

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

In the Matter of	)	
	)	
Federal-State Joint Board on	)	WC Docket No. 05-337
Universal Service Seeks Comment on	)	
Long Term, Comprehensive High-Cost	)	CC Docket No. 96-45
Universal Service Reform	)	

**COMMENTS OF CONSUMERS UNION,  
CONSUMER FEDERATION OF AMERICA AND FREE PRESS**

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## SUMMARY

Free Press, Consumers Union, and Consumer Federation of America submit these comments in response to the Federal-State Joint Board on Universal Service's request for input into the issue of long-term, comprehensive high-cost universal service reform. As consumer advocates, we strongly support the USF programs that have delivered essential communications services to low-income households, rural areas, schools, libraries, and rural health clinics. We recognize the fiscal crisis of falling receipts and expanding expenses in the program demands reform. Yet we view the Fund's present predicament as both a threat and an opportunity. We believe that as communications technologies evolve, universal service must evolve with it. We support the expansion of USF support to broadband as the organizing principle to overhaul both the contribution and distribution systems.

The debate over USF reform is complex, and there are dozens of difficult questions to resolve. But we urge the Joint Board and the Commission to stand firmly on the ideals articulated in the Communications Act of 1934 and reaffirmed in 1996. The cornerstone of this legislation is the commitment to providing communications services to every American household, without regard to geography or income, at an affordable rate and a robust quality of service. The legislative history of Section 254 indicates that Congress has already committed to expanding universal service support to broadband networks. Not only should we do this, we cannot afford to delay.

In these comments we provide evidence that the support of advanced telecommunication networks was a key aspect of the Fund as envisioned by Congress in the 1996 Act. The staggering rural-urban digital divide, and the lack of affordable

broadband offerings is the exact outcome that Congress intended the Act to prevent. We also offer evidence that broadband service irrefutably meets the four criteria of Section 254(c)(1), which guides the definition of supported services. We urge the Commission to act with expediency to carry out Congress' vision of an evolving and modernizing fund. Time is of the essence. In many cities well over half of the households subscribe to broadband, but in rural towns and other high-cost areas these critical services have yet to be deployed. This disparity has real world economic and social consequences for millions of American businesses and families.

There is no magic formula for solving the Fund's problems. But it is possible to modernize the fund without jeopardizing its solvency. Reform of contributions by expanding the revenue base in a technologically and competitively neutral manner is a wise idea. Digital convergence has erased many of the distinctions relied upon to calculate support over the past decade.

After a transition period, USF eligible carriers should be broadband compatible. Congress created the fund to evolve and change over time. In a 21<sup>st</sup> century digital world it makes no sense to support 19<sup>th</sup> century technology. Encouraging migration to broadband will spawn greater efficiency and promote innovation.

We believe the size of the Fund must be disciplined through careful oversight and accountability, market incentives, and strategic investment in infrastructure. We urge caution before implementing a system of reverse auctions, as there appears to be little evidence that this reform will have its intended effect. Ultimately we agree that redundant support that is intended to promote competition may in some cases actually be a net harm to consumers. Viewed through this lens, the support of *infrastructure* is the

appropriate role for the Fund. Open access can then be the policy that promotes competition, ultimately benefiting consumers by lowering service prices and enticing more customers to subscribe. This in turn lowers the amount of support that is necessary to maintain the critical infrastructure.

We strongly encourage the Joint Board and the Commission to uphold the remarkable and progressive commitment to Universal Service that is the foundation of U.S. communications policy. Expanding the Fund to broadband is an essential step on our path to reforming the system by maximizing the return on public investment and regaining our position as a global leader in technology and communications.

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Consumers Union, Consumer Federation of America and Free Press (collectively, “CU et al.”), respectfully submit these Joint Comments in response to the request for comment by the Federal-State Joint Board on Universal Service (“Joint Board”), FCC 07J-2, released May 1, 2007 by the Federal Communications Commission (“FCC” or Commission”).<sup>1</sup>

**I. INTRODUCTION**

**A. Interest and Expertise of Commenters**

Consumers Union, the publisher of Consumer Reports<sup>®</sup>, is an independent, nonprofit testing and information organization serving only consumers. CU does advocacy work from four offices in New York, Washington, San Francisco, and Austin. CU’s public policy staff addresses a broad range of telecommunications, media and other policy issues affecting consumers at the regional, national and international level. CU

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<sup>1</sup> We would like to thank Avra van der Zee of Georgetown Law School’s Institute for Public Representation for valuable analysis, research and insight into these very complex issues.

staff members frequently testify before Federal and state legislative and regulatory bodies and participate in rulemaking activities at the Commission and elsewhere.

The Consumer Federation of America is an advocacy, research, education and service organization established in 1968. CFA has as its members some 300 nonprofit organizations from throughout the nation with a combined membership exceeding 50 million people. As an advocacy group, CFA works to advance pro-consumer policy on a variety of issues before Congress, the White House, federal and state regulatory agencies, state legislatures, and the courts.

Free Press is a national nonpartisan organization working to increase informed public participation in crucial media policy debates, and to generate policies that will produce a more competitive and public interest-oriented media system with a strong nonprofit and non-commercial sector.

## **II. DISCUSSION**

### **A. The Communications Act is Based Upon The Principle of Universal Service. The Act is Intended to Prevent the Development of Digital Divides Between Rich and Poor Americans, and Between Rural and Urban Americans. This Principle Should Guide The Joint Board's and Commission's Actions**

As the Joint Board looks to resolve the thorny problems of reforming the Universal Service system, we urge it to base its deliberations in the principles that lie at the base of the Communications Act (“the Act”). The purpose of the Act was to regulate communications networks “so as to make available, so far as possible, to all the people of the United States, without discrimination on the basis of race, color, religion, national

origin, or sex, a rapid, efficient, Nationwide, and world-wide wire and radio communications service with adequate facilities at reasonable charges.”<sup>2</sup>

This principle—strongly reaffirmed in 1996—is the simple, powerful, and fundamentally progressive commitment to universal, affordable access to communications services for all Americans. It is this policy that has brought telecommunications to schools, libraries, rural health facilities, low-income households, and rural areas at reasonable rates and adequate quality of service. The vital importance of this program is clear to anyone who has ever lived rural America or struggled to make ends meet. The economic case for affordable access is clear, and research produced by consumer groups has been documenting it for many years.<sup>3</sup>

The public policy commitment to ubiquitous communications has never been more important than now. Standing in the midst of an information technology revolution, we cannot and should not abandon or weaken our guarantee of universal, affordable access.

The communications marketplace has changed substantially since 1996, when Congress established the Universal Service Fund (“the Fund”). This marketplace has also changed since 2003, when the Joint Board and the Commission last updated its list of

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<sup>2</sup> 47 U.S.C. §151

<sup>3</sup> See for example the work of Mark Cooper: “Disconnected, Disadvantaged, Disenfranchised: Explorations in the Digital Divide,” Consumer Federation of America and Consumers Union, October 2000, <http://www.consumersunion.org/pdf/disconnect.pdf>; Also, “Expanding the Digital Divide and Falling Behind on Broadband,” Consumer Federation of America and Consumers Union, October 2004, <http://www.consumersunion.org/pub/ddnewbook.pdf>.

supported services.<sup>4</sup> While the needs of our society and economy have evolved, the USF *has not* evolved. This lack of modernization is troubling, but partially understandable given the legal, economic and technological complexities surrounding this issue. However, the labyrinthine complexity of the Fund must not be allowed to blind the Commission and the Joint Board from the bottom line: Broadband is now, undeniably, the essential communications medium of the 21<sup>st</sup> Century. Broadband networks are the “adequate facilities” that we must provide to all Americans at “reasonable charges.”

The Joint Board and the Commission should look to reform the Fund both to address its long-term stability and to use it to bridge the broadband digital divide. The cornerstone of this policy historically, and now, must be a commitment to bringing affordable service to average citizens. At the time of the Communications Act of 1934, telephone penetration rates were around 40%—very similar to where we currently stand with broadband.<sup>5</sup> The vision that inspired a policy that brought that telephone penetration rate above 90% must now be applied to high-speed Internet access.

**B. Congress Explicitly Stated that Universal Access to Advanced Telecommunication Services is a Key Principle of the USF**

The Joint Board seeks comment on whether it should “consider adding broadband to the list of supported services” that are supported by the universal service fund (“the

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<sup>4</sup> *In the Matter of Federal-State Joint Board on Universal Service*, Order and Order on Reconsideration, FCC 03-170, CC Docket No. 96-45, July 10, 2003.

<sup>5</sup> See Mark Cooper, “Universal Service: A Historical Perspective and Policies for the Twenty-First Century,” Consumer Federation of America and the Benton Foundation, 1996.

Fund”).<sup>6</sup> However, the question that the Joint Board and the Commission should be contemplating is not *if* broadband should be added, but *when*? This is because the Congress has already answered the “if” question in the affirmative, having done so in the Telecommunications Act of 1996 (“The Act”) when it established the statutory framework for the Fund.

In the Act, Congress articulated a set of six specific principles that the Joint Board and the Commission are to use to guide their policymaking in this area. Three of these six guiding principles mention “advanced telecommunications and information services”, stating that “[a]ccess to advanced telecommunications and information services should be provided in all regions of the Nation”<sup>7</sup>; that “[c]onsumers in all regions of the Nation, including low-income consumers and those in rural, insular, and high cost areas, should have access to telecommunications and information services, including interexchange services and advanced telecommunications and information services, that are reasonably comparable to those services provided in urban areas and that are available at rates that are reasonably comparable to rates charge for similar services in urban areas”<sup>8</sup>; and that “[e]lementary and secondary schools and classrooms, health care providers, and libraries should have access to advanced telecommunications services...”<sup>9</sup>

The term “advanced telecommunications capability” is subsequently defined in the Act as “high-speed, switched, broadband telecommunications capability that enables

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<sup>6</sup> *Federal-State Joint Board on Universal Service Seeks Comment on Long Term, Comprehensive High-Cost Universal Service Reform*, Federal Communications Commission, WC Docket No. 05-337, CC Docket No. 96-45, FCC 07J-2, May 1, 2007.

<sup>7</sup> 47 U.S.C. § 254(b)(2)

<sup>8</sup> 47 U.S.C. § 254(b)(3)

<sup>9</sup> 47 U.S.C. § 254(b)(6)

users to *originate and receive high-quality voice, data, graphics, and video* telecommunications using any technology” (emphasis added).<sup>10</sup>

This language leaves little doubt that Congress intended the Commission to use the Fund to promote the universal deployment of *broadband*, the advanced telecommunication and information technology that enables users to originate and receive data intensive communications. Indeed, this intention is made even more explicit in the accompanying reports to the various individual bills that comprised the Act.

For example, the Committee Report accompanying H.R. 1555 (The Communications Act of 1995) explains the language that eventually became the second principle of universal service (§254(b)(2)), stating, “the Joint Board should recommend a definition of the nature and extent of services included within the carriers' obligations to provide universal service. The Committee included this provision *to make certain that the definition of universal service is considered in light of the functions and capabilities of the telephone network as it evolves* and as the state of competition within the local telephone industry advances” (emphasis added).<sup>11</sup> Similar language is included in the Senate report that accompanied S. 652 (The 1996 Act), which also stated in reference to the Joint Board’s implementation of the six principles underlying universal service that, “[t]he plan should also seek to promote access to advanced telecommunications services and reasonably comparable services between rural and urban areas.”<sup>12</sup>

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<sup>10</sup> § 706(c) of the Telecommunications Act of 1996, Pub. L. 140-104, 110 Stat. 56 (1996) (“The Act” or “1996 Act”).

