devices would also present problems for carriers’

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<sup>44</sup> See Comments of Sprint-Nextel Corporation, RM-11361, at 8 (Mar. 30, 2007).

<sup>45</sup> See Reply Comments of CTIA, RM-11361, at 8 (May 15, 2007).

<sup>46</sup> 47 C.F.R. § 20.18 (2007).

<sup>47</sup> See Comments of Sprint-Nextel, Inc., RM-11361, at 20-23 (Mar. 30, 2007); Comments of Verizon Wireless, RM-11361, at 35-39 (Apr. 30, 2007); Opposition of CTIA – The Wireless Association, RM-11361, at 42 (filed Apr. 30, 2007).

<sup>48</sup> 47 C.F.R. § 20.19.

public safety and law enforcement obligations. For example, one commenter in the Skype proceeding noted that the Warning, Alert and Response Network Act (“WARN Act”), adopted by Congress in 2006, requires the Commission to help establish a standard that could be built into wireless handsets and ensure that those handsets can receive and transmit government alerts regarding public safety emergencies.<sup>49</sup> The implementation of that standard “is premised on wireless carriers’ ability, through the close integration of the network and handset, to provide a seamless capability to deliver warnings to customers over their device using a messaging format.”<sup>50</sup> This integration and, therefore, the success of the WARN Act system is threatened by a requirement to support every device. With regard to law enforcement initiatives, there is a potential that carriers would be unable to efficiently provide call identifying information or call content for requesting agencies, as required by CALEA.<sup>51</sup> In light of the fact that there is no market failure or other competitive-basis for extending a device attachment obligation to wireless, undertaking these significant risks is particularly unwise.

## **VII. THERE IS NO COMPETITIVE BASIS FOR ESTABLISHING A “NONDISCRIMINATION” PRINCIPLE**

In the *NOI*, the Commission asks whether it should incorporate a new principle of nondiscrimination into the BPS.<sup>52</sup> The Commission should not incorporate a principle of nondiscrimination for several reasons. First, such a principle would go well beyond any nondiscrimination requirement that has applied historically under Title II. Second, an obligation

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<sup>49</sup> See WARN Act, Pub. L. No. 109-347, § 604, 120 Stat. 1884 (2006).

<sup>50</sup> See Comments of Verizon Wireless, RM-11361, at 35-36 (Apr. 30, 2007).

<sup>51</sup> See *id.* at 37-39.

<sup>52</sup> See *Broadband Industry Practices NOI* at ¶ 10.

not to “discriminate” in the broadband world is administratively unworkable. Third, there is no competitive harm or market failure to justify imposition of a nondiscrimination requirement.

**A. A Nondiscrimination Principle in the Broadband Arena Would Go Well Beyond the Nondiscrimination Obligation Under Title II.**

Those advocating adoption of a nondiscrimination principle have suggested that such a principle as applied to broadband services would be consistent with the “nondiscrimination obligations that attach to telecommunications traffic and which were vital to keeping the Internet open in the dial-up era”<sup>53</sup> CTIA respectfully disagrees with this suggestion.

Historically, the principle of nondiscrimination as applied to telecommunications services offered by common carriers, as set forth in Section 202 of the Act, governs a carrier’s relationship with its customers.<sup>54</sup> As one federal court recently explained, “[t]he bottom line is that the focus of a § 202 inquiry is on discrimination among customers” of the common carrier, not third parties.<sup>55</sup> Furthermore, the hallmark of the discrimination prohibition in section 202 is

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<sup>53</sup> See *id.* (Concurring Statement of Commissioner Michael Copps).

<sup>54</sup> See 47 U.S.C. § 202.

<sup>55</sup> *Z-Tel Communications, Inc. v. SBC Communications, Inc.*, 331 F. Supp.2d 513, 556 (E.D. Tex. 2004); accord, *Petition for Forbearance of the Indep. Tel. & Telecomms. Alliance*, Sixth Memorandum Opinion and Order, 14 FCC Rcd 10840, ¶ 10 (1999) (“section 202 of the Act ... prohibits unreasonable discrimination among customers and rates that are unjust and unreasonable”); *Bundling of Cellular Customer Premises Equip. and Cellular Serv.*, Notice of Proposed Rule Making, 6 FCC Rcd 1732, ¶ 2 n.2 (1991) (“Section 202(a) of the Act prohibits carriers from discriminating unreasonably among customers in the ‘charges, practices, classifications, regulations, facilities, or services’ for ‘like’ communications service.”). Although the Commission decided to forbear from applying certain Title II common carrier requirements to CMRS providers, wireless carriers are still subject to the nondiscrimination requirements of 47 U.S.C. § 202. *Implementation of Sections 3(n) and 332 of the Communications Act, Regulatory Treatment of Mobile Services*, Second Report and Order, 9 FCC Rcd 1411, ¶ 176 (1994).

the requirement that the alleged victims of discrimination be “similarly situated.”<sup>56</sup>

Here, a nondiscrimination principle in the broadband context would obliterate these concepts. First, the nondiscrimination principle sought by net neutrality advocates purportedly seeks to require that a broadband provider treat all content or data the same regardless of its source – *i.e.*, a bit is a bit – and would seemingly prevent a broadband provider from giving priority to any content or data. Second, the “similarly situated” limitation would be rendered meaningless under a nondiscrimination principle. Customers, content owners, application providers, and Internet service providers would all be lumped together and expected to be treated the same, even though these are very different and hardly similarly situated entities.

