

Before the  
**Federal Communications Commission**  
Washington, DC 20554

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In the Matter of	)	
Review of the Section 251 Unbundling	)	
Obligations of Incumbent Local Exchange	)	CC Docket No. 01-338
Carriers	)	
	)	
Implementation of the Local Competition	)	
Provisions of the Telecommunications Act	)	CC Docket No. 96-98
Of 1996	)	
	)	
Deployment of Wireline Services Offering	)	
Advanced Telecommunications Capability	)	CC Docket No. 98-147

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**REPLY COMMENTS OF HIGH TECH BROADBAND COALITION**

Business Software Alliance

Consumer Electronics Association

Information Technology Industry Council

National Association of Manufacturers

Semiconductor Industry Association

Telecommunications Industry Association

July 17, 2002

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**REPLY COMMENTS OF HIGH TECH BROADBAND COALITION**

The High Tech Broadband Coalition (“HTBC”) hereby submits the following Reply Comments in response to the *Notice of Proposed Rulemaking* (“NPRM”) released in the above-captioned proceeding concerning the Federal Communications Commission’s (“FCC” or “Commission”) unbundling rules.<sup>1</sup> In its Comments, HTBC urged the Commission to refrain from imposing Section 251 unbundling obligations on new, last-mile broadband facilities, including fiber, remote terminals, and digital subscriber line (“DSL”) (and successor) electronics deployed on the customer side of the central office. At the same time, HTBC recommended that the FCC continue to require incumbent local exchange carriers (“ILECs”) to provide competitive

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<sup>1</sup> *Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers, Implementation of the Local Competition Provisions of the Telecommunications Act of 1996, Deployment of Wireline Service Offering Advanced Telecommunications Capability, Notice of Proposed Rulemaking, CC Docket Nos. 01-338, 96-98, 98-147, FCC 01-361 (rel. Dec. 20, 2001).*

local exchange carriers (“CLECs”) with collocation space and unbundled access to ILECs’ legacy copper facilities, as well as establish ILEC build-out percentage and bandwidth requirements. In support of its proposal, HTBC asserted that the Section 251 impair standard set forth in Section 251(d)(2) of the Communications Act of 1934, as amended (“Act”), is not met with respect to ILECs’ new, last-mile broadband facilities because ILECs have no unfair advantage over CLECs in deploying new broadband facilities, and CLECs can provide broadband services to consumers over alternative broadband platforms. In addition, HTBC noted that excluding ILECs’ new, last-mile broadband facilities from Section 251 unbundling will promote broadband deployment in compliance with Section 706 of the Telecommunications Act of 1996 (“1996 Act”).<sup>2</sup> Therefore, in its Reply Comments, HTBC again strongly urges the Commission to expeditiously implement HTBC’s proposal and to find that ILECs’ new, last-mile broadband facilities are not subject to Section 251 unbundling. Any delay in the issuance of such a decision will only exacerbate the problems currently facing the technology and telecommunications manufacturing industries to the detriment of workers, companies, and investors.

## **I. INTRODUCTION AND SUMMARY**

The telecommunications industry is experiencing an investment-led downturn of historic proportions. This downturn is having a profound effect on industry employment and broadband technology diffusion. A precipitous decline in investment has driven the decline. Capital expenditures for the industry have declined from \$113 billion in 2000, to \$93 billion in 2001, to

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<sup>2</sup> Telecommunications Act of 1996, Pub. L. No. 104-104, 110 Stat. 56 (1996).

an estimated \$51 billion in 2002.<sup>3</sup> HTBC strongly believes that the FCC can reverse the negative tide by determining in this proceeding that ILECs' new, last-mile broadband facilities are not subject to Section 251 unbundling. HTBC urges the Commission to act expeditiously to reverse this downward investment trend by adopting its proposal. Failure to do so will impose avoidable harm on workers, companies, and investors in this sector.

Despite the fact that much has changed in the telecommunications industry since the FCC's last UNE proceeding, ILECs and CLECs continue to make essentially the same arguments. CLECs argue they need unbundled access to all aspects of the ILECs' networks, while ILECs claim that almost no part of their networks should be unbundled. In contrast and in recognition of the numerous technological and economic developments that have occurred over the past three years, HTBC proposes a balanced approach that will increase the deployment of broadband infrastructure while maintaining significant safeguards to ensure continued competitive access and will promote widespread broadband deployment.

In order to focus the incentive for investment on broadband infrastructure, HTBC purposely limited its proposal to new, last-mile broadband facilities, including fiber, remote terminals, and DSL (and successor) electronics deployed on the customer side of the central office. Adoption of HTBC's proposal will promote the deployment of these facilities in compliance with the congressional directive to the Commission. At the same time, the Commission must continue to require ILECs to provide CLECs with collocation space and unbundled access to their legacy copper facilities, as well as establish ILEC build-out percentage and bandwidth requirements. By giving CLECs unbundled access to ILECs' legacy facilities,

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<sup>3</sup> James P. Parmelee, *Telecom Equipment - Wireline Update* at 2, Credit Suisse First Boston, June 26, 2002.

the Commission will ensure that CLECs can continue to compete against ILECs in the provision of local telephone service. And, by implementing provider-specific bandwidth and deployment benchmarks in conjunction with a determination that ILECs' new, last-mile facilities are not subject to Section 251 unbundling, the Commission will facilitate the proper foundation to meet the facilities-based deployment goals of the 1996 Act. Thus, adoption of HTBC's proposal is appropriate because it will: (a) eliminate the investment disincentives created by current unbundling and prospective additional unbundling obligations; (b) encourage greater CLEC and ILEC deployment of broadband facilities and equipment; and (c) provide a critical jumpstart to the economy and the beleaguered telecommunications equipment manufacturing sector. Accordingly, the HTBC proposal accommodates two key objectives of the 1996 Act—the acceleration of competition in the provision of local exchange and exchange access services and the promotion of broadband deployment—and, thus, complies with both Sections 251 and 706.<sup>4</sup>

Both the record compiled in this proceeding and the D.C. Circuit's recent decision in *United States Telecommunications Association v. FCC*, which reversed and remanded the *UNE Remand Order*<sup>5</sup> and the *Line Sharing Order*<sup>6</sup> to the Commission,<sup>7</sup> support HTBC's contentions

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<sup>4</sup> 47 U.S.C. § 251; 1996 Act, Title VII § 706 (reproduced in the notes under 47 U.S.C. § 157).

<sup>5</sup> *Implementation of the Local Competition Provisions of the Telecommunications Act of 1996*, Third Report and Order and Fourth Further Notice of Proposed Rulemaking, 15 FCC Rcd 3696 (1999) ("*UNE Remand Order*").

<sup>6</sup> *Deployment of Wireline Services Offering Telecommunications Capability and Implementation of the Local Competition Provisions of the Telecommunications Act of 1996*, Third Report and Order in CC Docket No. 98-147, Fourth Report and Order, 14 FCC Rcd 20912 (1999) ("*Line Sharing Order*").

<sup>7</sup> *United States Telecom Association v. FCC*, 290 F.3d 415 (D.C. Cir. 2002) ("*USTA v. FCC*").

that Section 251 unbundling deters investment in broadband infrastructure. In *USTA v. FCC*, the D.C. Circuit specifically recognized that existing Section 251 unbundling obligations and the prospect of additional unbundling requirements impede ILEC investment in new facilities and equipment needed to expand the reach of DSL offerings and to increase the speed of these offerings. This conclusion is further buttressed by the economic study that Corning submitted with its comments<sup>8</sup> and by the economic study performed by Drs. Haring and Rohlfs (attached hereto as Appendix A).<sup>9</sup>

In addition to affirming HTBC's assertions regarding the investment disincentives, the *USTA v. FCC* decision supports HTBC's interpretation of the impair standard set forth in Section 251(d)(2) as requiring consideration of intermodal competition. The D.C. Circuit found that the relevant market for purposes of determining appropriate regulatory policies is the market for broadband services, not that for DSL service. In addition, the court clarified that, while cost differentials are relevant to the impairment analysis, the FCC must consider only those differences that "would make genuinely competitive provision of an element's function wasteful" and not those that may be found in any industry with incumbents and new entrants.<sup>10</sup>

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<sup>8</sup> Cambridge Strategic Management Group, *Assessing the Impact of Regulation on Deployment of Fiber to the Home: A Comparative Business Case Analysis* (Apr. 5, 2002) ("*Corning Study*"), attached as exhibit I to Comments of Corning, Inc., Review of the Section 251 Unbundling Obligations of the Incumbent Local Exchange Carriers, CC Docket No. 01-338, (filed Apr. 5, 2002) (all comments filed in this proceeding in CC Docket No. 01-338 were filed on April 5, 2002 unless otherwise noted).

<sup>9</sup> John Haring and Jeffrey H. Rohlfs, *The Disincentives for ILEC Broadband Investment Afforded by Unbundling Requirements* (July 16, 2002) ("*Haring-Rohlfs Study*").

<sup>10</sup> *USTA v. FCC*, 290 F.3d at 427.