<sup>11</sup> House Report on H.R. 1555, 104 H. Rpt. 204, July 24, 1995.

<sup>12</sup> Senate Report on S. 652, 104 S. Rpt. 230, February 1, 1996.

In a statement that accompanied the House bill, Reps. Markey, Studds and Klink stated, “[w]e believe that there must be a process to ensure that as change and competition are introduced into the local telephone market, *that the long-standing policy of universal service not only endures but is updated to evolve with the rapid changes in the communications industry.* We commend the authors of the legislation for embracing this important telecommunications policy principle” (emphasis added).<sup>13</sup>

The language of “evolving” technology is a key theme of the universal service provisions contained within the Act. In §254(c) Congress provided a definition of “universal service”, stating that in general “[u]niversal service is an evolving level of telecommunications services that the Commission shall establish periodically under this section, taking into account advances in telecommunications and information technologies and services.”<sup>14</sup>

The record is clear. Congress intended to have the Commission use the Fund to make advanced telecommunications technology available to all Americans, and directed the Commission to modernize the Fund in step with technological advances. Thus, it is surprising that over a decade later the Commission still has yet to include “advanced telecommunication services” as one of the advanced telecommunications services it is bound by law to use the Fund to support. This logical disconnect is seen in the

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<sup>13</sup> House Report on H.R. 1555, 104 H. Rpt. 204, July 24, 1995.

<sup>14</sup> 47 U.S.C. § 254(c)(1)

Commission's most recent refusal to update the USF, where it "decline[d] to expand the definition of supported services to include advanced or high-speed services."<sup>15</sup>

The Joint Board and the Commission's unwillingness to include advanced telecommunication services in the USF are due to their interpretations of section 254(c)(1) of the Act. This section defines the concept of universal service, and gives the Commission and the Joint Board criteria to use to guide the evolving definition of supported services. However, section 254(c)(1) and its criteria are *subsequent* to the Congressional commitment to supporting universal access advanced telecommunications and information services in Section 254 (b). The conditions in Section 254 (c)(1) are not meant to *modify* the previously defined set of services that *already* fall under the principles of USF support ("telecommunications and information services, including interexchange services and advanced telecommunications and information services"), but rather the *next generation* of services, such as wireless telephony. In this analysis, the FCC may use its discretion to expand the scope of USF to broadband in ways it has not chosen to do in the past.

The current Commission is clearly not inclined to embrace this interpretation of the Act. The decision to include or exclude broadband from USF will be entirely based on the fulfillment of the criteria of section 254(c)(1). However, while the Joint Board and the Commission may have been able to justify the exclusion of advanced services from USF in 2003 using these criteria, the facts have changed enough since then to warrant a reversal of this decision.

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<sup>15</sup> *In the Matter of Federal-State Joint Board on Universal Service, Order and Order on Reconsideration, FCC 03-170, CC Docket No. 96-45, July 10, 2003 ("2003 Order").*

### **C. The Inclusion of Broadband as a Supported Service is Currently Warranted Under All Four Criteria of Section 254(c)(1)**

The four criteria that guide the Joint Board and the Commission's definition of supported services are stated in section 254(c)(1). The Act directs the Joint Board and the Commission to consider the extent to which such telecommunications services are: (A) "essential to education, public health, or public safety"; (B) "have, through the operation of market choices by customers, been subscribed to by a substantial majority of residential customers"; (C) "are being deployed in public telecommunications networks by telecommunications carriers"; and (D) "are consistent with the public interest, convenience and necessity."<sup>16</sup> The FCC stated that each criteria must be considered, "but not each necessarily met, before a service may be included within the general definition of universal service, should it be in the public interest."<sup>17</sup>

Although the Act explicitly requires the FCC to incorporate an evolving level of services, the FCC did not include broadband in the definition of high-speed and advanced services in 1997. In the *2003 Order*, the FCC found that high-speed and advanced services did not meet the requirements for inclusion as a supported service because the services were not "essential" for the purposes "of education, public health, and public safety" and were "not subscribed to by a substantial majority of residential consumers."<sup>18</sup>

The FCC also expressed concern that the public interest would not be served by

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<sup>16</sup> 47 U.S.C. §254 (c)(1)

<sup>17</sup> See *Federal-State Joint Board on Universal Service, First Report and Order*, 12 F.C.C. Rcd. 8776, 8809 (1997) ("*First Report and Order*"). The FCC lists the following services as eligible for universal service support: voice grade access to the public switched network, local usage, DTMF signaling or its functional equivalent, single party service, access to emergency services, access to operator services, access to inter-exchange services, access to directory assistance and toll limitations services for qualifying low income consumers. *Ibid.*

<sup>18</sup> *2003 Order*, 18 F.C.C. Rcd. at 15,095.

expanding the definition because of the high cost of deployment and lack of technological neutrality.<sup>19</sup>

In a separate joint statement, Commissioners Abernathy and Adelstein noted that the decision to refrain from adding advanced services to the list of supported services “should in no way cast doubt on the importance of such services to rural America” but emphasized that a substantial majority of residential consumers have not yet subscribed and that this criterion was important for permitting “our universal service programs to reflect advances in the marketplace.”<sup>20</sup> Commissioner Copps, on the other hand expressed disappointment with the majority’s conclusion “that advanced services are not essential for educational, public health or public safety purposes.”<sup>21</sup> Commissioner Copps emphasized that “Congress recognized the increasing importance of advanced services when it commanded the Commission and our counterparts to encourage the deployment of advanced telecommunications capability on a reasonable and timely basis to all Americans” and that Congress also provided the Joint Board and the Commission with the guiding principle that “access to advanced telecommunications and information services should be provided in all regions of the Nation.”<sup>22</sup>

Since the *2003 Order*, the critical role of broadband in education, health and safety has become more apparent, the percentage of subscribers and rate of growth has increased substantially, and the far-reaching benefits for consumers and the economy

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<sup>19</sup> *Ibid.*

<sup>20</sup> *2003 Order*, Joint Statement of Commissioners Kathleen Q. Abernathy and Jonathan S. Adelstein, at 2.

<sup>21</sup> *Ibid.* (Copps, C., approving in part, concurring in part) (referencing Section 706’s mandate that the F.C.C. encourage the deployment of advanced telecommunications capabilities).

<sup>22</sup> *Ibid.*

have become clear. In fact, at a recent hearing before the Senate on the USF, Commissioners Tate and Copps and the three other members of the Federal-State Joint Board on Universal Service emphasized the increasingly integral role of broadband in the lives of Americans and acknowledged that the FCC has the authority, considering the four criteria, to find that broadband is an eligible service.<sup>23</sup>

**i. The Process for Modifying the Definition of Supported Services is Time Consuming. The Commission Has The Authority to Act Without A Prior Recommendation from the Joint Board**

Section 254(c) established the Federal-State Joint Board to recommend changes to the FCC to modify the list of supported services “from time to time” in order to “take into account advances in telecommunications and information technology.”<sup>24</sup> But the Act confers ultimate authority on the FCC to decide what level of service constitutes “universal service,” stating: “[u]niversal service is an evolving level of telecommunications services that the *Commission* shall establish periodically under this section...” (emphasis added).<sup>25</sup> The Act also requires that the FCC, within a month of enactment of the statute, refer to the Joint Board a proceeding to make initial recommendations regarding implementation of the USF and the definition of services.<sup>26</sup> Following the initial recommendation, however, the statute *permits* rather than *requires*

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<sup>23</sup> The *Universal Service Hearing* before the Senate Committee on Science, Commerce and Transportation, March 1, 2007. Witnesses included Commissioner Copps; Commissioner Tate; Larry Landis, Commissioner of the Indiana Utility Regulatory Commission; John Burke, Board Member Vermont Public Service Board; and Billy Jack Gregg, Director Consumer Advocate Division, Public Service Commission of West Virginia.

<sup>24</sup> *Federal-State Joint Board Recommended Decision*, Appendix to Notice of Proposed Rulemaking, 18 F.C.C. Rcd. 2932, 2941 (“*Recommended Decision*”); *see also* 47 U.S.C. § 254(c) (“The Joint Board may, from time to time, recommend to the Commission modifications in the definition of the services that are supported by Federal universal service support mechanisms.”).

<sup>25</sup> 47 U.S.C. § 254(c)(1).

<sup>26</sup> 47 U.S.C. § 254(a).

the Joint Board to recommend modifications. Specifically, the Act states: “The Joint Board may, from time to time, recommend to the Commission modifications in the definition of the services that are supported by Federal universal service support mechanisms.”<sup>27</sup>

Because the statute confers ultimate authority on the Commission and states that the Board may, rather than must, recommend Commission modifications, it appears the FCC can act without first referring the matter to the Board. Nonetheless, because the procedure has *traditionally* involved three separate steps, the process is time-consuming. First, the FCC refers the matter to the Federal State Joint Board. Second, the Joint Board issues a public notice seeking comment and then provides the FCC with its recommended decision. Third, the FCC issues a notice of proposed rulemaking seeking comment and then ultimately issues a report and order adopting any changes.<sup>28</sup> This three-step process is time-consuming; a member of the Federal-State Joint Board staff recently stated at the Senate Hearing on Universal Service that *if the FCC acts today, the minimum amount of time it will take to change the definition is two years* because the FCC will refer the matter to the Federal-State Joint Board to make recommendations before proceeding.

## **ii. Broadband is Essential to Education, Public Health, and Public Safety**

In its 2003 Order, the Commission stated that it “recognizes that high-speed and advanced services may enable subscribers to access Internet resources used for

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<sup>27</sup> 47 U.S.C. § 254(c)(2).

<sup>28</sup> See First Report and Order, 12 F.C.C. Rcd. at 8781; see also Federal-State Joint Board on Universal Service, 15 F.C.C. Rcd. at 25258; Federal-State Joint Board on Universal Service Seeks Comment on Review of the Definition of Universal Service, 66 FR 46461 (rel. Aug. 21, 2001).

educational, public health, or public safety purposes. At this time, however, we do not find that advanced or high-speed services are *essential* to reaching these resources.”<sup>29</sup>

The FCC relied on the Joint Board’s findings that: 1) many such resources are available through other means, such as by voice telephone or dial-up connections; and 2) students have significant access to advanced telecommunications services at schools and libraries.<sup>30</sup>

In the four years since the 2003 Order, the integral role broadband plays in educational, public health, and public safety has become increasingly apparent. Although the Act enumerates that the service must be “essential to education, public health, *or* public safety,” broadband is now undisputedly essential to all three. In addition, it has become evident since 2003 that alternative means of connecting to the Internet – through either access outside the home at schools or libraries or access from the home through dial-up connections– fails to enable access to many of the most critical educational, health, and public safety opportunities.

*Education.* Broadband provides critical opportunities for integrated learning, for worker training, and for educational opportunities.<sup>31</sup> In retaining the current list of core services, the *2003 Order* emphasized that students have significant access to advanced telecommunications services at schools and libraries. However, educators have recognized the importance of extending learning to students wherever they are as learning

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<sup>29</sup> *2003 Order.*

<sup>30</sup> *Ibid.*

<sup>31</sup> *See Achieving Universal Broadband, Alliance for Public Technology 21, 2007, (“APT Report”)*

more often than not continues outside of school.<sup>32</sup> Fewer than half of the students in U.S. colleges and universities, for example, are housed on campus<sup>33</sup> and thus would have diminished library access. In addition, in a 2001 survey of 754 students between the ages of 12 and 17, a vast majority of Internet users reported that their primary access was from home, a number that has surely increased substantially in the six years hence.<sup>34</sup> Only about 11 percent of Internet users in this survey reported that their primary access was from school.<sup>35</sup>

In addition to benefiting older students, broadband access permits parents of younger children to stay involved in their children's education. The Internet is the communication tool that allows parents to remain up-to-date on what is happening with their children in the classroom.