Such an approach would constitute an unwarranted expansion of the nondiscrimination principle applicable to common carriers under Title II, even assuming a nondiscrimination principle in the broadband arena were workable or warranted, which is not the case.

**B. A Nondiscrimination Principle Is Administratively Unworkable in the Broadband World.**

Attempting to identify “discrimination” in the broadband world would be administratively unworkable. As one scholar recently noted, management of broadband networks is “complicated,” and efforts to distinguish between performance problems resulting from undesirable forms of discrimination and ones due to other causes would “inevitably lead to some difficult line-drawing” and would create an enforcement regime that would be “costly” and

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<sup>56</sup> See *William G. Bowles Jr. P.E. d/b/a Mid Missouri Mobilfone v. United Telephone Company of Missouri*, Memorandum and Order, 12 FCC Rcd 9840, ¶¶ 20-22 (July 11, 1997); see also *Digital Cellular, Inc., Petition for Declaratory Ruling Regarding a Primary Jurisdiction Referral from the United States District Court for the Central District of California*, Memorandum Opinion and Order, 14 FCC Rcd 8218, ¶ 16 (May 19, 1999).

prone to “errors.”<sup>57</sup>

For example, has a wireless broadband provider engaged in “discrimination” if a music video downloads faster from a site that has tailored the video for wireless applications than from a site that has not? Would a wireless broadband provider be “discriminating” against content stored on a remote server in Bangladesh that does not download as quickly as content stored on a server on the provider’s network? These questions are only the proverbial tip of the iceberg in illustrating the nearly impossible task that would confront wireless broadband providers in seeking to comply with any nondiscrimination principle.

**C. There Is No “Competitive Harm” or “Market Failure” That Would Warrant Adoption of a Nondiscrimination Principle.**

As discussed in greater detail in Section I, *supra*, the wireless industry is an exceptionally competitive industry, and consumers enjoy the greatest number of choices among services, devices and calling plans in the entire telecommunications industry. As CTIA has pointed out to the Commission in another proceeding, over the last 15 years, the wireless industry has evolved to a highly efficient, competitive industry, and that competition has produced incredible consumer benefits.<sup>58</sup> In this case, the Commission has not identified or substantiated any competitive harm. Regulation without a specific finding of a competitive harm will drive away the investment the industry needs to continue to build the infrastructure, design the devices, and operate the evolving networks needed to sustain consumer demand for advanced mobile services.

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<sup>57</sup> E. Felten, *Nuts and Bolts of Network Neutrality*, at 10, Princeton University Center for Information Technology Policy (July 6, 2006), *available at* <http://itpolicy.princeton.edu/pub/neutrality.pdf> (noting the “good policy argument in favor of doing nothing and letting the situation develop further,” as “time will teach us more about what regulation, if any, is needed”).

<sup>58</sup> *See* Opposition of CTIA – The Wireless Association, RM-11361, at 5 (filed Apr. 30, 2007).

Similarly, there is no “market failure” that broader application of a fifth nondiscrimination principle is necessary to address. The Internet and the wireless industries continue to grow and evolve, and there is no reason for the Commission to impose a nondiscrimination principle that would restrict the growth or evolution of either, unless a real marketplace failure is identified.<sup>59</sup> Therefore, the Commission should (again) resist calls to supplant competition and market discipline with prescriptive regulation.

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<sup>59</sup> As Benjamin E. Hermalin and Michael L. Katz conclude, imposing nondiscrimination obligations on competitive firms is likely to be harmful because application providers that would otherwise have purchased a low-quality variant are excluded from the market, while applications “in the middle” of the market utilize a higher and more efficient quality; and applications at the top utilize a lower and less efficient quality than otherwise. Total surplus may rise or fall, although the analysis suggests that harm to welfare is likely. See Benjamin E. Hermalin and Michael L. Katz, *The Economics of Product-Line Restrictions With an Application to the Net Neutrality Debate*, February 2007 available at <http://www.aei.brookings.org/admin/authorpdfs/page.php?id=1362&PHPSESSID=4b9d22294cd6f83b612a8a68ae03a5da>.

## VIII. CONCLUSION

The U.S. broadband market is vigorously competitive due, in part, to the emergence of wireless as a competitive broadband platform. No competitive harm or market failure has been identified which warrants regulatory intervention. Net neutrality regulation, as applied to wireless, is either unnecessary or would produce affirmative harms. Accordingly, the Commission should decline to impose content, application, or device access obligations on wireless broadband providers or to adopt a new nondiscrimination principle.

Respectfully submitted,

CTIA - The Wireless Association®

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