Applying the impair standard as interpreted by the D.C. Circuit, the Commission must conclude that Section 251 unbundling obligations do not extend to ILECs' new, last-mile broadband facilities. CLECs are not impaired in their provision of broadband services by a lack of access to these facilities. As the D.C. Circuit has recognized, customers can choose from multiple broadband platforms, including cable and satellite. Further, CLECs and ILECs are in the same position with respect to deployment of their own new broadband facilities. Both CLECs and ILECs are able to obtain fiber and other broadband electronics from manufacturers at competitive rates. Even assuming, as some commenters allege, that disparities between ILEC deployment costs and CLEC deployment costs exist, they are the kind of universal disparities that exist between incumbents and new entrants in any industry. The court explicitly found these differences insufficient to justify the imposition of Section 251 unbundling obligations.<sup>11</sup>

Even under the less stringent standard adopted in the *UNE Remand Order*, ILECs' new, last-mile broadband facilities do not satisfy the impair standard of Section 251(d)(2) and thus should not be subject to Section 251 unbundling.<sup>12</sup> HTBC demonstrated in its Comments that the FCC must consider the many intermodal alternatives to the ILECs' DSL services in the impairment analysis. Further, the Commission must acknowledge that ILECs possess no competitive advantage over CLECs in the deployment of new, last-mile broadband facilities. In view of these considerations, the Commission must find that CLECs are not impaired without access to these facilities. Even if the Commission were to make a contrary finding, the "at a minimum" language of Section 251(d)(2) provides the FCC with the discretion to exempt

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<sup>11</sup> *Id.*

<sup>12</sup> 47 U.S.C. § 251(d)(2).

ILECs' new, last-mile broadband facilities from Section 251 unbundling in order to further the objectives of the 1996 Act.<sup>13</sup> Section 706 compels the FCC to take such action in order to promote broadband deployment.

Because ILECs' new, last-mile broadband facilities do not meet the impair standard, HTBC urges the FCC to adopt its proposal and find that these facilities are not subject to Section 251 unbundling. Notwithstanding some commenters' arguments that Section 251 does not permit the FCC to draw a distinction between new and old facilities, the Commission has the legal authority to do so. Section 251(d)(2) requires the FCC to analyze separately whether CLECs are impaired without access to each network element and thus permits the FCC to conclude that Section 251 requires unbundling of certain network elements but not others.<sup>14</sup> Further, the record in this proceeding supports drawing of such a distinction and eliminating unbundling of those facilities with respect to which competitive alternatives exist and for which ILECs have no unfair competitive advantage.

The FCC also must clarify that Sections 251 and 261 prohibit states from imposing unbundling obligations on such facilities.<sup>15</sup> Eliminating this potential source of regulatory uncertainty will promote broadband deployment. In sum, a determination that ILECs' new, last-mile broadband facilities are not subject to Section 251 unbundling not only will adhere to the *UNE Remand Order* and the D.C. Circuit's interpretation of the impair standard in *USTA v.*

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<sup>13</sup> *Id.*

<sup>14</sup> *Id.*

<sup>15</sup> 47 U.S.C. §§ 251(d)(2), 251(d)(3) & 261(c).

*FCC*, and be consistent with the record in this proceeding, but also will comply with the requirements of Section 706 of the 1996 Act.

**II. IN THE *USTA* DECISION, THE D.C. CIRCUIT AFFIRMED HTBC'S VIEWS REGARDING THE BROADBAND MARKETPLACE.**

**A. The D.C. Circuit Confirmed That Section 251 Unbundling Deters Investment.**

In *USTA v. FCC*, the D.C. Circuit recognized that Section 251 unbundling creates investment disincentives. Specifically, the court stated that, “[i]f parties who have not shared the risks are able to come in as equal partners on the successes, and avoid payment for the losers, the incentive to invest plainly declines.”<sup>16</sup> The court also noted that “[e]ach unbundling of an element imposes costs of its own, spreading the disincentive to invest in innovation and creating complex issues of managing shared facilities.”<sup>17</sup> This decision not only affirms the validity of the arguments made by HTBC in its Comments, but also is consistent with the evidence submitted in this proceeding.

In its Comments, HTBC argued that ILECs have reached an inflection point with respect to their DSL services.<sup>18</sup> To improve upon the speed and reach of current DSL services, ILECs and other companies must invest billions of dollars in new fiber and broadband electronics. However, current unbundling obligations and the prospect of additional Section 251 unbundling requirements applicable to broadband network elements discourage ILECs from making such investments by reducing the potential benefits and denying ILECs the flexibility to design and

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<sup>16</sup> *USTA v. FCC*, 290 F.3d at 424.

<sup>17</sup> *Id.* at 427.

<sup>18</sup> Comments filed by High Tech Broadband Coalition (“HTBC”).

deploy broadband facilities and equipment in a cost-effective and efficient manner. In *USTA v. FCC*, the D.C. Circuit acknowledged that mandatory unbundling has both of these effects.

The record demonstrates that, despite some CLECs' arguments to the contrary,<sup>19</sup> the D.C. Circuit correctly concluded that Section 251 unbundling creates *real* disincentives to investment. First, as other commenters—including CLEC, Allegiance Telecom, Inc.—note, ILEC investment in broadband deployment is waning.<sup>20</sup> For example, in 2001, SBC not only halted “further deployment and activation of new facilities in Illinois that would have made high-speed Internet access available to over a million Illinois consumers beyond the 12,000 foot range of traditional DSL,”<sup>21</sup> but also announced that it would “reduce capital spending by 20 percent in 2002 and scale back its original deployment schedule for Project Pronto.”<sup>22</sup> Further, Verizon acknowledges having “significantly constrained” deployment of DSL capability in its remote

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<sup>19</sup> A number of commenters argued that, in spite of or perhaps because of the current unbundling requirements, ILECs are still widely investing in broadband deployment. Comments filed by: Allegiance at 15-16; ALTS at 9-10; Covad at 8-15. In addition to being factually incorrect, these assertions are irrelevant. The D.C. Circuit rejected similar assertions in *USTA v. FCC*, ruling that “the existence of investment of a specified level tells us little or nothing about incentive effects.” *USTA v. FCC*, 290 F.3d at 425. Moreover, in any event, as noted above, investment is declining. While cable modem service is available to 70 percent of U.S. households, DSL service is available only to 40 percent.

<sup>20</sup> Comments filed by: Allegiance at 17; Catena at 3; Corning at 3, Fiber-To-The-Home (“FTTH”) Council at 2; Next Level at 5, 11.

<sup>21</sup> Letter from Ed. E. Whiteacre, Jr., Chairman and CEO, SBC Communications, Inc., to The Honorable J. Dennis Hastert, Speaker, U.S. House of Representatives, at 1 (Mar. 14, 2001).

<sup>22</sup> *SBC Outlines Comprehensive National Broadband Policy*, Press Release (Dec. 19, 2001) [http://www.sbc.com/press\\_room/1,5932,31,00.html?query=20011219-1](http://www.sbc.com/press_room/1,5932,31,00.html?query=20011219-1) (last visited July 15, 2002). While some commenters point to SBC's “success” in the DSL market as demonstrating that the current regulatory environment is conducive to and does not impede investment, it is the current regulatory environment that has forced SBC to scale back its broadband plans. Comments filed by California Public Utilities Commission at 8.

terminals,<sup>23</sup> and Qwest has announced that it will not introduce DSL into any new markets within its territory.<sup>24</sup>

Second, the record evidence and economic studies submitted by commenters demonstrate that it is the current and potential unbundling obligations that are undercutting investment in broadband deployment. In its comments, Next Level noted that, while ILECs not subject to Section 251 unbundling obligations are making extensive use of its high-speed subscriber line platform, Qwest's deployment of this technology has been "hampered by a regulatory regime that has made widespread deployment uneconomical."<sup>25</sup> Catena Networks observed that the ILECs "are deferring deployment of new broadband technology because of concerns over the uncertainty of FCC regulation ...."<sup>26</sup> As explained by Alcatel, "ILECs recognize that under the present rules a substantial capital investment in the local telecommunications infrastructure needed to increase broadband capabilities includes all of the risk with a limited return and such [ ] investment would be contrary to their fiduciary duty and potentially a disservice to [their] shareholders."<sup>27</sup> Consistent with this, the *Corning Study* found that both CLECs and small

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<sup>23</sup> Letter from Thomas J. Tauke and Michael E. Glover, Verizon Communications, to Honorable Michael Powell, Chairman, Federal Communications Commission, at 4 (Nov. 6, 2001).

<sup>24</sup> Gary H. Arlen, *Broadband Sector Is Fastest-Growing As Online Audience Climbs Back To 69.3 Million Amid Price, Service Overhauls*, TR's Online Census, at 5 (Feb. 2002).

<sup>25</sup> Comments filed by Next Level at 5, 6-7.

<sup>26</sup> Letter from Stephen L. Goodman, Counsel for Catena Networks, Inc., to William Caton, Secretary, Federal Communications Commission, at 2 (dated Mar. 14, 2002).

<sup>27</sup> Comments filed by Alcatel at 11.

ILECs lead the Bell Operating Companies (“BOCs”) in fiber to the home (“FTTH”) deployment.<sup>28</sup>

Similarly, the *Haring-Rohlf's Study* determined that current and potential Section 251 unbundling requirements will deter ILECs from investing roughly \$20 billion in deployment of new, last-mile broadband facilities.<sup>29</sup> Drs. Haring and Rohlf's developed a quantitative model to demonstrate how unbundling requirements reduce ILEC investment incentives. The model illustrates how the current unbundling regime forces the ILECs to confer a valuable “real option” on CLECs, allowing them to “offload investment risk on the ILEC[s].”<sup>30</sup> In the risk-laden broadband market, this real option is highly valuable to the CLECs and dramatically reduces the expected value of the ILECs’ investment in new, last-mile broadband facilities.<sup>31</sup>

To resolve uncertainties in the development of broadband applications, the *Haring-Rohlf's Study* examines two possible scenarios. Under Scenario 1, DSL prices continue to fall because

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<sup>28</sup> *Corning Study* at 4, 51. The *Corning Study* reported that CLECs have deployed FTTH to approximately 26,000 homes and small ILECs have deployed this technology to 650 homes. In contrast, the *Corning Study* found that the BOCs have deployed FTTH to only 400 homes. Further, the *Corning Study* “estimate[s] that [fiber to the home] could be economically deployed in 31% of households in a free market compared to 5% of households under regulation (roughly a 6X differential).”