Perhaps most fundamentally, broadband access provides the potential to minimize the disparity in educational opportunities between urban and rural children. With broadband access, a child in a rural region or inner-city neighborhood can have access to the same universe of information as a child in the most affluent suburb.<sup>36</sup> The use of educational software, e-mail, and educational websites from the home has been linked to

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<sup>32</sup> *Broadband America: An Unrealized Vision*, EDUCAUSE Broadband Policy Working Group, (July 2004), available at [www.broadbandforhighereducation.org/background.html](http://www.broadbandforhighereducation.org/background.html).

<sup>33</sup> *Ibid.*

<sup>34</sup> Amanda Lenhart et al., *The Internet and Education*, Pew Internet & American Life Project, 3 (September 2001), available at [http://www.pewinternet.org/pdfs/PIP\\_Schools\\_Report.pdf](http://www.pewinternet.org/pdfs/PIP_Schools_Report.pdf).

<sup>35</sup> *Ibid.*

<sup>36</sup> <http://www.benton.org/index.php?q=node/5026#fn1>.

higher achievement in mathematics after controlling for family background characteristics (including parental education).<sup>37</sup>

For the educational benefits to accrue, students and parents must have access to *high-speed* Internet from the home. A student with dial-up cannot access the same scope of material as the student with a broadband connection. While it would take a student with dial-up an hour to download the latest version of AOL, it would take two minutes with a high-speed line of about 1.5 MB to download the same software.<sup>38</sup> A broadband connection also permits a student to watch the latest CNN report, to access radio stations outside his or her area of service, and to download educational video files.<sup>39</sup>

Public Health. Broadband provides critical opportunities for “*telehealth*”, defined generally as the use of advanced telecommunication technologies to exchange health information and provide health care services across geographic, temporal, social, and cultural barriers.<sup>40</sup> First, interactive and instantaneous contact between health professionals and patients allows for remote monitoring, disease management, and effective emergency response.<sup>41</sup> This is especially critical in rural communities where smaller peripheral communities are dependent upon the larger village for public health, emergency and community services and where the Internet provides a primary means for

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<sup>37</sup> <http://www.nsf.gov/statistics/seind06/c1/c1s4.htm#c1s4I2>.

<sup>38</sup> Raymond Shih Ray Ku, *Open Internet Access and Freedom of Speech: A First Amendment Catch-22*, 75 TUL. L. REV. 87, 100 (2000).

<sup>39</sup> *Ibid.*

<sup>40</sup> *See*

<http://www.aafp.org/online/en/home/aboutus/specialty/rural/telemed/telehealth.htm> for definition of telehealth; APT Report, *supra* note 30, at 11.

<sup>41</sup> *Speed Matters: Affordable High Speed Internet for All*, Communications Workers of America Policy Paper, available at [www.speedmatters.org](http://www.speedmatters.org).

distributing information.<sup>42</sup> In fact, a 2001 Report by the Benton Foundation found that a shortage of medical personnel is a significant problem for many American communities: 111 counties in the US had no physicians at all, half a million residents live in a county where there is no doctor trained to provide obstetrics care, and 49 million live in counties with no psychiatrist.<sup>43</sup> Broadband allows citizens of these more remote communities access to critical medical services. For example, Commissioner Copps provided the following example in his testimony at the Universal Service Hearing: “Not long ago, I visited an Inuit village in Alaska, totally unreachable by road, where a sick child with an ear infection could be examined by a doctor hundreds of miles away.”<sup>44</sup>

Second, telecare and related assistive technology creates enormous potential for healthcare cost savings. Telecare enables older and disabled Americans to remain in their own homes rather than in hospital care. One study estimates that faster roll out of residential broadband technologies would save \$15 billion a year by 2020 in reduced usage of long-term care facilities by senior citizens.<sup>45</sup> Overall, policies designed to accelerate the use of broadband could save seniors and disabled Americans more than \$800 billion by 2030 in reduced health care costs by delaying institutionalized living, reducing medical costs by enabling more effective disease management, and facilitating

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<sup>42</sup> See e.g., *Comments of the Regulatory Commission of Alaska Comment*, In the Matter of Federal-State Joint Board on Universal Service, CC Docket N. 96-45, 6 (rel. November 9, 2001).

<sup>43</sup> See *Summary on Universal Service*, Benton Foundation, available at <http://www.benton.org/PUBLIBRARY/Updates/summary.html>.

<sup>44</sup> *Testimony of F.C.C. Michael Copps*, U.S. Senate Committee on Commerce, Science and Transportation Hearing on Universal Service, March 1, 2007.

<sup>45</sup> Robert E. Litan, *Great Expectations: Potential Economic Benefits to the Nation From Accelerated Broadband Deployment to Older Americans and Americans with Disabilities*, New Millennium Research Council (December 2005), available at [http://www.newmillenniumresearch.org/archive/Litan\\_FINAL\\_120805.pdf](http://www.newmillenniumresearch.org/archive/Litan_FINAL_120805.pdf).

additional output generated by seniors and individuals with disabilities in the labor force.<sup>46</sup> The potential for cost-savings for senior medical care is particularly critical as the Baby Boomer population enters retirement; by 2015, the population of Baby Boomers, whose per capita health care expenditures are more than twice those of younger adults,<sup>47</sup> will be 77 million.<sup>48</sup> Yet according to the study, the enormous cost savings resulting from telehealth over broadband could not be achieved with dial-up; broadband enables “‘real time’ communication between patients and providers of medical care in a way that would be much less convenient or even impossible in a ‘dial-up’ world” through remote monitoring or two way communication between patients and providers.<sup>49</sup>

Third, broadband enables consumers to access critical health information and make informed health care decisions. According to a survey by Manhattan Research, the number of U.S. adults who reported using the Internet to seek health information increased from 41 million in 2001 to 116 million in 2006. In addition to more general medical information, broadband enables consumers to research information about prescription drugs. Seventy million U.S. adults searched online for pharmaceutical information in 2006.<sup>50</sup> Another recent study found that 33 million Americans visited prescription Web sites in the third quarter of 2006, an increase of 13 percent from a year before. Fifty-three percent of these visitors to prescription drug sites reported seeking

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<sup>46</sup> *Ibid.*

<sup>47</sup> S. R. Collins, K. Davis, C. Schoen, M. M. Doty, and J. L. Kriss, *Health Coverage for Aging Baby Boomers: Findings from the Commonwealth Fund Survey of Older Adults*, The Commonwealth Fund (January 2006), available at [http://www.cmwf.org/publications/publications\\_show.htm?doc\\_id=340370](http://www.cmwf.org/publications/publications_show.htm?doc_id=340370).

<sup>48</sup> John F. Derr, *Financing Health Care for an Aging Population*, The Commonwealth Fund, (December 2005), available at [http://www.cmwf.org/publications/publications\\_show.htm?doc\\_id=331494](http://www.cmwf.org/publications/publications_show.htm?doc_id=331494).

<sup>49</sup> *Ibid.* at 11.

<sup>50</sup> <http://www.ihealthbeat.org/index.cfm?Action=dspItem&itemID=128122>.

general information about their condition while 52 reported seeking drug safety information.<sup>51</sup> Although a significant amount of information remains accessible through dial-up, websites containing larger quantities of information and graphics as well as those with interactive features would be cumbersome if not impossible to navigate with a slower connection.

*Public Safety.* Over the past five years, the Internet has proven critical for disseminating public safety information. According to the FCC's own website "broadband can help protect the public by facilitating and promoting public safety information and procedures" including early warning/public alert systems and disaster preparation programs."<sup>52</sup> In fact, FCC recently identified Public Safety and Homeland Security as one of its primary strategic goals, noting that "In the aftermath of Hurricane Katrina, Americans were reminded of the importance of reliable, readily available, and interoperable communications - for emergency personnel responding to the tragedy, for individuals communicating with family and friends, and for the Nation as a whole, anxious to stay informed of ongoing events on a minute-by-minute basis."<sup>53</sup>

The Internet, created as a network secure enough to withstand a nuclear attack, has inherent structural advantages in an emergency over traditional communications systems. As a decentralized network with multiple paths between any two points, packet communication network capabilities "eliminate many single points of failure, and enables the network to automatically and efficiently work around failures."<sup>54</sup> The communications breakdown during Hurricane Katrina evidences the essential role

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<sup>51</sup> *Ibid.*

<sup>52</sup> [www.fcc.gov/cgb/broadband.html](http://www.fcc.gov/cgb/broadband.html).

<sup>53</sup> <http://www.fcc.gov/homeland>.

<sup>54</sup> *Ibid.*

broadband can play. During the storm, 38 Public Safety Answering Points failed and prevented 911 calls from being answered; public safety leaders assert that this could have been avoided if they had switched to IP based voice and data communication.<sup>55</sup>

The resilience of Internet communications during the general communications failures on September 11, 2001 also demonstrate the critical role that broadband can play in an emergency. A study by the National Academies of Science found that during the attacks on the World Trade Center, the Internet held up better than other communications technologies. In fact, while only 2 percent of Internet addresses remained off-line for an extended period of time, 95 percent of cell phone calls approximately three hours after the attack failed to get through, 300,000 landlines were cut off, “television stations were knocked off the air, and police and Fire Department radios failed.”<sup>56</sup> Although it remains unclear the extent to which broadband speeds were necessary to enable communication during September 11, an “always on” broadband connection enables faster communication than dial-up, a characteristics critical to efficacious communication during a public emergency.

*The essential nature of these benefits.* Although these benefits reveal the increasingly critical role broadband can play, some may argue that while broadband is important for education, health and public safety, it is not essential for them. Telephone industry commenters such as MCI argued in their 2003 Comments that the same resources are available through voice telephone, through dial-up connections to the

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<sup>55</sup> Marguerite Reardon, “911 dials IP technology” ZDNet, January 13. 2005, available at [http://news.zdet.com/2100-9595\\_22-6026770.html](http://news.zdet.com/2100-9595_22-6026770.html).

<sup>56</sup> <http://www.benton.org/index.php?q=node/5026#safety>.

Internet, or through access available at libraries.<sup>57</sup> According to MCI, the low demand for advanced services indicate that consumers do not value broadband or that such services are readily available through other means and that therefore such services are therefore not essential.<sup>58</sup> However, since 2003, the spiking demand for advanced services with a speed of at least 200 kbps in both directions, in contrast to dial-up,<sup>59</sup> suggests that demand has changed. In the past four years, the content sent over the Internet has changed significantly, as the transmission of large video and graphic files has become commonplace. As illustrated above, the interactive communication necessary for many educational opportunities, telehealth, and instantaneous contact during an emergency cannot be replicated with a dial-up connection.

Commenters from the telephone industry have also argued that broadband is not essential for education, health and public safety because broadband services are used for music and entertainment purposes.<sup>60</sup> For example, research by Forrester Research that found that “the next generation of high-speed customers will most likely use high-speed services for video-and music-entertainment purposes, television network sites, and instant access to local movie theater times and daily news.”<sup>61</sup> While the Internet is used for

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<sup>57</sup> *MCI Comments*, at 2 (rel. April 14, 2003).

<sup>58</sup> *See, e.g., Comments of WorldCom*, In the Matter of Federal-State Joint Board on Universal Service, CC Docket NO. 96-45, 4 (rel. November 5, 2001); “Universal Provision of DSL Services in Florida” Interim Project Report 2002 – 146, October 2001; *MCI Comments*, at 4.

<sup>59</sup> While the first commercial deployments of broadband happened in the late 1990s, roughly one-third of U.S. households had adopted broadband by 2005, and just a year later this increased to 40 percent.

<sup>60</sup> *See, e.g., Comments of Sprint Corporation*, In the Matter of Federal-State Joint Board on Universal Service, CC Docket NO. 96-45, 4 (rel. November 5, 2001); “Universal Provision of DSL Services in Florida” Interim Project Report 2002 – 146, October 2001.

<sup>61</sup> *Ibid.*

entertainment purposes, its dual role as a mode for entertainment and medium for communication is also undisputable. A 2003 study found that about three in four students with access to a computer at home used it for schoolwork.<sup>62</sup> Moreover, analogizing to telephony, the fact that many people make social plans over the telephone does not mean it is not essential for communication during an emergency.

The benefits illustrated above may also not be critical to all Americans in all circumstances; however, the benefits suggest that the high-speed Internet access has become essential to communication in public safety emergency situations as well for remote communities in the realm of health and education. Because both the nature of the services available through broadband and the reliance on such services has changed since 2003, the Joint Board and the Commission should conclude that broadband satisfies the first criterion.

**iii. In Most Urban Areas, Broadband Has, Through The Operation of Market Choices by Customers, Been Subscribed to by a Substantial Majority of Residential Customers. Broadband Adoption by Rural Consumers is Comparable Where Such Service Has Been Deployed**

In the 2003 Order, the FCC emphasized that the second criterion had not been met.<sup>63</sup> The precise definition of substantial majority remains unclear. Neither the FCC nor the Joint Board defined substantial majority. Instead, the 2003 Order focused on the low percentage of households subscribed to broadband services: “the Commission’s own data shows that as of December 31, 2002, there were approximately 17.4 million high-

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<sup>62</sup> Entertainment use (such as playing games) was slightly more common at 83 percent <http://www.nsf.gov/statistics/seind06/c1/c1s4.htm#c1s4I2>. .

<sup>63</sup> 2003 Order.

speed lines serving residential and small business subscribers, which represents 16 percent of all households.”<sup>64</sup>

The legislative history of the 1996 Act provides some guidance for the definition of “substantial majority.” The Senate Report offered the following illustration:

Touch-tone telephone service is widely available today and used by a substantial majority of residential customers to access services like voice mail, telephone banking, and mail order shopping services. These same services cannot be accessed using rotary party line services that are still used in some areas today. As result the Committee would not view rotary party line service as sufficient to meet the minimum definition of universal service. Similarly, in the year 2010, touch-tone service might not satisfy the evolving definition of universal service if the substantial majority of residential consumers use two-way interactive full motion video service as the primary means of communicating.<sup>65</sup>

According to the Senate Report, this criterion was added “to ensure that the definition of universal service evolves over time to keep pace with modern life.”<sup>66</sup>

Although the legislative history does not clarify what percentage constitutes a substantial majority, the legislative history does demonstrate an attention to how consumers access services and recognizes that the definition should not be static.

Since the 2003 Order, which emphasized that only 16 percent of households subscribed to broadband, the landscape of the broadband market has changed significantly. First, since 2003, the growth in subscribership has been rapid. In March 2006, Pew reported that 42 percent of all American adults had a high-speed Internet connection in the home. This number marked a 12 percent increase from the year before.<sup>67</sup>

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<sup>64</sup> *Ibid.*

<sup>65</sup> Senate Report on SR 652, Report No. 104-230.

<sup>66</sup> Conference Report on S. 652, CR-128.

<sup>67</sup> John B. Horrigan, “Home Broadband Adoption 2006”, Pew Internet and American Life Project, May 28, 2006.

The FCC's own data as of June 30<sup>th</sup> 2006 indicates that approximately 40 percent of all U.S. households subscribe to a high-speed or advanced service (see figure 1).<sup>68</sup> In the more urban states like New Jersey and Connecticut, the household penetration is above 55 percent. Though the FCC does not provide data at the city level, all available evidence indicates that residential household penetration in cities is likely even higher.<sup>69</sup>

Barring some major unforeseen event, the FCC data suggests that over 50 percent of U.S. households will be broadband subscribers by the end of 2007. Indeed, according to comments made by Commissioner Landis of the Federal State Joint Board on the March 1, 2007 Universal Service Fund Hearing, the 50 percent threshold will be met by the end of the year. Others put the estimate even higher; according to Technology Futures, about 50 percent of U.S. households have broadband access today and 75 percent will have broadband by 2010.<sup>70</sup>

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<sup>68</sup> See *High-Speed Services for Internet Access: Status as of June 30, 2006*, Industry Analysis and Technology Division, Wireline Competition Bureau, January 2007

<sup>69</sup> The May 2006 Pew survey showed that urban Adults reported having broadband at home at a rate 1.76 times that of rural adults (44 percent and 25 percent respectively).

<sup>70</sup> <http://www.ihealthbeat.org/index.cfm?Action=dspItem&itemID=120704>.

**Figure 1: State-Level Household Broadband Penetration<sup>71</sup>**

State	Percent of Homes Subscribing to Broadband (2006)	Rank	State	Percent of Homes Subscribing to Broadband in 2002	Percent of Homes Subscribing to Broadband in 2006	Percentage Point Change 2002 to 2006	Improvement Rank
Connecticut	55.4	1	Connecticut	15.9	55.4	39.5	1
New Jersey	55.4	2	New Jersey	17.2	55.4	38.2	2
Hawaii	53.3	3	Maryland	11.8	48.8	37.0	3
California	53.0	4	California	17.6	53.0	35.5	4
Massachusetts	52.4	5	New Hampshire	13.5	48.7	35.2	5
Maryland	48.8	6	DC	11.5	45.9	34.4	6
New Hampshire	48.7	7	Massachusetts	18.7	52.4	33.8	7
Rhode Island	47.6	8	Rhode Island	14.6	47.6	32.9	8
New York	47.1	9	Virginia	10.0	42.2	32.2	9
DC	45.9	10	Nevada	13.2	45.0	31.9	10
Nevada	45.0	11	New York	15.7	47.1	31.4	11
Washington	44.2	12	Illinois	9.1	40.2	31.1	12
Oregon	42.6	13	Oregon	11.6	42.6	31.0	13
Virginia	42.2	14	Washington	14.2	44.2	29.9	14
Florida	41.7	15	Colorado	11.3	40.9	29.6	15
Kansas	41.6	16	Kansas	12.3	41.6	29.3	16
Colorado	40.9	17	Delaware	9.2	38.5	29.3	17
Illinois	40.2	18	Florida	12.6	41.7	29.2	18
Georgia	39.2	19	Indiana	4.9	33.9	29.0	19
Nebraska	39.1	20	Pennsylvania	8.0	36.7	28.7	20
Arizona	38.9	21	Texas	11.0	38.7	27.6	21
Texas	38.7	22	Georgia	12.2	39.2	27.0	22
Delaware	38.5	23	Nebraska	12.2	39.1	26.9	23
Alaska	38.2	24	Utah	10.3	37.0	26.7	24
Minnesota	37.4	25	Wyoming	4.3	30.9	26.6	25
Utah	37.0	26	Arizona	12.4	38.9	26.5	26
Pennsylvania	36.7	27	Ohio	10.4	36.1	25.7	27
Ohio	36.1	28	Minnesota	11.8	37.4	25.6	28
Wisconsin	35.2	29	Missouri	8.2	33.6	25.4	29
Indiana	33.9	30	Wisconsin	9.8	35.2	25.4	30
Missouri	33.6	31	Maine	8.5	33.4	24.9	31
Maine	33.4	32	Montana	3.7	28.4	24.7	32
Vermont	32.4	33	Kentucky	3.6	28.0	24.4	33
Oklahoma	32.3	34	Vermont	8.9	32.4	23.5	34
Louisiana	32.1	35	Oklahoma	9.1	32.3	23.3	35
Michigan	31.7	36	Iowa	7.8	30.3	22.5	36
Wyoming	30.9	37	Louisiana	10.1	32.1	22.0	37
Tennessee	30.3	38	Alaska	16.2	38.2	22.0	38
Iowa	30.3	39	Idaho	6.8	28.2	21.4	39
South Carolina	29.2	40	New Mexico	4.9	26.1	21.1	40
North Carolina	28.8	41	South Carolina	8.5	29.2	20.7	41
Montana	28.4	42	Michigan	11.3	31.7	20.4	42
Idaho	28.2	43	Tennessee	10.3	30.3	20.1	43
Kentucky	28.0	44	West Virginia	6.3	26.2	19.9	44
West Virginia	26.2	45	Arkansas	6.7	25.6	18.9	45
New Mexico	26.1	46	Alabama	7.6	25.4	17.9	46
Arkansas	25.6	47	North Carolina	10.9	28.8	17.8	47
Alabama	25.4	48	South Dakota	3.4	19.4	16.0	48
South Dakota	19.4	49	North Dakota	4.4	18.6	14.1	49
North Dakota	18.6	50	Mississippi	4.2	17.9	13.7	50
Mississippi	17.9	51	Hawaii	N/A	53.3	N/A	N/A
Nationwide	40.0		Nationwide	11.7	40.0	28.3	

<sup>71</sup> All data based on number of residential lines in each state reported in FCC Form 477 as of June 30 2006. Percentages assume one line per household, based on U.S. Census household estimates.

Opponents of broadband's inclusion may claim that a "substantial majority" is a higher threshold than broadband's current level and point to the greater subscribership with services the FCC has designated as core services in the past. For example, the Joint Board's 1997 Recommended Decision indicated that nearly 90 percent of lines had access to 911-service capability and thus found that such that the second criteria had been satisfied.<sup>72</sup> In addition, upwards of 98.5 percent of residential subscribers subscribe to single party service (the remainder have shared party line service), which was included as a core service in 1997.<sup>73</sup> However, services the FCC considered but rejected have generally had much lower subscriber rates than broadband does today. For example, when rejecting inclusion of soft dial tone/warm services, the FCC noted that they were not subscribed to by *any* residential consumers.<sup>74</sup> When declining to include payphone lines in universal service, the FCC emphasized that a substantial majority did not subscribe.<sup>75</sup> Although neither the FCC nor the Joint Board elaborated on the particular numbers, the American Public Communications Council, the trade group of independent pay phone owners, reported that in 2001 there were only 2.2 million pay phones nationwide, down approximately 15 percent from their peak of 2.6 million in 1998.<sup>76</sup> This

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<sup>72</sup> *Recommended Decision*, 12 F.C.C. Rcd. at 114.

<sup>73</sup> Neither the Recommended Decision or the F.C.C.'s Report elaborated on the precise percentage of subscribership but *see, e.g.*, [http://www.rural.org/workshops/rural\\_telecom/egan/3.htm](http://www.rural.org/workshops/rural_telecom/egan/3.htm) (reporting the subscribership level for the 900 telephone companies receiving RUS support).

<sup>74</sup> *2003 Order*, 18 F.C.C. Rcd. at 15,097.

<sup>75</sup> *2003 Order*, 18 F.C.C. Rcd. at 15,099.