<sup>29</sup> *Haring-Rohlf's Study* at 15. “[Infrastructure investments that support mass DSL deployment] are necessary only to supply DSL service in geographic areas where DSL could otherwise not be supplied. The ILEC may, of course, be subject to competitive pressure from cable in such areas. But it can be subject to competitive pressure *from CLECs* (or DLECs) only if it makes the infrastructure investments in the first place. It is absurd to argue that competitive pressures from CLECs stimulate such investments.” *Id.* at 5.

<sup>30</sup> *Id.* at 1. Under a “real option” scenario, ILECs must make irreversible investments in new network service capabilities before market uncertainties are resolved, while CLECs “can wait until the uncertainties are resolved before choosing whether to purchase UNEs.” *Id.* at 1.

<sup>31</sup> *Id.* at 2-3.

valuable new applications have not developed, which leads to no UNE-based CLEC entry and ILECs alone bearing all losses.<sup>32</sup> Under Scenario 2, demand for DSL substantially increases because valuable new applications have developed, which attracts UNE-based CLEC entry.<sup>33</sup> Drs. Haring and Rohlfs examined how such entry is likely to affect the profitability of Scenario 2 and the ILECs' incentives to make the necessary initial investment. They estimate both an ILEC's and a CLEC's cost and DSL prices (under favorable and unfavorable conditions).

Comments submitted in this proceeding and information available from other sources strengthen the results in Drs. Haring and Rohlfs' quantitative model. In particular, the *Haring-Rohlfs Study* demonstrates that, absent unbundling requirements, the investment to support mass DSL deployment earns positive economic profits under the favorable Scenario 2 and negative economic profits in the unfavorable Scenario 1.<sup>34</sup> Thus, the cost-effectiveness of an ILEC's investments depends on whether Scenario 2 or Scenario 1 is ultimately achieved.<sup>35</sup> Indeed, without unbundling requirements, wherever the probability of Scenario 2 is greater than 33 percent, the investment to support mass DSL deployment is cost-effective because expected economic profits are positive.<sup>36</sup>

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<sup>32</sup> *Id.* at 7.

<sup>33</sup> *Id.*

<sup>34</sup> *Id.* at 12.

<sup>35</sup> *Id.*

<sup>36</sup> *Id.* With unbundling requirements, the economics are very unfavorable because, under Scenario 2, UNE-based CLECs are able to make a profit of \$10 per line and still undercut the ILECs' prices by \$13 per month. *Id.*

Further, Drs. Haring and Rohlf's note that the *Corning Study* presents “a convincing case that investments to support FTTH could become cost-effective in the near future, but not with the current unbundling requirements. If unbundling requirements deter, or even substantially delay FTTH, the cost to the economy would be enormous.”<sup>37</sup> In sum, the *Haring-Rohlf's Study* concludes that unbundling requirements “afford severe disincentives” for ILEC infrastructure investment in broadband.<sup>38</sup>

Those commenters that acknowledge the decline in ILEC investment wrongly attribute it to a lack of DSL competition and/or the recession.<sup>39</sup> The lack of DSL competition has not caused the severe drop off in ILEC investment. The ILEC investment generally at issue here is investment in new, last-mile broadband facilities (*i.e.*, new, last-mile fiber and remote terminals) that will extend the reach and speed of ILECs' DSL offerings. UNE-based CLEC competition provides no competitive spur for ILEC deployment of new broadband facilities and equipment; these carriers only compete in areas where the ILEC itself can already compete.<sup>40</sup> Thus, competitive pressure only comes from other facilities-based providers such as cable, fixed wireless, and satellite broadband.

As the D.C. Circuit confirmed in *USTA v. FCC*, the imposition of unbundling requirements on ILECs' new, last-mile broadband facilities discourages ILEC investment in those facilities. Both basic economic theory and market evidence show that CLEC claims to the

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<sup>37</sup> *Id.*

<sup>38</sup> *Id.*

<sup>39</sup> Comments filed by Allegiance at 17.

<sup>40</sup> *Haring-Rohlf's Study* at 5.



contrary are incorrect. Thus, to comply with the D.C. Circuit's unbundling conclusions—and meet its statutory obligations under Section 706—the Commission must find that unbundling obligations do not apply to ILECs' new, last-mile broadband facilities.

**B. The D.C. Circuit Found That Broadband—Not DSL—Service Is The Relevant Market.**

HTBC also argued that the relevant market for purposes of determining the state of competition and appropriate regulatory policies is the market for broadband services—not the market for DSL service or even wireline broadband services.<sup>41</sup> In *USTA v. FCC*, the D.C. Circuit confirmed this conclusion.<sup>42</sup> The court determined that the Commission erred in ordering unbundling of the high frequency portion of the copper loop because it “completely failed to consider the relevance of competition in broadband services from cable (and to a lesser extent satellite).”<sup>43</sup> Thus, arguments that the Commission should not consider intermodal competition in its unbundling analysis<sup>44</sup> must be rejected.

The FCC must also disregard AT&T and other commenters' reliance upon an alleged lack of DSL competition to support broadband unbundling obligations. Relying on the FCC's conclusions regarding advanced services, the D.C. Circuit in *USTA v. FCC* made clear that the relevant market for purposes of the Section 251 unbundling analysis is the broadband market.<sup>45</sup>

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<sup>41</sup> Comments filed by HTBC at 21.

<sup>42</sup> *USTA v. FCC*, 290 F.3d at 428-429.

<sup>43</sup> *Id.* at 428.

<sup>44</sup> Comments filed by: ASCENT at 26; AT&T at 39-40; CLEC Coalition at 20; Covad at 33; Indiana URC (“IURC”) at 9 (filed March 18, 2002); WorldCom at 60; Z-Tel at 24.

<sup>45</sup> *USTA v. FCC*, 290 F.3d at 428-29.

Further, many of the arguments that focus on DSL competition are fundamentally flawed. Some CLECs imply that UNE-based competition will stimulate ILEC investment in broadband facilities.<sup>46</sup> However, as discussed above, the ILEC investment generally at issue is investment in new, last-mile broadband facilities (*i.e.*, new, last-mile fiber and remote terminals). UNE-based competition provides no competitive spur for ILEC deployment of these facilities because such competition is based on access to *existing* ILEC facilities.<sup>47</sup>

**C. The D.C. Circuit Determined That The Broadband Market Is Becoming Competitive.**

The D.C. Circuit also found that the broadband market is becoming competitive. In so doing, it noted that “[t]he Commission’s own findings (in a series of reports under § 706 of the 1996 Act) repeatedly confirm both the robust competition, and the dominance of cable, in the broadband market.”<sup>48</sup> The record in this proceeding supports the court’s determination. In their comments, HTBC, Alcatel, and Corning noted that broadband competition is growing and that

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<sup>46</sup> Comments filed by: AT&T at 65-66; Covad at 14-15; Competitive Telephone Association (“CompTel”) at 7, 37; CLEC Coalition at 19; Maine CLECs at 2-3.

<sup>47</sup> *Haring-Rohlf’s Study* at 5.

<sup>48</sup> *USTA v. FCC*, 290 F.3d at 428.

cable companies currently lead the market.<sup>49</sup> HTBC stated that “xDSL faces competition from cable modem service, the current market leader, as well as emerging competition from new satellite and wireless services.”<sup>50</sup> The BOCs made similar observations and submitted detailed information regarding the relative levels of cable modem and DSL deployment and market penetration.<sup>51</sup> Those arguing for Section 251 unbundling of broadband facilities, on the other hand, did not submit any data that contravenes this evidence.

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<sup>49</sup> Comments filed by: HTBC at 21-26; Alcatel at 8 (“[I]nter-modal, facilities-based competition among telecommunications carriers, cable television operators, satellite, and fixed and mobile wireless providers, has created a competitive environment in which no one provider controls essential or bottleneck facilities or super-competitive market shares.”); Corning at 32 (“Fiber-to-the-home exists in a fully competitive marketplace, in which no carrier or provider has a dominant position.”). Even ALTS acknowledged that cable providers control “a significant percentage of the residential advanced services market.” Comments filed by ALTS at 40. *See also* comments filed by: Consumer Federation of America at 54 (noting that cable “has a 75 percent market share of advanced services in the residential/small business market”); NYDPS at 6 (noting “the success of cable broadband” and “the increasing popularity of wireless broadband”); Southwest Competitive Telecommunications Association (“SWCTA”) at 10 (noting the availability of cable modems, wireless Internet and satellite broadband services).

<sup>50</sup> Comments filed by HTBC at 22.

<sup>51</sup> Comments filed by: BellSouth at 36-37, 41 (filed April 8, 2002) (stating that broadband competition “is more than existent; it is thriving” and that cable is “the front runner provider of mass market broadband services”); Verizon at 16-17 (noting “there is vigorous broadband competition for both business and mass market customers, and the ILECs are insurgents rather than incumbents in the provision of broadband services”); Qwest at 41 (noting that “DSL service has a smaller market share than cable modem” and that broadband competition is “growing”); SBC at 55-56 (noting that the broadband market is “intensely competitive” and that cable has a “stranglehold on the broadband mass market”).