<sup>76</sup> Barbara Woller, "Public pay phone use down as wireless use grows," Public Utility Law Project (5/15/2001), *available at* [http://archive.pulp.tc/html/public\\_pay\\_phone\\_use\\_down\\_as\\_w.html](http://archive.pulp.tc/html/public_pay_phone_use_down_as_w.html).

number falls far short of broadband's 64.6 million lines of service reported by the FCC in 2006.<sup>77</sup>

Even if in the past a “substantial majority” has indicated a threshold well above 50 percent and closer to 90 percent, *an artificially high threshold does not make sense for broadband considering the statutory mandate that deployment of advanced services should be a priority.* Congress directed the Commission and the states, in section 706 of the Telecommunications Act of 1996, to encourage deployment of advanced telecommunications capability “to all Americans on a reasonable and timely basis.”<sup>78</sup>

In addition, the operation of “market choices by consumers” is skewed in the broadband market. A central reason the rate of subscribership is not higher is that the operation of market choices by consumers has been hindered by the unavailability of broadband and its inaccessibility due to price.<sup>79</sup> While the market has worked to deploy broadband rapidly, as the FCC data reveals,<sup>80</sup> there is nonetheless a limit to this deployment. First, broadband remains unavailable to many rural Americans because of the high cost to providers of deploying broadband. For example, 63 percent of NCTA service providers surveyed about deployment identified the high cost of deployment as a major impediment to offering broadband to all telephone subscribers.<sup>81</sup> While the precise scope of broadband's unavailability in rural areas remains unknown, ten percent of non-

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<sup>77</sup> See *High-Speed Services for Internet Access: Status as of June 30, 2006*, Industry Analysis and Technology Division, Wireline Competition Bureau, January 2007.

<sup>78</sup> See § 706, Pub.L. 104-104, Title VII, Feb. 8 1996, 10 Stat. 153.

<sup>79</sup> S. Derek Turner, *Universal Service Reform & Convergence*, Free Press, May 2006.

<sup>80</sup> Commenters in the telephone industry also advance the argument that market forces appear to be working to encourage broadband deployment. See *MCI Comments*, at 4.

<sup>81</sup> See *NTCA Comments*, In the Matter of Federal-State Joint Board on Universal Service, CC Docket No. 96-45 (rel. November 5, 2001).

broadband users surveyed by the Yankee Research Group about why they did not subscribe to broadband responded that it was unavailable where they lived.<sup>82</sup>

Second, the high cost of subscribing to broadband services also effectively limits adoption by low-income consumers. Two important for predicting state-level broadband penetration are medium household income and poverty rate.”<sup>83</sup> In a recent survey by the Yankee Research group, nearly half of non-broadband users responded that they did not subscribe because access is too expensive.<sup>84</sup> More than half of households with annual incomes above \$100,000 have broadband but less than one-third of households with incomes below \$100,000 subscribe.”<sup>85</sup> Furthermore, a 2006 GAO study revealed that only one out of every ten households with incomes below \$30,000 have broadband access.<sup>86</sup>

The cost and price impediment in rural, high cost and low-income areas suggest that market forces alone will not guarantee many Americans access to broadband. In fact, a high rate of subscribership among the higher income, urban demographic underscores the shortcomings of market forces in this area. As stated above, six out of ten households with incomes over \$100,000 subscribe to broadband.<sup>87</sup> In addition, in the top one-tenth of Zip Codes ranked by median household income, the FCC reported high-speed subscribers in 99 percent of Zip Codes. In Zip Codes with the lowest median household income, however, the FCC reported high-speed subscribers in only 91 percent

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<sup>82</sup> Yankee Group, February 2006, available at <http://www.emarketer.com>.

<sup>83</sup> Turner, *Universal Service Fund & Convergence*, *supra* note 78, at 15.

<sup>84</sup> Yankee Group, February 2006, available at <http://www.emarketer.com>.

<sup>85</sup> *Ibid.*

<sup>86</sup> “Broadband Deployment is Extensive throughout the United States, but it is Difficult to Assess the Extent of Deployment Gaps in Rural Areas,” *Government Accountability Office Report to Congressional Committees*, GAO-06-426 (May 2006).

<sup>87</sup> *Ibid.*

of the Zip Codes (and because this percentage means only that there is one subscriber in the entire Zip Code, the disparity might be even greater).<sup>88</sup> Ultimately, the rapid growth in subscribership overall coupled with apparent limitations to the operation of the market in rural and low-income communities suggests that waiting for subscribership to increase would undermine the goal of universal service because those most in need would remain without access.

#### **iv. Broadband is Being Deployed in Public Telecommunications Networks by Telecommunications Carriers**

In its *2003 Order*, the FCC stated that broadband meets the third criterion: “We note that the Commission previously concluded that market forces have encouraged the deployment of advanced and high-speed services on a reasonable and timely basis”<sup>89</sup> The ubiquitous deployment by telecommunications carriers is even more true today.

According to the most recent FCC report on Form 477 data, “[h]igh-speed lines connecting homes and businesses to the Internet increased by 26 percent during the first half of 2006, from 51.2 million to 64.6 million lines in service, compared to a 21 percent increase, from 42.4 million to 51.2 million lines, during the second half of 2005.”<sup>90</sup>

Broadband is available via a number of different services and are “provided using a variety of technologies, network architectures and transmission paths.”<sup>91</sup> Cable companies offer broadband to 91 percent of subscribers, wireless providers offer 3G services, satellite services are available, and wireline telephone companies offer

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<sup>88</sup> See *High-Speed Services for Internet Access: Status as of June 30, 2006*, Industry Analysis and Technology Division, Wireline Competition Bureau, January 2007, at 4, available at [www.fcc.gov](http://www.fcc.gov).

<sup>89</sup> *2003 Order*, (citing the Third 706 Report to Congress).

<sup>90</sup> See *High-Speed Services for Internet Access: Status as of June 30, 2006*, Industry Analysis and Technology Division, Wireline Competition Bureau, January 2007.

<sup>91</sup> *Ibid.*

broadband to 79 percent of households to whom ILEC's could provide local telephone service.<sup>92</sup> Consequently, the Joint Board and Commission must reaffirm the conclusion that broadband satisfies the third criterion.

**v. Broadband is Consistent with the Public Interest, Convenience and Necessity**

The FCC's *2003 Order* asserted two justifications to support its conclusion that broadband does not satisfy the fourth prong: the high cost and lack of technological neutrality that would result from inclusion.<sup>93</sup> These concerns notwithstanding, the public interest benefits, such as consumer surplus, are significant. In addition, because the market for broadband services has changed since 2003, the high costs may in fact weigh in favor of inclusion because deployment is disproportionately limited in rural and low-income communities. Furthermore, a properly designed support system based on open access principles would reduce inefficient investment and lower the overall burden on the fund. And the trend toward technological convergence -- the interchangeability of voice, data and video messages -- may also minimize the problem of technological neutrality. Moreover, both concerns expressed in the *2003 Order* can be mitigated by structural reforms to the fund.

**a. The Public Interest Benefits of Broadband**

In addition to the education, public health and public safety benefits described above, widespread adoption of broadband has proven advantageous for consumers, the workforce, and the economy as a whole.

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<sup>92</sup> *Ibid.*

<sup>93</sup> *2003 Order.*

Citizens. The Internet has transformed the way American consumers communicate, engage in business, and participate in democracy. Currently, 31 billion emails are sent each day and more than 14 million Americans have placed a telephone call over the Internet.<sup>94</sup> Moreover, broadband has enabled citizens to engage in business with greater alacrity, choice and efficiency. Consumers use broadband to pay bills and to shop, as the rate of Internet purchases continues to rise.<sup>95</sup> The ability for consumers to engage in business transactions online -- such as registering cars, banking, and paying parking tickets -- saves both time and money.<sup>96</sup>

In addition to communicating and conducting business, the opportunities for democratic participation abound as well. Americans can engage in democratic dialogue as bloggers or online activists.<sup>97</sup> More than 60 million people reported that they were online during the 2006 campaign to get information about candidates and/or exchange views via email.<sup>98</sup> The Internet has also become a forum for politicians to announce their candidacy. John Edwards, for example, released a video announcing his presidential candidacy on YouTube.<sup>99</sup> Because the content and mediums of online transmissions has changed significantly since the 2003 *Order* (and the 2004 election), dial-up connections provide insufficient access to the democratic discourse. The ability for citizens to

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<sup>94</sup> *The Benefits of Universally Available Broadband Are Enormous*, Benton Foundation, available at <http://www.benton.org/index.php?q=node/5026#consumers>.

<sup>95</sup> Dr. Robert D. Atkinson & Andrew McKay, *Digital Prosperity: Understanding the Economic Benefits of the Information Technology Revolution*, The Information Technology & Innovation Foundation 10 (March 2007)..

<sup>96</sup> *The Benefits of Universally Available Broadband Are Enormous*, Benton Foundation, available at <http://www.benton.org/index.php?q=node/5026#consumers>.

<sup>97</sup> *Ibid.*

<sup>98</sup> Pew Internet & American Life Project, available at [http://www.pewinternet.org/pdfs/PIP\\_Politics\\_2006.pdf](http://www.pewinternet.org/pdfs/PIP_Politics_2006.pdf).

<sup>99</sup> <http://newteevee.com/2006/12/27/john-edwards-youtube-candidacy/>;  
<http://pulverblog.pulver.com/archives/006159.html>

participate in the democratic dialogue should be open to all, including those in rural and low-income areas.

Telecommuting and the Workforce. Broadband's benefits to employees are also significant because high-speed access creates telecommuting opportunities. This option is especially beneficial for disabled or rural Americans who have difficulty commuting to work or have limited access to job opportunities. The greater flexibility afforded by broadband access has also been shown to increase productivity. For example, by supplying workers at the corporate headquarters of Best Buy with the option of more flexible hours and working from home by relying on broadband and voice communications, output increased by 35 percent.<sup>100</sup> Telecommuting also saves workers time; telecommuting can save a commuter who commutes 30 minutes each way to and from work 125 hours annually, or over a 50-week year – “the equivalent to giving them more than three weeks of additional time with family and friends every year.”<sup>101</sup>

Economic advantages. Widespread adoption of broadband has contributed to the nation's economic growth and to its international competitiveness. As a recent Digital Prosperity Study noted, “In the new global economy information and communications technology is the major driver, not just of improved quality of life, but also of economic growth.”<sup>102</sup> According to the study, information technology has been the key factor responsible for reversing the 20-year productivity slowdown.<sup>103</sup> A 2003 Crandall study suggests that the overall direct consumer surplus -- the difference between the total value

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<sup>100</sup> Atkinson, *supra* note 76, at 28.

<sup>101</sup> <http://www.benton.org/index.php?q=node/5026#fn1>.

<sup>102</sup> Atkinson, *supra* note 76, at 1, 10.

<sup>103</sup> *Ibid.* at 10.

consumers receive from consuming broadband and the total amount they pay for it<sup>104</sup> -- in the U.S. from broadband use was 10 billion per year with household penetration at approximately 20 percent.<sup>105</sup> Consumer surplus, the study estimates, could rise to about \$100 billion per year and \$350 billion per year at penetration rates of 50 percent and 95 percent respectively.<sup>106</sup>

Broadband creates economic opportunities in rural communities suffering from declining economies. In many communities where jobs have migrated to the cities, broadband access enables rural businesses to reach new markets and allows rural economies to become an engine for higher paying information age jobs. Expansion of broadband access to rural markets may help shrink the urban rural wage gap by allowing highly paid workers to move to more remote areas, and rural Americans to access higher paying urban jobs.<sup>107</sup>

Overall, broadband and information technology has enabled consumers and the government to cut costs. A study of the adoption of Internet based business practices found “that between 1998 and 2001 firms in the U.S. saved \$155 billion, and by 2010 are expected to cumulatively save \$528 billion.”<sup>108</sup> The IRS’s Free File system is illustrative of the efficiencies broadband can produce for the government. The program, which

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<sup>104</sup> According to a 2003 Crandall study, the four most easily forecast economic benefits of broadband fall into the following four areas: retailing, transportation, home entertainment, and health care. Crandall et al., *The Effects of Ubiquitous Broadband Adoption on Investment, Jobs and the U.S. Economy*, Criterion Economics, LL.C., September, 2003.

<sup>105</sup> *Ibid.*

<sup>106</sup> *Ibid.*

<sup>107</sup> *Broadband Access, Telecommuting and the Urban-Rural Digital Divide*, Iowa State University. March 1 2006, available at <http://www.seta.iastate.edu/abstracts/files/5.pdf>.

<sup>108</sup> *Ibid.* at 14.

provides a single point of access for a free online prep and tax filing services, began in 2003 and has saved the IRS more than 23 million dollars in processing costs for the 15 million tax returns that have been filed electronically through Free File since its inception.<sup>109</sup>

Thus, the advantages for citizens, the workforce and the economy on the whole weigh in favor of broadband's inclusion as a core service in the USF.

**b. Public Interest Arguments Against Inclusion:  
High Cost and Technological Neutrality**

The *2003 Order* did not address the public interest benefits of adding broadband to the list of core services; rather, the Order focused on the two reasons inclusion did not advance the public interest: costs and technological neutrality. Both of these justifications focus on the increasing strain on the structure of the fund if broadband is included as a core service. Costs and technological neutrality, however, may overstate the concern and can be mitigated by careful reform.

**(1) Costs**

In the *2003 Order*, the FCC expressed concern that adding such services “would be contrary to the public interest due to the high cost of requiring deployment of such services.”<sup>110</sup> The Joint Board specifically noted that it “continues to believe that the definition of universal service must strike the appropriate balance between ensuring the availability of fundamental telecommunications services to all Americans and maintaining a federal universal service fund of sustainable size.”<sup>111</sup>

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<sup>109</sup> *Ibid.* at 23.

<sup>110</sup> *2003 Order*.

<sup>111</sup> *Recommended Decision*, 18 F.C.C. Rcd. at 14, 095.

Over the past few years, the USF has been under increasing pressure; as the contributions base continues to diminish, the size of distributions has ballooned.<sup>112</sup> Payments into the fund by eligible telecommunications carriers are based on a contribution factor assessed on revenue from interstate and international service.<sup>113</sup> Most telecommunication carriers pass this charge onto the consumer by placing a surcharge on each consumer's telephone bill. To compensate for the declining revenues overall (which resulted in declining contributions) and in an attempt to stabilize the fund, the contribution factor has risen from 5.7 percent in 2000 to 10.9 percent for the second quarter of 2006.<sup>114</sup>

Perhaps as a response to increasing pressure on fund, the FCC focused on the high cost of including broadband when excluding it from the list of core services in 2003. Specifically, the FCC relied on the Joint Board's finding that upgrading the telephone network to provide broadband would triple the size of the USF.<sup>115</sup> The Joint Board cited a National Exchange Carrier Association (NECA) study in 2000 asserting that it would cost 10.9 billion dollars to upgrade rural networks to provide advanced services.<sup>116</sup> A year later, Rob Rich, the Vice President of communications infrastructure technologies at Yankee Group, confirmed the estimation that it could cost carriers approximately \$10

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<sup>112</sup> See e.g., *Comments of Commissioner Tate*, at March 1, 2007 Universal Service Hearing; *Comments by Chairman Martin*, at the February 23, 2007 Federal-State Joint Board Hearing. Specifically, Chairman Martin has criticized the fact that the fund is disbursed to competitors within the same market.

<sup>113</sup> See *Trends in Telephone Service; Industry Analysis and Technology Division*, Wireline Competition Bureau, 2007 FCC LEXIS 1236, \*7, n. 4 (February 9, 2007).

<sup>114</sup> See *APT Report*, *supra* note 30, at 21 (based on Federal Universal Service Support Mechanism Fund Size, Projections for the 2<sup>nd</sup> Quarter, 2006, filed by the Universal Service Administrative Company with the F.C.C., Jan. 31, 2006).

<sup>115</sup> See *Recommended Decision*, 18 F.C.C. Rcd. at 2941 (citing NECA RURAL Broadband Cost Study (2000) at 12).

<sup>116</sup> *Ibid.*

billion overall to enable the un-wired homes in much of rural America with DSL. In addition, he estimated it would cost another \$10 billion to enable with DSL the un-wired homes in the densest parts of the U.S.<sup>117</sup>

But the magnitude of the spending increase requires further inquiry. The costs of adding broadband remain uncertain, and are highly dependent on other aspects of USF distributions, such as portability and identical support. Costs are likely less today than they were in 2003 because the number of non-capable lines has dropped significantly since 2003. As of June 2006, only 21 percent of DSL lines and 7 percent of cable modem lines were not broadband capable.<sup>118</sup> Ultimately, the magnitude of the increase will depend on the specific policy changes made.<sup>119</sup>

Moreover, any move to modernize the program must and likely will take place as other structural changes are made to the way fund contributions are assessed and how the support is ultimately distributed. It is simply not justifiable to exclude broadband as a supported service simply because doing so in the current USF framework may at first glance seem prohibitively expensive. The Joint Board and the Commission have a duty to make the fund work as indented under the Act.

Another area merits further investigation. The high cost of broadband deployment generally may in fact suggest that inclusion advances rather than contravenes

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<sup>117</sup> Bob Sullivan, “Broadband by 2007? Don’t Hold Your Breath,” MSNBC News (March 30, 2004) (quoting Fran Rich, “The Verizons and the SBCs of the world will have to have some kind of incentive”).

<sup>118</sup> *High-Speed Services for Internet Access: Status as of June 30, 2006*, Industry Analysis and Technology Division, January 2007.

<sup>119</sup> For example, the magnitude of the increase will depend on a number of factors such as on the cost per line to upgrade, the number of lines upgraded, how much the fund contributes to the upgrading process, and whether there is limit to the funds that can be disbursed for broadband.

the public interest. Some incentive might be required for broadband deployment to penetrate rural and low-income areas.<sup>120</sup> The Act states that “access to advanced telecommunications and information services should be provided in all regions of the Nation”<sup>121</sup> and sets forth the principle that “consumers in all regions of the Nation should have access to telecommunications and information services that are reasonably comparable to those services provided in urban areas” at reasonably comparable rates.<sup>122</sup> In fact, in estimating the high costs of deployment, Frank Rich of Yankee Group pointed to the high cost of deployment as evidence of the need to incentivize carriers to deploy broadband in un-served regions.<sup>123</sup> The President of OPASTCO similarly noted there are some areas that are so prohibitively expensive to serve that ubiquitous broadband would be impossible absent high cost support.<sup>124</sup> Without incentives, the high cost of broadband deployment may translate into a situation where consumers in rural and low-income communities are denied access to reasonably comparable services.

Finally, the extent of broadband’s economic benefits should weigh into the analysis of cost. The public interest benefits described above reveal that broadband’s potential to reduce costs are significant. To make a determination on whether the high cost of inclusion contravenes the public interest, the FCC should develop the record on costs as well as structural reforms that may minimize the problems associated with costs and consider the scope of the economic benefits of inclusion.

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<sup>120</sup> *See e.g., Valor Comments*, at 6.

<sup>121</sup> 47 U.S.C. § 254(b).

<sup>122</sup> 47 U.S.C. § 254(b).

<sup>123</sup> Bob Sullivan, “Broadband by 2007? Don’t Hold Your Breath,” MSNBC News (March 30, 2004) (quoting Fran Rich, “The Verizons and the SBCs of the world will have to have some kind of incentive”).

<sup>124</sup> *Ibid.*

## (2) Technological Neutrality

In 2003, the FCC also found that the inclusion of broadband as a core service would be contrary to the public interest because inclusion would violate the principle of technological neutrality.<sup>125</sup> As explained above, the Commission adopted the Joint Board's recommendation that the principle of competitive neutrality be considered.<sup>126</sup> In this context, "competitive neutrality means that universal service support mechanisms and rules neither unfairly advantage or disadvantage one provider over another, and neither unfairly favor or disfavor one technology over another."<sup>127</sup> The problem with technological neutrality arises in the broadband context because support is conditioned on the ability of a carrier to provide *all* of the supported services. In order to be designated as an ETC under section 214(e), the Act requires that a carrier must throughout its service area offer the services that are supported by Federal Universal Service support mechanisms under section 254(c).<sup>128</sup> In turn, the FCC adopted the Joint Board's recommendation that ETCs must offer *all* the services in the universal service package.<sup>129</sup> Because of this requirement, technological neutrality raises two problems: 1) inclusion will exclude currently eligible ETCs if they cannot offer broadband; and 2) inclusion will favor broadband deployment through wireless and wireline telephony carriers over satellite and cable carriers if the latter cannot offer the same level of services.

The FCC stated in 2003 that adding advanced services "could jeopardize support currently provided to some carriers" because many small rural carriers "do not yet offer advanced or high-speed services ubiquitously throughout their service area" but did not

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<sup>125</sup> *2003 Order*, 18 F.C.C. Rcd. at 15094.

<sup>126</sup> *First Report and Order*, 12 F.C.C. Rcd. at 8809.

<sup>127</sup> *Ibid.*

<sup>128</sup> 47 U.S.C. 214(e)(1).

<sup>129</sup> *First Report and Order*, 12 F.C.C. Rcd. at 8825.

indicate how many ETCs would be excluded.<sup>130</sup> Inclusion would also affect wireless ETCs. Although the FCC did not focus specifically on wireless ETCs,<sup>131</sup> commenters from the wireless industry contended in their 2003 Comments that although they could offer Internet access, high-speed Internet access was more difficult to deploy and thus carriers would be excluded if the FCC expanded the definition of core services.<sup>132</sup>

Because the provision of services by telecommunications carriers has changed significantly since 2003, technological neutrality may not raise as substantial a concern today. As most ETCs are currently broadband capable or will be soon, the extent to which current ETCs would be shut out by including broadband as a core service is not clear. Although the precise number of non-capable ETCs remains unknown, the FCC estimated in 2006 that broadband was available to 79 percent of households to whom ILEC's could provide local telephone service.<sup>133</sup> Other estimates are even higher. The Organization for the Promotion and Advancement of Small Telecommunications Companies (OPASTCO), a trade association representing small LECs, estimated that as of the summer of 2006 its members were capable of offering broadband to nearly 90 percent of its customers.<sup>134</sup> In addition, the effect on wireless carriers currently eligible

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<sup>130</sup> *Ibid.*

<sup>131</sup> ETCs included wireless and competitive local exchange carriers. Turner, *Universal Service Reform & Convergence*, *supra* note 2, at 15.

<sup>132</sup> *Dobson Comments* at 7 ((rel. April 14, 2003) stating that “although transmission speeds are improving as technologies evolve, under the current definition of advanced services, the adoption of these services would currently preclude wireless carriers, including Dobson, from obtaining ETC status”).

<sup>133</sup> *High-Speed Services for Internet Access: Status as of June 30, 2006*, Industry Analysis and Technology Division, 3 (January 2007), available at [www.fcc.gov](http://www.fcc.gov).

<sup>134</sup> *Statement of John Rose, President of OPASTCO*, Before the United States Senate Committee on Commerce, Science and Transportation 5 (June 13, 2006), available at <http://www.opastco.org/docs/Rose-StevensTestimony.pdf>.

as ETCs is similarly unclear; as of June 2006, wireless carriers – including fixed wireless and mobile wireless – reported 1,457,321 high-speed residential lines.<sup>135</sup>

For both wireless and wireline ETCs that cannot currently support broadband, expanding the definition of core services to include broadband may in fact spur investment and encourage innovation. As stated above, the President of OPASTCO noted there are some areas that are so prohibitively expensive to serve that ubiquitous broadband will remain impossible absent high cost support.<sup>136</sup> In deciding whether to expand the definition, the FCC should investigate how many ETCs are not broadband capable and whether inclusion would provide the necessary incentive for deployment, as OPASTCO contends. Overall, while market trends reveal that carriers have moved toward convergence since 2003, more information is required.