### III. THE HTBC PROPOSAL COMPLIES WITH SECTION 251(D)(2).

#### A. The Section 251(d)(2) Impair Standard As Interpreted By The D.C. Circuit Is Narrower Than The Commission's Current Reading Of This Standard.

In *USTA v. FCC*, the D.C. Circuit ordered the Commission to narrow its impair standard for Section 251 unbundling. The D.C. Circuit required the Commission to incorporate two critical factual considerations<sup>52</sup> into its impair standard: (1) “competition in broadband services;”<sup>53</sup> and (2) whether cost disparities are “linked (in some degree) to natural monopoly.”<sup>54</sup> As discussed in more detail below, the FCC may not find impairment by simply comparing the costs of non-UNE alternatives to the costs of UNEs because relying on “cost disparities that are universal as between new entrants and incumbents in *any* industry” is simply too broad a concept “to be reasonably linked to the purpose of the [1996] Act’s unbundling provisions.”<sup>55</sup>

The court also affirmed that the impair standard requires consideration of intermodal competition. Because of the existence of “robust competition and the dominance of cable in the

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<sup>52</sup> The D.C. Circuit also required the Commission to consider “market specific variations [for] competitive impairment.” *USTA v. FCC*, 290 F.3d at 422. Because broadband competition is thriving throughout the United States, consideration of this factor supports a total exclusion of ILECs’ new, last-mile broadband facilities from Section 251 unbundling.

<sup>53</sup> *Id.* at 428. As the Supreme Court noted in *Iowa Util. Bd.*, a proper impairment standard should be limited by the “goals of the Act.” *AT&T v. Iowa Util. Bd.*, 525 U.S. 366, 388 (1999).

<sup>54</sup> *USTA v. FCC*, 290 F.3d at 429.

<sup>55</sup> *Id.* at 427 (emphasis in original). In its comments, General Communication, Inc. argued that cost is the most important factor in the Commission’s impairment analysis. Comments filed by: General Communication, Inc. at 2, 24-28. The *USTA v. FCC* decision plainly rejects this notion. *See USTA v. FCC*, 290 F.3d at 428-30. The D.C. Circuit provided appropriately balanced guidance, indicating that “cost disparities that...are simply disparities faced by virtually any new entrant in any sector of the economy, no matter how competitive the sector” are not relevant cost considerations in the impairment analysis. *See Id.* at 426.

broadband market,”<sup>56</sup> the D.C. Circuit instructed the Commission to consider all broadband providers, not just DSL. Moreover, contrary to some commenters’ assertions,<sup>57</sup> the D.C. Circuit ruled that the Commission must examine the ramifications of unbundling on CLECs and ILECs alike.<sup>58</sup> Citing Justice Breyer’s views in *Iowa Util. Bd.*, the D.C. Circuit advised that “mandatory unbundling comes at a cost, including disincentives to research and development by both ILECs and CLECs and the tangled management inherent in shared use of a common resource.”<sup>59</sup> Accordingly, the court stated that “nothing in the [1996] Act appears a license to the Commission to inflict on the economy the[se] sort of costs...under conditions where it had no reason to think doing so would bring on a significant enhancement of competition. The Commission’s naked disregard of the competitive context risks exactly that result.”<sup>60</sup>

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<sup>56</sup> *Id.* at 428. The D.C. Circuit agreed with arguments that, in ordering unbundling of the high frequency spectrum of the copper loop (so as to enable CLECs to provide DSL services), the Commission failed to consider the relevance of competition in broadband services coming from cable and satellite. *Id.*

<sup>57</sup> CompTel, Covad, the CLEC Coalition and others argued that the Commission must acutely focus its impairment analysis on the services the CLECs seek to provide. *See, e.g.*, comments filed by: CompTel at 49, Covad at 78; CLEC Coalition at 54.

<sup>58</sup> *USTA v. FCC*, 290 F.3d at 429-30.

<sup>59</sup> *Id.* at 429.

<sup>60</sup> *Id.*

**B. ILECs' New, Last-Mile Broadband Facilities Do Not Satisfy The Impair Standard Set Forth in the *UNE Remand Order* or As Interpreted By The D.C. Circuit.**

**1. Not subjecting ILECs' new, last-mile broadband facilities to Section 251 unbundling is consistent with the Commission's *UNE Remand Order*.**

As demonstrated in HTBC's Comments, even under the less stringent impair standard set forth in the *UNE Remand Order*, ILECs' new, last-mile broadband facilities do not meet the criteria for Section 251 unbundling. In the *UNE Remand Order*, the Commission determined that a CLEC is impaired if its ability to provide the services it seeks to offer is "materially diminished."<sup>61</sup> The FCC concluded that CLECs are not impaired without access to—and, thus, do not require unbundled access to—a network element where they suffer no competitive disadvantage to the ILECs with respect to that network element.<sup>62</sup> The only facilities exempted from Section 251 unbundling under HTBC's proposal are those with respect to which ILECs have no unfair competitive advantage (*i.e.*, new, last-mile broadband facilities).

Since the 1996 Act's inception, there have been a growing number of intermodal broadband alternatives to ILEC DSL services<sup>63</sup> and, as a result, ILECs do not dominate the market for broadband services. Instead, they face substantial competition from cable modem services and emerging competition from other broadband platforms (*e.g.*, satellite and fixed wireless). In addition, AT&T's arguments to the contrary notwithstanding, CLECs cost

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<sup>61</sup> *UNE Remand Order*, 15 FCC Rcd at 3725.

<sup>62</sup> *Id.* at 3836.

<sup>63</sup> Comments filed by Alcatel at 24; *see also* comments filed by Telecommunications Industry Association ("TIA") at 22.

effectively can and do deploy their own broadband facilities.<sup>64</sup> With several facilities-based, competitive alternatives, the impair standard is not met with respect to ILECs' new, last-mile broadband facilities.<sup>65</sup> Accordingly, a CLEC's ability to provide broadband services is not "materially diminished" without Section 251 unbundled access to such facilities; therefore, these facilities should not be subject to Section 251 unbundling.

Further, an initial finding that a network element satisfies the necessary or impair standard does not automatically lead to the designation of a UNE.<sup>66</sup> In the *UNE Remand Order*, the Commission confirmed that "there may be circumstances in which there is significant evidence that competitors are impaired without unbundled access to a particular element, but requiring [I]LECs to unbundle that element would be inconsistent with the goals of the [1996] Act."<sup>67</sup> The FCC can and must examine whether providing unbundled access to a network element that meets the impair standard would promote the goals of the 1996 Act, including those embodied in Sections 251 and 706. Indeed, the "at a minimum" language compels the Commission to consider whether its unbundling rules promote both increased competition in local exchange and exchange access services and increased broadband deployment and availability.<sup>68</sup> As the FCC acknowledged in the *UNE Remand Order*, "the plain import of the 'at a minimum' language in Section 251(d)(2) requires the Commission to consider the standards

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<sup>64</sup> *Corning Study* at 3, 14, 30.

<sup>65</sup> Comments filed by TIA at 22.

<sup>66</sup> *UNE Remand Order*, 15 FCC Rcd at 3745-46.

<sup>67</sup> *Id.* at 3747.

<sup>68</sup> Comments filed by CompTel at 26-27; *see also* comments filed by Alcatel at 29.

enumerated there, ‘as well as other standards we believe are consistent with the objectives of the 1996 Act.’”<sup>69</sup> Thus, in any unbundling analysis, the Commission must carefully consider both Sections 251 and 706.

HTBC’s proposal that the FCC determine that ILECs’ new, last-mile facilities are not subject to Section 251 unbundling will provide a reasonable and balanced implementation of both of Congress’s goals in implementing the 1996 Act.<sup>70</sup> It will keep open local exchange and exchange access networks, but, at the same time, promote innovation and investment by minimizing regulation applicable to ILECs in the broadband marketplace. Further, HTBC’s proposal is entirely consistent with Congress’s desire for the creation of a pro-competitive and deregulatory framework and facilities-based competition.

**2. Consideration of intermodal broadband competition, as required by the D.C. Circuit, leads to the conclusion that ILECs’ new, last-mile broadband facilities do not meet the impair standard.**

As discussed above, the D.C. Circuit in *USTA v. FCC* validated HTBC’s position that the relevant market for unbundling purposes is the market for broadband services—not the market for DSL service or even wireline broadband services.<sup>71</sup> Specifically, the court determined that the Commission “completely failed to consider the relevance of competition in broadband services from cable (and to a lesser extent satellite)” and thus erred in ordering unbundling of the

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<sup>69</sup> *UNE Remand Order*, 15 FCC Rcd at 3746.

<sup>70</sup> In passing the 1996 Act, Congress established a pro-competitive and deregulatory framework. Joint Statement of Managers, S. Conf. Rep. No. 104-230, 104<sup>th</sup> Cong., 2d Sess., at 1 (1996). Two of the fundamental goals of the 1996 Act are to open the local exchange and exchange access markets to competition and to promote innovation and investment by all participants in the telecommunications marketplace. *Id.*

<sup>71</sup> Comments filed by HTBC at 21.



high frequency portion of the copper loop.<sup>72</sup> As a result, the Commission must disregard commenters' arguments<sup>73</sup> suggesting that the Commission should not consider intermodal competition in its unbundling analysis.<sup>74</sup> The *USTA v. FCC* decision also rejects commenters' assertions<sup>75</sup> that consideration of intermodal broadband competition is contrary to congressional mandates.<sup>76</sup>

In its Comments, HTBC noted that intermodal broadband alternatives are increasingly available.<sup>77</sup> By the most recent reports, cable is still leading over DSL by a two to one margin.<sup>78</sup>

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<sup>72</sup> *USTA v. FCC*, 290 F.3d at 428.