But the Joint Board and the Commission must defer to the plans of Congress as laid out in the Act. Congress intended for the fund to modernize in step with advances in technology. The Fund's purpose is not to indefinitely maintain support for businesses, but to provide universal access to advanced telecommunication technologies to all Americans. If the Commission decides to include broadband, carriers can be given ample time to take the steps to modernize. If they cannot, then they should not expect continued support for the provision of outdated technology.

Second, commenters argue that expanding the definition would also violate technologically neutrality because carriers not currently designated as ETCs, such as satellite and cable providers, would be excluded because they do not offer services that

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<sup>135</sup> *High-Speed Services for Internet Access: Status as of June 30, 2006*, Industry Analysis and Technology Division, January 2007.

<sup>136</sup> *Ibid.*

meet the definition of core services (such as basic voice grade access to the public switched network).<sup>137</sup> Non-ETCs from these industries argue that inclusion of broadband as a core service will favor deployment via wireless and wireline telephone infrastructure over other platforms.<sup>138</sup>

However, the impact of inclusion on carriers not currently designated as ETCs may be over-stated. Through the provision of interconnected VoIP services, cable and satellite providers will increasingly be able to provide the list of core services and thus should be considered ETC eligible. As the FCC noted in its *First Report and Order*, “any telecommunication carrier, using any technology, including wireless technology”<sup>139</sup> may become an ETC as long as they offer the universal service package over their own facilities.<sup>140</sup> The Commission found in the *2005 CALEA Order* that interconnected VoIP services -- defined as services that enable real-time communication, require a broadband connection, require IP-compatible customer premises equipment, and offer the capability for users to receive calls from and terminate calls to the PSTN -- satisfy the definition of a “telecommunications carrier” because these services replace significant functions of traditional telephone service and allow customers to originate calls to and receive calls from the PSTN.<sup>141</sup> In the *2006 VoIP Order*, the FCC also concluded that VoIP providers

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<sup>137</sup> See *Comment of Maryland Public Service Commission*, In the Matter of Federal-State Joint Board on Universal Service, CC Docket No. 96-45 (rel. November 16, 2001).

<sup>138</sup> *Ibid.*

<sup>139</sup> *First Report and Order*, 12 F.C.C. Rec. at 8791.

<sup>140</sup> *Ibid.* at 8858- 8859. To be an ETC, the carrier must offer service either “using its own facilities or a combination of its own and resale of another carrier’s services (including the services offered by another eligible telecommunications carrier)” and cannot simply resell another carriers’ services. *Ibid.*

<sup>141</sup> See *Communications Assistance for Law Enforcement Act and Broadband Access and Services*, ET Docket No. 04-295, RM-10865, First Report and Order and

supply interstate telecommunications and are thus subject to access charges and universal service contributions.<sup>142</sup> These determinations suggest that non-traditional services offering VoIP are “telecommunications carriers” and thus should be eligible for USF distribution as ETCs, provided they offer the supported services over their own facilities and meet the reporting requirements.<sup>143</sup>

If carriers providing interconnected VoIP services are indeed eligible for USF distributions, cable and satellite carriers may benefit from the inclusion of broadband as a core service. A vast majority of cable and satellite companies already offer broadband services.<sup>144</sup> As of June 2006, high-speed cable modem service was available to 93 percent of the households to whom cable system operators could provide cable TV service.<sup>145</sup> Cable modem accounted for over 27 million of the high-speed residential lines in the U.S., approximately 55.2 percent of all residential high-speed lines.<sup>146</sup> In

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Further Notice of Proposed Rulemaking, 20 FCC Rcd 14989, 15001 (2005), *aff'd*, *American Council on Education v. FCC*, No. 05-1404 (D.C. Cir. June 9, 2006).

<sup>142</sup> *Report and Order and Notice of Proposed Rulemaking*, 21 F.C.C. Rcd. 7518 (2006). Section 254(d) of the Act states the FCC may require any provider of interstate telecommunications to contribute. Thus, the Order distinguished between providers of interstate telecommunications services and providers of interstate telecommunication. The former offers services for a fee directly to the public. The latter is more broad and offers the transmission between or among points specified by the user information of the user’s choosing. *Ibid.* at 7538.

<sup>143</sup> There is a distinction between over-the-top VoIP providers, which purchase access to the PSTN, from facilities-based providers; ultimately, the 2006 Order asserted jurisdiction over both and required all VoIP providers to contribute. For the purposes of receiving distributions, the Act requires that the ETC offers the package of services over its own facilities or a combination of its own facilities and resale. Thus, some over-the-top VoIP providers may be excluded if they did not own facilities. *Ibid.*

<sup>144</sup> Of the 64.6 million total high-speed lines, 50.3 million were designed to serve primarily residential end users. Cable modem represented 55.2% of these lines. *High-Speed Services for Internet Access: Status as of June 30, 2006*, Industry Analysis and Technology Division, January 4, 2007.

<sup>145</sup> *Ibid.*

<sup>146</sup> *Ibid.*

addition, satellite services provided access in at least 90 percent of Zip Codes<sup>147</sup> and had 382,047 high-speed residential lines.<sup>148</sup>

Increasingly, as VoIP becomes a popular alternative to voice telephony, these broadband services include telephone access through VoIP. Currently, nine percent of American households use a VoIP service, equivalent to approximately 10.6 million Americans,<sup>149</sup> and cable and satellite companies have both contributed and responded to this trend. Comcast, the largest cable provider in the U.S., offers facilities based VoIP services in at least 60 markets, reaching 32.4 million homes.<sup>150</sup> According to Cox, another leading cable provider, over 2 million customers subscribe to its service providing voice telephony over cable lines.<sup>151</sup> Although the number of VoIP over satellite providers requires further inquiry, satellite services have also begun include VoIP in their packages<sup>152</sup> Thus, broadband's inclusion may not necessarily preclude cable and satellite providers from receiving universal service funds.

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<sup>147</sup> *Ibid.*

<sup>148</sup> *Ibid.*

<sup>149</sup> *Nine Percent of American Households Now Use a VoIP Service*, Government Technology (March 29, 2007), available at <http://www.govtech.net/news/news.php?id=104678>; Turner, *Universal Service Reform & Convergence*, *supra* note 2, at 1.

<sup>150</sup> [http://media.corporate-ir.net/media\\_files/irol/14/147565/digital\\_voice.pdf](http://media.corporate-ir.net/media_files/irol/14/147565/digital_voice.pdf).

<sup>151</sup> <http://www.cox.com/telephone/default.asp>.

<sup>152</sup> Major satellite companies have been teaming up with the major VoIP service providers to offer satellite voice services. To deal with the problem of latency and degradation, satellite companies have begun to prioritize VoIP data packets, set aside bandwidth on the satellite just for VoIP calls, and apply advanced voice compression techniques. <http://www.voipresource.net/satellite-VoIP.htm>.

In addition, as with high costs, the extent of technological discrimination resulting from inclusion will depend on how the USF is restructured. Distribution reform can potentially minimize the problem resulting from favoring one technological platform.<sup>153</sup>

Although the FCC adopted the Joint Board's recommendation that ETCs should be required to offer all services, the FCC authorized state commissions to grant transition periods in order to allow network upgrades under "exceptional circumstances."<sup>154</sup> The *First Report and Order* granted state commissions permission to allow additional time to complete network upgrades needed to provide single-party service, access to enhanced 911, and toll limitation.<sup>155</sup> When reforming the USF, the FCC could provide for a similar transition period and waiver process for broadband upgrades.<sup>156</sup> In addition to explicitly permitting the state commissions authority to waive the requirement that an ETC provides the entire list of core services, the FCC possesses the authority to waive its rules if good cause exists.<sup>157</sup>

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<sup>153</sup> While the APT Report advocates this latter suggestion of only distributing funds to broadband capable carriers, *see APT Report, supra* note 30, at 26, other reform alternatives include offering broadband to ETCs but not requiring broadband capability for a number of years. *See S. Derek Turner, Universal Service Reform & Convergence*, Free Press, May 2006.

<sup>154</sup> *First Report and Order*, 12 F.C.C. Rcd.. 8825.

<sup>155</sup> *Ibid.* at 8826.

<sup>156</sup> S. 2686, the "Communications Consumer's Choice, and Braodband Deployment Act of 2006," released May 1, 2006, sponsored by Ted Stevens and Daniel Inouye, proposed a five year time table to update ETCs unless carriers can obtain a waiver from the FTC.

<sup>157</sup> In addition to having the authority to permit a transition period, the F.C.C. may also waive any provision of its rules on its own motion and for good cause shown. 47 C.F.R. §1.3. The Commission may exercise its discretion to waive a rule where the particular facts make strict compliance inconsistent with the public interest. *Northeast Cellular Telephone Co. v. FCC*, 897 F.2d 1164, 1166 (D.C. Cir. 1990) (*Northeast Cellular*). In addition, the Commission may take into account considerations of hardship, equity, or more effective implementation of policy on an individual basis. *WAIT Radio v. F.C.C.*, 418 F.2d 1153, 1157, (D.C. Cir. 1969); *Northeast Cellular*, 897 F.2d at 1166.

In conclusion, despite the concern with cost and technological neutrality, the FCC should find that the fourth prong is met. Any attempt to expand the definition of core services will inevitably raise the specter of high costs and technological neutrality. But as the statute mandates that the definition must evolve, the fact that reform will prove difficult should not justify stagnation. Moreover, the problems of costs and technological neutrality may be mitigated, if not avoided, by a careful restructuring of the USF.

#### **D. Balancing the four factors**

As stated above, the Commission has made it clear that the not all four criteria must be met. With services the Commission has included in the definition of universal service in the past, the Joint Board often enumerated that all four criteria had been met. With access to single party service, voice grade access to the public switched network, directory service, and emergency service, for example, the Joint Board was explicit that the services satisfied all four criteria.<sup>158</sup> In instances where not all four criteria were met but the service was ultimately included, the FCC emphasized the first, third, and fourth criteria. With DTMF signaling, the FCC found that it advanced all four criteria except subscribership because “consumers do not elect to subscribe to DTMF signaling, per se.”<sup>159</sup>

Where the FCC decided not to include a service in the universal service package, the first and second factor weighed prominently in the decision. Either the service had

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Indeed, the F.C.C. has granted waivers of various rules pertaining to universal service. *See e.g., Cellular South's petition for waiver, Order, 2007 F.C.C. LEXIS 2534 (March 29, 2007) (granting waiver of sections 54.904(d) of the Commission's rules to enable Cellular South to receive Interstate Common Line Support as of its ETC designation date).*

<sup>158</sup> *Ibid.* at 112- 123.

<sup>159</sup> *First Report & Order*, 12 F.C.C. Rcd. at 8815.

diminutive subscribership, the education, public health, and public safety benefits were not apparent, or both. Soft dial tones, for example, had no residential subscribers.<sup>160</sup> With unlimited local usage, a service subscribed to by substantial majority of Americans, the Board found that the service was not essential for education, public health and public safety and no commenter rebutted this finding.<sup>161</sup> Finally, with N11 Codes, or abbreviated dialing arrangements, the FCC found that they were not subscribed to by a substantial majority of Americans and that the Codes were not essential for education, public health, or public safety because consumers could access the services by dialing the seven or ten digit number.<sup>162</sup>

With broadband, however, the first and second criteria weigh in favor of inclusion. Developments over the last five years have revealed the essential role broadband plays in education, public health and public safety. The third criterion has arguably already been met, or will soon be met, especially in cities. Furthermore, the fact that the “consumer choice” has been thwarted by high costs and limited availability reveals that universal service is needed to bring the same level of services to all Americans.

Finally, despite the problem of costs and technological neutrality, inclusion of broadband on the whole advances the public interest. Many public interest benefits for individual consumers and the economy weigh in favor of adding broadband to the list of core services. And the high cost of deployment to rural areas may ultimately indicate that

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<sup>160</sup> 2003 Order, 18 F.C.C. Rcd. at 15, 097.

<sup>161</sup> *Ibid.*

<sup>162</sup> *Ibid.*

universal service funding is necessary. Moreover, economic benefits in the form of consumer surplus may far exceed costs.

**E. Reverse Auctions: Appealing In Theory But Implementation May Not Achieve the Desired Result of Stabilizing the Fund While Maintaining the Principles of Universal Service**

One of the underlying structural problems facing the universal service fund is the presence of portable subsidies, which are both a blessing and a burden. Encouraging competition by providers for basic service subsidies also produces competition in secondary services such as voice mail or bundled long distance calling plans. This increased competition in vertical market segments benefits consumers by lowering the prices for such services. However, each ILEC customer defection to an ETC causes the per-line subsidy to increase, ballooning the total size of the fund.

Portable subsidies also complicate matters by allowing a single customer to receive service from multiple universal service-supported carriers. In many supported service areas it is possible that members of a household will have a single residential fixed line provided by the ILEC, and one (or several) cellular phones provided by wireless ETC's.

One previously discussed option to reign in costs associated with multiple carriers is to allow each customer to designate a "primary line", thus converting the USF support into a voucher. The carrier providing that line would then receive that customer's per-line share of universal support, while the company (or companies) that provides the customer's secondary line would not receive support for their services. During the debate

over the 1996 Act, Senator John McCain (R-AZ) introduced an amendment that would establish primary line subsidies, but it was defeated.<sup>163</sup>

In 2004, the Federal-State Joint Board proposed limiting USF support to just a single customer-designated primary line.<sup>164</sup> However, the Commission never acted on this recommendation. The Joint Board members who dissented in the 2004 decision were concerned that the designation of a single USF eligible line would discourage investment in rural areas, as well as be administratively difficult to implement.<sup>165</sup> Prior to issuing the recommendation, the Joint-Board received a letter from Senators of both parties stating that a primary line designation policy would be “a major step backward that would thwart the essential purpose of universal service”.<sup>166</sup> Thus it appears that a voucher system for controlling the growth of ETC-related costs may not be politically feasible.

The Joint Board currently seeks comment on the use of “reverse auctions” to determine universal service support. A reverse auction system, in theory, limits competition while also reducing information-asymmetry related costs.

The idea of using reverse auctions to determine universal service fund allocations has been under consideration ever since the 1996 Act became law. The California Public Utilities Commission undertook a study of the proposal, concluding, “an auction

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<sup>163</sup> S. Rep. No. 1276, 141 Cong. Rec. 8266, 1995 (text of amendment); No. 251, 104<sup>th</sup> Cong., 1<sup>st</sup> Sess., 141 Cong. Rec. D719, 1995 (vote on amendment).

<sup>164</sup> “Recommended Decision”, Federal-State Joint Board on Universal Service, 19, FCC Rcd 4257, 2004.

<sup>165</sup> See dissenting statement of Comms. Adelstein, Thompson, and Rowe, in “Recommended Decision”, *Ibid.*

<sup>166</sup> *Ibid.* referencing a December 18<sup>th</sup> 2003 letter from Senators Dorgan, Burns, Snowe, Johnson, Baucus, Lincoln and Daschle.

mechanism appears to be the most efficient mechanism for reviewing the subsidy amounts in the future”.<sup>167</sup>

Though the idea of reverse auctions is appealing from a theoretical standpoint, and may be more acceptable politically than vouchers,<sup>168</sup> the idea remains untested and is fraught with potential program design hazards. The design of the program is critical to prevent “gaming” by potential bidders. In the “Discussion Example” reverse auction proposal offered by the Commission, the auction would have 2 winners: a voice/broadband carrier and a voice/mobility carrier. However, in many study areas this could create an incentive for the incumbent LEC to overbid, knowing that no other fixed line provider is in a position to provide voice and data service. Wireless carriers could recognize that competing in each other’s established service areas leads to lower profits, and they might have an incentive to only bid and overbid in certain service areas. A proposal by ALLTEL suggests supporting all ETCs at the lowest bid -- a system that invites overbidding. In general, if an area is already unserved or underserved, there seems to be incentives for overbidding. This is in part because ILECs who have already constructed networks have low short-term marginal costs. New competitors may find it hard to compete in auctions against this historical sunk-cost advantage. ILECs may recognize this and bid over what their true costs are, but under the true costs that would be incurred by a new entrant.

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<sup>167</sup> See California Public Utilities Commission, “Rulemaking on the Commission's Own Motion into Universal Service and to Comply with the Mandates of Assembly Bill 3643; Motion of the Office of Ratepayer Advocates for a Ruling Requiring Expedited Review of the Cost Proxy Model Results”, R.95-01-020, January 24<sup>th</sup> 1995.

<sup>168</sup> “FCC's Martin Likes 'Reverse Auction' for Universal Service”, State Telephone Regulation Report, April 07, 2006.

Other design problems exist. If the contract length of service support is too short, carriers will have reduced incentive to make capital investments or provide a high-level of customer care and support. If the contract term is too long it locks out new innovative competitors that could provide the supported services at far lower cost. The geographic size of the auction area also matters. If it is too large it may favor ILECs, as their service footprints tend to not overlap with CLECs, MSOs and cellular provider's service areas. If the geographic scope is too small it raises transaction costs and may inhibit bids that would otherwise be produced based on economies of scale (i.e. a carrier might be more likely to bid if they know they will also win the auction in adjacent service areas).

An auction for universal service support could be designed to maintain some level of competition within a given geographical area. Instead of awarding support to the lowest bidder, the Commission could design a process that would award subsidies to the lowest bidder plus all other bidders within a certain range of that figure.<sup>169</sup> But this built-in *ex ante* competition comes with a trade-off: the benefits of in-market competition and the costs associated with giving subsidies to less efficient bidders.

Finally, some academics contend that when actually implemented, reverse auctions simply do not work and do not result in the awarding of service contracts to the lowest cost, most efficient bidder.<sup>170</sup>

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<sup>169</sup> A proposal by GTE to the CPUC in 1997 designed this as “if at least one bid does not exceed the lowest bid by more than 15 percent of the sum of the lowest bid and the basic service price, then all bids within that range will be accepted; if no competing bid is within the range described above, but one is within 25 percent, then the two lowest bids will be accepted.” See “Comments of GTE submitted to the California Public Utilities Commission, Auction Proposals for Universal Service”, 1997.

<sup>170</sup> Darrell Dunn, “Reverse Auctions Fail to Deliver on Their Promise”, *Information Week*, September 8, 2003.

If the Commission chooses to implement a system of reverse auctions it should proceed with caution, perhaps only testing the system in a few select service areas. But if the Commission ultimately moves away from a system of portable subsidies, then it must ensure that consumers living in high-cost areas continue to experience the benefits of competition. Open access policy will maintain the benefits of competition in a world of limited infrastructure support.

**F. The Fund Should Support Infrastructure. Open Access Policy Will Promote Competition In Supported Areas**

If the Commission arrives at the conclusion that supporting redundant infrastructure is not beneficial to the mission of universal service, then it must do something to ensure that citizens living in rural and high-cost areas are not left paying monopoly prices on complementary services. Open access policy is the ideal way to maintain competition in markets with natural monopoly characteristics, such as telecommunications networks.

Open access is the principle that once led the United States to world leadership in communications and this is very likely the only principle that can put America back at the top of international IT rankings. Open access is not a novel principle to U.S. policymakers. Indeed, the open access system designed in the U.S. in the 1990s served as a model for European regulators. The result in Europe has been the expansion of broadband competition, exemplified by faster speeds and lower prices. In Europe it is common for several wireline providers to offer competing services on the same facilities.<sup>171</sup>

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<sup>171</sup> Comments of Time Warner Telecom, Inc at 60, GN Docket No. 07-45.

Though the Commission has turned away from open access in recent years, there is compelling reason to adhere to this principle if the USF is to be expanded to support advanced telecommunications technology. If it is economically inefficient to support multiple infrastructure providers, then it is also inefficient to allow a monopoly provider to operate in an unfettered manner. Open access will enable competition at the applications layer, which in turn will entice more customers to join or stay on the network. This will result in an overall lower per line cost and help stabilize the fund.

**G. The Current System of ETC Support is Inefficient.  
Eliminating the Identical Support Rule May Be Warranted**

The Fund, as currently structured, provides support to any carrier that is willing to serve all customers within a defined area, and who is also designated as an “Eligible Telecommunications Carrier” (ETC) by a state regulatory agency or by the Commission. ETC’s can include both wireless and CLEC carriers, who ultimately compete head-to-head with the ILECs for low-cost customers. Therefore, the high-cost subsidy is portable. The need for portable subsidies stems from the fact that in some areas, the retail service price is held (by regulators) below actual costs. If a new market entrant were only as efficient as the incumbent, then competition would not be possible. The portable subsidy covers the deficit between cost and price.

Portable subsidies are an attempt to encourage competition in local markets. But they come with a trade-off. An increase in competition translates into the need for increased funds to subsidize the ETC and reimburse the ILEC for its revenue loss. This is because as the ILEC’s customer base shrinks in the face of competition, it must recover its fixed costs from fewer lines. This increases the ILEC’s overall per line cost. In turn,

this translates into a higher per-line subsidy, which is also available to the ETC competitor.

But the subsidy is currently based on the incumbent's, not the competitor's cost. This so-called "identical support rule" is very problematic from an economic efficiency standpoint, and may be one of the primary causes of the exponential growth in the size of the high-cost fund. Previous commenters justified using a system of identical support for several reasons such as predictable, auditable costs, and technological neutrality.<sup>172</sup> The most important justification for identical support was that it would encourage competition.

However, the marketplace is a much different place now than it was a decade ago. The exponential growth in the high-cost fund is largely attributable to wireless carriers. Given that these carriers have now deployed infrastructure in many study areas, the benefits of continued identical support remain unclear. As stated above, supporting infrastructure is the primary purpose of the fund. Once infrastructure is in place, competition can be maintained through the use of open access policy.

### **III. CONCLUSION**

There are no easy solutions to correcting the problems of the Universal Service Fund. But they must be addressed based on the same principle that has always guided progressive communications policy -- a commitment to ubiquitous, affordable access to the most important technologies of the era. Broadband unquestionably qualifies as the dominant communications service of the 21st century. The benefits of applying USF to broadband outweigh the costs by a wide margin. Without a strong, comprehensive policy

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<sup>172</sup> Comments of Pacific Telecom, in the Matter of Federal-State Joint Board on Universal Service, CC Docket No. 96-45, December 19, 1996.

commitment to developing our broadband markets, we cannot hope to correct the problems that have plunged us down the ranks of global competitiveness. We need policies that give the “green light” to investment in communications infrastructure in rural and low-income America with a strong commitment to accountability, efficiency, and oversight. We strongly encourage the Joint Board and the Commission to uphold the remarkable and progressive commitment to Universal Service that is the foundation of our communications policy.

Respectfully submitted,

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