<sup>73</sup> Comments filed by: ASCENT at 26; AT&T at 39-40; CLEC Coalition at 20; Covad at 33; IURC at 9; WorldCom at 60; Z-Tel at 24.

<sup>74</sup> Moreover, United States Supreme Court and Commission precedent also dictate consideration of intermodal competition. In *AT&T v. Iowa Utilities Board*, the Supreme Court required the Commission to consider the availability of alternative network elements outside the ILECs' networks. *See generally Iowa Util. Bd.*, 525 U.S. 366. As Justice Breyer explained, the Section 251(d)(2) standard "...requires a convincing explanation of why facilities should be shared...where a new entrant could compete effectively without the facility, or where practical alternatives to that facility are available." *Id.* at 428. (J. Breyer, concurring). The FCC confirmed this view in its 1999 *UNE Remand Order*, finding that its new impair standard should "take into consideration alternatives outside the incumbent LEC's network." *UNE Remand Order*, 15 FCC Rcd at 3701-02.

<sup>75</sup> *See, e.g.*, comments filed by: ASCENT at 26; Covad at 33.

<sup>76</sup> *USTA v. FCC*, 290 F.3d at 429-30.

<sup>77</sup> Comments filed by HTBC at 41-42.

<sup>78</sup> *See TeleChoice Current Headline, North American DSL Market Reaches 6.2 Million, According to TeleChoice; U.S. Market Nearing the 5 Million Line Mark, Canada at 1.3 Million*, May 15, 2002 <http://www.xdsl.com/content/tcarticles/wp051402.asp> (last visited July 15, 2002). TeleChoice President Claudia Bacco noted that at current growth rates DSL providers are "not closing the gap with cable companies, who have over twice the market share among residential broadband users."

Further, satellite and terrestrial wireless are emerging alternatives.<sup>79</sup> With proper spectrum management, new platforms, such as wireless fidelity (“Wi-Fi”), also may emerge as last-mile broadband solutions.<sup>80</sup> With competitive alternatives to ILECs’ new, last-mile broadband facilities extant or on the horizon, CLECs are not impaired within the meaning of Section 251(d)(2) by lack of access to these facilities.<sup>81</sup>

**3. Cost disparities associated with market entry do not demonstrate impairment.**

As discussed above, the D.C. Circuit in *USTA v. FCC* prohibited the Commission from finding impairment by merely comparing cost disparities encountered in any industry with incumbents and entrants.<sup>82</sup> The court elaborated on this principle, stating that “average unit costs are necessarily higher at the outset for any new entrant into virtually any business.”<sup>83</sup> Thus, the Commission may only properly consider in an impairment analysis those elements that retain natural monopoly characteristics.<sup>84</sup> Because ILECs’ new, last-mile facilities do not have such

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<sup>79</sup> Comments filed by HTBC at 41-42.

<sup>80</sup> John Markoff, *2 Tinkerers Say They’ve Found a Cheap Way to Broadband*, New York Times, June 10, 2002, at C1; *All Net, All The Time*, BusinessWeek Online, April 29, 2002, available at [http://www.businessweek.com/magazine/content/02\\_17/b3780009.htm](http://www.businessweek.com/magazine/content/02_17/b3780009.htm) (last visited July 15, 2002) (“Wi-Fi threatens the growth of DSL and cable-modem service because it allows dozens of people to share a single line.”).

<sup>81</sup> Comments filed by: Corning at 23-26; Alcatel at 13; FTTH Council at 6; Next Level at 9-11; TIA at 22-23.

<sup>82</sup> *USTA v. FCC*, 290 F.3d at 427.

<sup>83</sup> *Id.*

<sup>84</sup> The Commission itself recognized this in the *UNE Remand Order* when it found that packet switches and DSLAMs were not subject to Section 251 unbundling. *UNE Remand Order*, 15 FCC Rcd at 3836. The FCC stated:

characteristics by definition, as they are new facilities, they are not subject to Section 251 unbundling.

CLECs can and do cost effectively deploy their own broadband facilities.<sup>85</sup> Moreover, CLECs and ILECs are in the same position with respect to deployment of new, last-mile broadband facilities. Any supposed disparities are the typical disparities that exist between incumbents and new entrants in any industry and, consequently, do not support a finding of impairment. Accordingly, the Commission should reject commenters' assertions that, because the ILECs have much greater economies of scale and scope, impairment exists for new, last-mile broadband facilities.<sup>86</sup>

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(Continued . . .)

We recognize that equipment needed to provide advanced services, such as DSLAMs and packet switches, are available on the open market at comparable prices to incumbents and requesting carriers alike. [ILECs] and their competitors are both in the early stages of packet switch deployment, and thus face relatively similar utilization rates of their packet switching capacity. . . . Because the [ILEC] does not retain a monopoly position in the advanced services market, packet switch utilization rates are likely to be more equal as between requesting carriers and [ILECs]. It therefore does not appear that [ILECs] possess significant economies of scale in their packet switches compared to requesting carriers.

<sup>85</sup> *Corning Study* at 3, 14, 30.

<sup>86</sup> *See, e.g.,* comments filed by: AT&T at 125-31; WorldCom at 19-20.

**C. Section 251 Permits The Commission To Distinguish Between ILECs' Legacy Facilities And Their New, Last-Mile Broadband Facilities.**

Some commenters erroneously assert that Section 251 itself does not permit the FCC to distinguish between new and old facilities.<sup>87</sup> Others claim instead that such action would not be justified.<sup>88</sup> These contentions are incorrect.

Under either the *UNE Remand Order* or the D.C. Circuit's interpretation of impairment, Section 251 provides the Commission with sufficient discretion and authority to determine that CLECs are impaired without access to ILECs' legacy copper facilities but are not impaired without access to ILECs' new, last-mile broadband facilities.<sup>89</sup> The Commission must separately analyze whether each network element meets the impair standard. Accordingly, Section 251(d)(2)—as interpreted by the Commission in the *UNE Remand Order* or the D.C. Circuit in *USTA v. FCC*—permits the FCC to conclude that CLECs are impaired without access to certain network elements but not with respect to others.

Moreover, distinguishing between old and new facilities is consistent with the goals of Section 251(c). Congress intended to promote competition in the local telephone market, a market where ILECs possess substantial market power and where the ILECs' legacy copper network is a bottleneck. HTBC's proposal accommodates this objective by ensuring that CLECs continue to have unbundled access to ILECs' legacy copper networks. The only facilities

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<sup>87</sup> Comments filed by: CompTel at 23, 41; Covad at 32; CLEC Coalition at 12, 37; Missouri PSC at 7-8 (filed March 26, 2002); WorldCom at 101-02.

<sup>88</sup> Comments filed by: AT&T at 116-119; McLeod USA at 7.

<sup>89</sup> 47 U.S.C. § 251(d)(3).

exempted from Section 251 unbundling under HTBC's proposal are those with respect to which ILECs have no unfair competitive advantage (*i.e.*, new, last-mile broadband facilities).

**D. The Commission Should Clarify That State Commissions Cannot Require The Unbundling Of Network Elements That The FCC Has Determined Are Not Subject To Section 251 Unbundling.**

The Commission must also confirm that Sections 251 and 261 prohibit states from requiring the unbundling of ILECs' new, last-mile broadband facilities when the Commission has determined that such facilities are not subject to Section 251 unbundling. In so doing, the Commission will ensure regulatory certainty, which, in turn, will promote greater broadband deployment.

**1. State commissions lack the legal authority to require the unbundling of ILEC's new, last-mile broadband facilities where the FCC has determined these facilities are not subject to Section 251 unbundling.**

A number of state commissions and CLECs assert that states have the legal authority to require the unbundling of network elements which the FCC has determined are not subject to Section 251 unbundling.<sup>90</sup> This is not the case. Section 251(d)(2) directs the FCC, not the states, to determine "what network elements should be made available."<sup>91</sup> If the FCC determines that the impair standard is not met with respect to ILECs' new, last-mile broadband facilities, a state

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<sup>90</sup> Comments filed by: ALTS at 131-132; ASCENT at 46-48; AT&T at 241-45; California Public Utilities Commission at 22-23; CompTel at 107; Covad at 88; Eschelon at 19; CLEC Coalition at 66-69; Florida PSC at 6; GCI at 53-55; Georgia PSC at 4-5; IURC at 5; Long Distance of Michigan, Inc. ("LDMI") at 9-12; Maine CLEC Coalition at 9; Michigan PSC C at 4; NARUC at 7-8; NYDPS at 8 (filed April 4, 2002); Oklahoma Corporation Commission at 4; Public Utilities Commission of Ohio Comments at 7; SWCTA at 15; UNE Platform Coalition at 25-26, 28-29; WorldCom at 63 & n.190; Z-Tel at 86-87.

<sup>91</sup> 47 U.S.C. § 251(d)(2).

cannot determine that ILECs nevertheless must unbundle these facilities because such a requirement would violate Section 251(d)(2).<sup>92</sup>

Further, while Section 261(c) gives the states authority to impose unbundling requirements on ILECs, states may only do so insofar as the unbundling requirements imposed are not “inconsistent with [Part II of Title II of the Communications Act] or the Commission’s regulations implementing this part.”<sup>93</sup> If the FCC adopts HTBC’s proposal and finds that CLECs are not impaired without access to ILECs’ new, last-mile broadband facilities, state action to require continued unbundling of these facilities would be inconsistent with the Commission’s regulations and violate Section 261(c). Further, Section 251(d)(3) provides the Commission authority to preclude the enforcement of state commission regulations, orders or policies “establishing access and interconnection obligations of local exchange carriers” if such regulations, orders, or policies are inconsistent with the requirements of Section 251 or substantially prevent the implementation of the requirements of Section 251 or Part II of Title II of the Act.<sup>94</sup>

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<sup>92</sup> See comments filed by Corning at 30-31.

<sup>93</sup> 47 U.S.C. § 261(c).

<sup>94</sup> 47 U.S.C. §§ 251(d)(3).

**2. Policy considerations require that state commissions be precluded from requiring unbundling of a network element which the FCC has ruled is not subject to Section 251 unbundling.**

The Commission has consistently stated that its policy is “to remove regulatory uncertainty that in itself may discourage investment and innovation.”<sup>95</sup> Further, CLECs and ILECs alike recognize the need for regulatory certainty.<sup>96</sup> If states were permitted to require unbundling of ILECs’ new, last-mile broadband facilities after the FCC determined that these facilities were not subject to Section 251 unbundling, the regulatory uncertainty that deters ILEC and CLEC investment in these facilities would persist and would be magnified because investment decisions would have to be made based on a state-by-state analysis of unbundling regulations. To ensure that its actions have the desired effects—increased regulatory certainty and promotion of broadband deployment, the Commission must confirm that state commissions

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<sup>95</sup> *Inquiry Concerning High-Speed Access to the Internet Over Cable and Other Facilities, Internet Over Cable Declaratory Ruling, Appropriate Regulatory Treatment for Broadband Access to the Internet Over Cable Facilities, Declaratory Rulemaking and Notice of Proposed Rulemaking*, GN Docket No. 00-185, CS Docket No. 02-52, FCC 02-77, ¶ 5 (rel. Mar. 15, 2002). *See also Appropriate Framework for Broadband Access to the Internet over Wireline Facilities, Universal Service Obligations of Broadband Providers, Computer III Further Remand Proceedings: Bell Operating Company Provision of Enhanced Services; 1998 Biennial Regulatory Review—Review of Computer III and ONA Safeguards and Requirements*, Notice of Proposed Rulemaking, CC Docket No. 02-33, FCC 02-42, ¶ 5 (rel. Feb. 15, 2002); *Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable And Timely Fashion, and Possible Steps To Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996*, CC Docket No. 98-146, Third Report, FCC 02-33, ¶ 135 (rel. Feb. 6, 2002).

<sup>96</sup> Comments filed by: ALTS at 130; AT&T Wireless Comments at 10; CompTel at 84-85; Covad at 36-37, 58; CLEC Coalition at 55, 67-68, 109; LDMI at 7; NewSouth at 7; Sprint at 13, 58; Verizon at 22, 35-36; SBC at 65; BellSouth at 15; Qwest at 16-19.

cannot require the unbundling of ILECs' new, last-mile broadband facilities when the FCC has determined these facilities are not subject to Section 251 unbundling.<sup>97</sup>

**IV. THE HTBC PROPOSAL, WHICH WILL PROMOTE BROADBAND DEPLOYMENT, ALSO COMPLIES WITH THE REQUIREMENTS OF SECTION 706.**

**A. Adoption Of The HTBC Proposal Will Promote ILEC Broadband Deployment.**

As HTBC demonstrated in its Comments, adoption of its proposal will result in increased ILEC broadband deployment. Further support for this conclusion can be found in the *Corning Study*. That study demonstrates that significantly greater ILEC investment in FTTH can be justified in a "free market" scenario (*i.e.*, no Section 251 unbundling of FTTH) than can be justified in a "regulated" scenario (*i.e.*, Section 251 unbundling of FTTH). Specifically, Corning's comments show that FTTH would be economically feasible in wire centers corresponding to 31 percent of households in a free market scenario but only in wire centers corresponding to 5 percent of households in a regulated scenario.<sup>98</sup> The *Corning Study* also concluded that, under the "free market" scenario, ILECs will make an additional \$39 billion in capital expenditures relating to FTTH over the next ten years.<sup>99</sup> HTBC supports Corning's comments, based on the study, which recommend that the FCC determine that FTTH is not subject to Section 251 unbundling because FTTH does not meet the necessary or impair

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<sup>97</sup> See comments filed by Catena at 15-16.

<sup>98</sup> *Corning Study* at 11. The pace of deployment under the "regulated" scenario would leave the United States far behind other countries like Japan, Sweden, Canada, and Korea that have made broadband deployment a priority.

<sup>99</sup> *Corning Study* at 13.



standards of Section 251(d)(2) and because Section 251 unbundling requirements are unnecessarily discouraging investment in FTTH.

HTBC disagrees with AT&T and other commenters' assertions that there is no need to encourage further ILEC investment in broadband facilities and equipment because, according to these commenters, the problem with broadband is not a "supply" problem but a "demand" problem.<sup>100</sup> The rather limited consumer "take rates" for broadband services cited by these commenters only serves to emphasize that the broadband market is a bandwagon market. In fact, one of the distinguishing characteristics of such a market is that it faces the classic "chicken and the egg" conundrum.<sup>101</sup> Like other bandwagon markets, the broadband market will realize momentum only once a critical mass of users is reached. Thus, if broadband is to reach its potential in the United States, ILECs and others must not only increase the speed of their broadband offerings but also must expand the reach of their broadband networks. It is critical that the Commission encourage additional deployment of broadband facilities. As Chairman Powell has noted, "promoting such deployment is clearly imperative if we are to enjoy the full promise of our economy and our democratic society."<sup>102</sup>

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<sup>100</sup> Comments filed by: AT&T at 69; ALTS at 14-15, CompTel at 31-33.

<sup>101</sup> Comments filed by HTBC at 17 ("[A] new application will not be made available until a sufficient number of users have the capability (*i.e.*, a broadband connection) to support the application; however, without the new application, users do not desire the capability.").

<sup>102</sup> Statement of Michael K. Powell, Chairman, Federal Communications Commission, in *Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion*, CC Docket No. 98-146 (Feb. 7, 2002) <http://www.fcc.gov/Speeches/Powell/Statements/2002/stmkp201.html> (last visited July 15, 2002) ("Statement of Michael K. Powell").

**B. Adoption Of The HTBC Proposal Will Not Deter CLEC Broadband Deployment.**

HTBC disagrees with CLECs' assertion that adoption of HTBC's and other similar proposals—which will deny them unbundled access to certain ILEC broadband facilities—will inhibit broadband deployment by CLECs.<sup>103</sup> The evidence indicates that the opposite is true: exempting ILECs' new, last-mile broadband facilities from Section 251 unbundling will augment CLEC incentives to deploy their own broadband facilities. As the Fiber-to-the-Home Council explained in its comments, “78 % of the ILEC competitors have built their FTTH networks in locations where the incumbents operated but did not have broadband capabilities available to be resold.”<sup>104</sup> Further, the *Corning Study* concluded that, if unbundled access to FTTH were available, “it would be more attractive for any CLECs to piggy-back on the newly built ILEC network than to invest in their own facilities.”<sup>105</sup> Finally, in addition to promoting CLECs' deployment of their own broadband facilities, a determination that ILECs' new, last-mile broadband facilities are not subject to Section 251 unbundling would provide increased competitive pressure on cable and other broadband providers to invest in their own broadband deployment and innovation.<sup>106</sup>

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<sup>103</sup> Comments filed by: AT&T at 45-57; CLEC Coalition at 10-11; WorldCom at 82-90.

<sup>104</sup> Comments filed by FTTH Council at 5.

<sup>105</sup> *Corning Study* at 3.

<sup>106</sup> Comments filed by HTBC at 33.

**C. Because Adoption Of The HTBC Proposal Will Promote Broadband Deployment, It Complies With The Requirements of Section 706.**

Adoption of the HTBC proposal will comply with Section 706. That section requires the Commission to encourage the reasonable and timely deployment of broadband by utilizing, consistent with the public interest, “regulating methods that remove barriers to infrastructure investment.”<sup>107</sup> Such action will eliminate disincentives to ILEC investment in broadband deployment and, as a result, will promote such deployment by both ILECs and CLECs.

The fact that the D.C. Circuit, the FCC, various commenters, and HTBC have concluded that the broadband market shows growing competition does not end the Commission’s obligation under Section 706 to encourage the availability of broadband services to all Americans. As an initial matter, Chairman Powell has noted that Section 706 creates an affirmative obligation for the Commission to “promote the availability of broadband whether or not [the Commission] conclude[s] that deployment is reasonable and timely.”<sup>108</sup> Further, HTBC disagrees with commenters’ assertions that Section 706 does not provide the FCC with the authority to exempt ILECs’ new, last-mile broadband facilities from Section 251 unbundling because Section 706 merely requires a finding that advanced telecommunications capability is being deployed in a

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<sup>107</sup> 1996 Act, Title VII § 706, reproduced in the notes under 47 U.S.C. § 157.

<sup>108</sup> Statement of Michael K. Powell. Additionally, Commissioner Abernathy has noted that “[w]hile broadband deployment is occurring reasonably, that is no reason [for the Commission to] rest on [its] laurels.” Statement of Kathleen Q. Abernathy, Commissioner, Federal Communications Commission, in *Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion*, CC Docket No. 98-146 (Feb. 7, 2002) <http://www.fcc.gov/Speeches/Abernathy/Statements/2002/stkqa202.html> (last visited July 15, 2002).

reasonable and timely fashion.<sup>109</sup> Indeed, the FCC's conclusions in this proceeding can supersede its previous Section 706 findings and form the basis for regulatory action under Section 706.

What constitutes "reasonable and timely" requires consideration of a range of factors including evidence of substantial impediments to deployment as well as rollout comparisons with other products and technologies. The Commission should also consider the deployment of next generation broadband services because "many of the most exciting applications, such as video-on-demand, require transmission speeds significantly in excess of 200 kbps."<sup>110</sup> Should the Commission determine that, regardless of past Section 706(b) findings, Section 251 unbundling of ILECs' new, last-mile broadband facilities "unreasonably" impedes broadband deployment, Section 706(b) requires the Commission to take immediate action to eliminate this regulatory barrier and decline to impose such unbundling regulation.

Furthermore, the Commission must recognize that defining what deployment is "reasonable and timely" is particularly difficult with respect to bandwagon markets like the broadband market. Given the interaction of demand and supply factors in bandwagon markets, the FCC should be especially sensitive to the possibility that a significant increase in deployment due to regulatory reform could trigger positive feedback and unleash substantial increases in the development of broadband applications. As Commissioner Martin has noted, "[t]here are strong arguments that [video-on-demand] applications, or others that require higher speeds, offer the

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<sup>109</sup> See, e.g., comments filed by Allegiance at 15.

<sup>110</sup> Statement of Kevin J. Martin, Commissioner, Federal Communications Commission, in *Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion*, CC Docket No. 98-146 (Feb. 7, 2002) <http://www.fcc.gov/Speeches/Martin/Statements/2002/stkjm204.html> (last visited July 15, 2002).

kind of content that consumers truly demand, and will ultimately drive much higher adoption rates.”<sup>111</sup>

**D. The Commission Must Act Expeditiously To Provide a Critical Boost To The High-Tech Sector.**

As the record in this proceeding demonstrates, subjecting ILECs’ new, last-mile broadband facilities to Section 251 unbundling inhibits investment.<sup>112</sup> In addition to the lost societal and economic benefits cited in HTBC’s Comments,<sup>113</sup> decreased broadband investment is causing a dramatic decline in the high-tech industry, which is critical to our nation’s economy. Specifically, telecommunications equipment manufacturers have “seen extensive financial losses and cutbacks in recent months,” resulting in severe work force reductions and unprofitable operations.<sup>114</sup> Under the current marketplace and regulatory conditions, future improvement is unlikely.<sup>115</sup> Therefore, the Commission must act quickly and adopt rules that exclude ILECs’ new, last-mile broadband facilities from Section 251 unbundling. This will foster high-bandwidth broadband investment by ILECs, CLECs and other broadband competitors, which, in turn, will provide enormous benefits to our nation’s residents, economy,<sup>116</sup> and high-tech manufacturing sector. Because of the bandwagon effects applicable to broadband, consumers

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<sup>111</sup> *Id.*

<sup>112</sup> Comments filed by HTBC at 26-33.

<sup>113</sup> *Id.* at 5-12.

<sup>114</sup> Letter from Matthew J. Flanigan, President of Telecommunications Industry Association, to Michael K. Powell, Chairman, Federal Communications Commission, at 3 (dated June 4, 2002).

<sup>115</sup> *Id.* at 4.

<sup>116</sup> Comments filed by HTBC at 5-6.

and the high-tech manufacturing industry can only begin to experience positive feedback from broadband “when facilities capable of supporting broadband applications reach a critical mass of customers.”<sup>117</sup>

The record in this proceeding fully supports expedited Commission action. Numerous commenters addressed the investment disincentives created by subjecting ILECs’ new, last-mile broadband facilities to Section 251 unbundling.<sup>118</sup> Moreover, the immediate harms to our national economy from a lack of sufficient investment in broadband facilities are well documented.<sup>119</sup> And, importantly, under either the *UNE Remand Order* or the D.C. Circuit’s interpretation of Section 251, ILECs’ new, last-mile broadband facilities do not meet the impair standard. Accordingly, while the legal and factual environment requires such action, the current downward spiral of the high-tech manufacturing sector makes it imperative that the FCC act expeditiously.

**E. Commission Negotiated Deployment and Bandwidth Benchmarks Will Increase Broadband Deployment.**

As detailed above, several commenters, including CLEC interests, note the declining rate of ILEC broadband deployment.<sup>120</sup> As HTBC and the D.C. Circuit concluded, outdated unbundling requirements are the root cause of this reduced broadband investment.<sup>121</sup>

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<sup>117</sup> *Id.* at 20.

<sup>118</sup> *See, e.g.*, comments filed by: Corning at 3; Alcatel at 10-11; Catena at 3-4.

<sup>119</sup> Comments filed by HTBC at 8-10.

<sup>120</sup> Comments filed by: Allegiance at 17; Catena at 3; Corning at 3, FTTH Council at 2; Next Level at 5, 11.

<sup>121</sup> Comments filed by HTBC at 29-31; *USTA v. FCC*, 290 F.3d at 424.

Eliminating this trend is imperative to meeting the facilities-based deployment goals of the 1996 Act. Further, Section 706 compels the Commission to encourage broadband deployment and to remove obstacles to meet this goal.<sup>122</sup> Accordingly, the Commission should create provider-specific benchmarks that take into account current deployment of broadband facilities, geographic and demographic composition of ILEC service areas, and other relevant factors.<sup>123</sup>

The FCC can meet its Section 706 obligation of ensuring that broadband is made available to all Americans on a timely basis by implementing, pursuant to Section 201, aggressive deployment and bandwidth benchmarks. Economically rational and pro-business benchmarks are attainable if implemented concomitantly with a Commission determination that ILECs' new, last-mile broadband facilities are not subject to Section 251 unbundling.<sup>124</sup> By requiring ILECs to meet reasonable benchmarks, the Commission will enable broadband to reach a critical mass within a practical and predictable timeframe. Reaching critical mass in a bandwagon market such as broadband is essential to fostering the development of innovative

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<sup>122</sup> 1996 Act, Title VII § 706, reproduced in the notes under 47 U.S.C. § 157.

<sup>123</sup> A working group, consisting of ILECs, state regulatory bodies, and consumer representatives should develop the provider-specific speed and percentage coverage requirements.

<sup>124</sup> The self-imposed benchmarks SBC established with respect to Project Pronto provide a noteworthy example of the types of deployment schedules ILECs are capable of meeting without Section 251 unbundling obligations. *See* comments filed by HTBC at 48-49. Further, in the face of a mandate from Congress in the Cable Television Consumer Protection Act, which favored a policy of cable operators expanding capacity and programs, the Commission took similar action with the enactment of "social contracts." These "social contracts" with cable operators enabled the Commission to meet the goal of increased capacity in exchange for a determination that new services would not be subject to existing regulatory burdens. *See* comments filed by HTBC at 49-50.

applications and to furthering broadband use by consumers and businesses.<sup>125</sup> Consequently, the “chicken and the egg” conundrum that currently plagues broadband will disappear.<sup>126</sup>

In sum, provider-specific benchmarks will increase broadband deployment, thus enabling the Commission to effectively implement the pro-deployment goals of the 1996 Act. Such increased deployment will spark the development of new and innovative broadband applications, which, in turn, will lead to enormous consumer demand for broadband facilities.

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<sup>125</sup> Once critical mass in broadband is reached, positive feedback occurs. With positive feedback, increases in consumer demand lead to increased consumer benefits to having broadband. Comments filed by HTBC at 18-20; Rohlf, Jeffrey H., *Bandwagon Effects in High-Tech Industries* 27 (2001).

<sup>126</sup> Comments filed by HTBC at 17.



**V. CONCLUSION**

For the reasons set forth above and in HTBC's Comments, the Commission must find that ILECs' new, last-mile broadband facilities are not subject to Section 251 unbundling.

Respectfully submitted,

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July 17, 2002

## **APPENDIX A**

# THE DISINCENTIVES FOR ILEC BROADBAND INVESTMENT AFFORDED BY UNBUNDLING REQUIREMENTS

JOHN HARING AND JEFFREY H. ROHLFS

July 16, 2002

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## 1. INTRODUCTION

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Our initial study, filed by the High-Tech Broadband Coalition (“HTBC”) in this proceeding, reached the following conclusions:

Creation of new network service capabilities, in general, entails sunk/irreversible investments in physical, intellectual and human capital. The return on these investments is uncertain and difficult to anticipate in advance. The ILEC must make such investments before market uncertainties are resolved. The CLEC, on the other hand, can wait until the uncertainties are resolved before choosing whether to purchase UNEs.

The current regime thus affords CLECs a valuable real option. By exercising that option in a particular circumstance, a CLEC can offload investment risk on the ILEC. The real option is analogous to a call option in financial markets. The CLEC can determine whether the assets appreciate in value before deciding whether to purchase them at cost.

[T]he value of the call option is expropriated, in an expected-value sense, from ILEC stockholders. . . ILECs, faced with the prospect of this expropriation, are likely to respond by not making the investment in the first place. The regulatory regime offers would-be ILEC investors very unattractive odds that no rational investor would voluntarily entertain.

Infrastructure investments to support DSL would often be profitable, absent unbundling requirements, but the economics become very unfavorable with unbundling requirements. Consequently, unbundling requirements are likely to deter large amounts of ILEC investment. We estimated the amount of deterred investment could be \$20 billion or more.

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## 2. QUALITATIVE ANALYSIS

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Our study demonstrated that under two particular conditions, the chilling effect of unbundling regulations on investment by regulated firms is extremely severe:

- The investments involve large risks; and
- Competitors can use the investor's facilities to compete for a large share of the market that the investor intends to address by deploying those facilities.

Both these conditions apply to unbundling requirements for ILEC broadband facilities.

Our initial study focused on precisely these two conditions. We demonstrated that ILEC investments to support mass DSL deployment are highly risky. Furthermore, UNE-based CLECs can compete for the entire retail revenue stream from DSL. The prospect of such competition wherever DSL investments turn out to be successful ruins the business case for mass DSL deployment by an ILEC.

We argued that in general, unbundling requirements are poor public policy for risky services. Our logic is as follows:

Regulators cannot (and should not try to) get into the micro-management of investment decisions of a regulated firm. Consequently, they must rely on the firm to make sound choices with regard to investments. Ideally, the firm will make risky investments that are cost-effective,<sup>1</sup> evaluated *ex ante*; it will reject risky investments that are not cost-effective, evaluated *ex ante*.

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<sup>1</sup> We use the term "cost-effective" to refer to investments for which the expected value of revenues exceeds the expected value of costs, including the (risk-adjusted) cost of capital. Such investments yield economic profits for the regulated firm. They also increase consumer welfare, since consumers are given additional choices.

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The firm is likely to make sound investment decisions if, but only if, its incentives are structured properly. The incentive structure that leads to sound decisions with regard to risky investments is for the firm to reap the full consequences of its investment decisions—whether positive or negative.

Unbundling requirements prevent the regulated firm from reaping the full positive consequences of its investment decision if the investment turns out to be profitable.<sup>2</sup> In that case, competitors can purchase unbundled components and erode the regulated firm's profits from the investment. Because the regulated firm cannot expect to reap the full upside consequences of investments that turn out to be successful, it is less likely to make the investments in the first place—even if the investments would have been cost-effective and would have improved economic welfare.

Unbundling requirements may afford investment disincentives, even where the investments are not risky, but the effects are much less severe in that case. There, the disincentives can be substantially ameliorated by ensuring that the price of unbundled components covers total incremental costs.<sup>3</sup>

These disincentives are much more severe for risky projects. They apply even if the prices of unbundled components cover their total incremental cost (properly calculated). Even in that case, the regulated firm could expect to make only modest economic profits from sales of unbundled components. On an *ex ante* basis, such sales would provide little offset for losses that would accrue if the investment were unsuccessful. A sufficient offset can only come from retail sales, which may be able to generate large economic profits if the investment turns out to be successful—but only if competition from competitors using unbundled components is absent.

These investment disincentives inhere in unbundling requirements for risky investments. It is not simply an issue of defining the “proper” cost-based standard for pricing the components. To determine the price that would *not* deter investment, regulators would need to undertake the daunting task of analyzing the business case for the risky investments and allowing a sufficient premium for the contingency of commercial

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<sup>2</sup> We note that price regulation (and *a fortiori*, rate-of-return regulation) also keep the firm from reaping the full consequences of its investment decisions. Recognizing this problem, the FCC has forborne from regulating DSL prices. Relaxing the unbundling requirements for DSL is a logical next step.

<sup>3</sup> We note that the relevant total incremental costs are those that the firm would actually incur in the real world—not necessarily the output of a hypothetical cost model. Also, incremental costs must cover the cost of capital for the risky projects in question and must make adequate allowance for economic depreciation (which often substantially exceeds regulatory depreciation).

failure.<sup>4</sup> This approach involves the counterproductive activity of regulators' getting into the micromanagement of the firm's investment decisions.

A far better approach is to have no unbundling requirements for risky investments.

The disincentives described above have an especially chilling effect on investments to support mass DSL deployment. To be sure, this chilling effect may not deter deployment where DSL can be supplied by simply attaching DSLAMs and DSL modems to existing copper wire. But as we observed in our initial filing, DSL can be supplied to only a limited number of U.S. households in that manner. For the remainder of households—perhaps as much as 50 percent of the total—DSL can be supplied only if the ILEC makes substantial infrastructure investments. These investments are of three types:

- Installing new fiber-optic cables and systems (together with investments in constructing remote terminals);
- Upgrading existing fiber-optic systems so that they can accommodate DSL, as well as voice-grade lines; and
- Upgrading existing copper cables to enable them to carry DSL.

Such infrastructure investments are unlikely to be financially justified, given current unbundling requirements. They are unprofitable in the short term, given today's broadband applications. Nevertheless, the investments do have substantial upside potential, which would—absent unbundling requirements—justify the investments in many cases. Unfortunately, unbundling requirements erase most of the upside potential.

As we noted in our original filing, the effect of unbundling requirements is to expropriate a valuable real option from ILECs and bestow it on their competitors. The

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<sup>4</sup> The appropriate premium may be enormous if the project is very risky. Consider, for example, an investment project that yields 0 (i.e., complete loss of invested capital) with probability 50 percent and \$2.50 (over and above operating costs) per dollar of investment with probability of 50 percent. Such an investment would be cost-effective if the cost of capital were 15 percent. The expected economic profit would then be \$0.10, *ex ante* (\$2.50 times the 50 percent probability of getting it equals \$1.25. This amount includes recovery of the \$1.00 of invested capital, cost of capital of \$0.15 and economic profit of \$0.10.) In order not to deter investment, the price of the unbundled component would have to be \$2.30. Thus, the premium would be 130 percent of the original investment. Any lower premium would deter the investment if competition from competitors using unbundled components were expected to be sufficiently severe. The premium of \$1.30 is necessary so that expected sales of unbundled components in the successful scenario cover expected costs on an *ex ante* basis (\$2.30 times the 50 percent probability of getting any return on the investment = \$1.15.) This includes recovery of capital of \$1.00 and cost of capital of \$0.15 with no economic profit.

loss of this real option is the loss of much of the upside potential of the investments. Given the loss of this real option, ILEC infrastructure investments to support mass DSL deployment are generally unprofitable and unlikely to be made.

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### 3. REVIEW OF COMMENTS IN THE INTITIAL ROUND

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AT&T, in its comments opines (pp. 66 ff) that unbundling requirements and low UNE prices actually stimulate ILEC investment. It buttresses this opinion with a study conducted by R.D. Willig and filed in this proceeding.<sup>5</sup> In our view, the Willig study requires further review before its results can be accepted.<sup>6</sup> In any event, the Willig study applies to total ILEC investment. Most of that investment is less risky and less discretionary than the investments required to support mass DSL deployment. One would expect that the chilling effects of unbundling requirements would be *far* more severe for mass DSL deployment than for the average of all ILEC investments.

Furthermore, the whole theory underlying Willig's model falls apart when applied to mass DSL deployment. That theory, as we understand it is as follows:

Low UNE prices encourage CLEC entry. The CLECs that enter will ultimately migrate to their own facilities and supply advanced services. This will, in turn, force ILECs to modernize their networks in order to be competitive.

Whatever the cogency of this argument in general (which we believe is rather little), it makes no sense at all when applied to infrastructure investments that support mass DSL deployment. Such investments are necessary only to supply DSL service in geographic areas where DSL could otherwise not be supplied. The ILEC may, of course, be subject to competitive pressure from cable in such areas. But it can be subject to competitive pressure *from CLECs* (or DLECs) only if it makes the infrastructure investments in the first place. It is absurd to argue that competitive pressures from CLECs stimulate such investments.

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<sup>5</sup> "Declaration of Robert D. Willig," filed on behalf of AT&T before the Federal Communications Commission, *In the Matter of Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers; Implementation of the Local Competition Provisions of the Telecommunications Act of 1996; Deployment of Wireline Services Offering Advanced Telecommunications Capability*, CC Docket Nos. 01-338, 96-98 and 98-147, *Comments of AT&T Corp.*, Attachment F (April 5, 2002).

<sup>6</sup> AT&T has only recently made Willig's data available to parties. We are just beginning to examine the data to ascertain whether Willig's results can be reproduced and whether the results stand up to more thorough analysis.

Carrying this argument a step further: Unbundling requirements severely impede ILECs in responding to the real competitive pressure that they feel from cable operators. Unbundling requirements greatly increase the costs for ILECs to make a constructive response. Quite possibly, the overall effect of unbundling requirements will be to cede the market to monopoly supply by cable.

More generally, the filings of carriers in this proceeding had few surprises. The interests of the various carriers were known in advance. That is, ILECs favored relaxing the unbundling requirements; CLECs favored retaining them. ILECs claimed that unbundling requirements repress ILEC investment in DSL; CLECs claimed the opposite.

Suppliers of high-technology products are in a different category. They have every incentive to be completely frank with the Commission. In particular:

- If they believe that unbundling requirements stimulate investment, they have every incentive to tell the Commission precisely that and argue for the retention of such requirements.
- If they believe that unbundling requirements repress investment, they have every incentive to tell the Commission precisely that and argue for the relaxation of such requirements.

Furthermore, there is good reason to expect the high-technology leaders to get it right. High-technology leaders are generally keen analysts, and they have a deep understanding of high-technology markets, including broadband.

The members of the High Tech Broadband Coalition (which sponsored our study) are as follows:

- Business Software Alliance;
- Consumer Electronics Association;
- Information Technology Industry Council;
- National Association of Manufacturers;
- Semiconductor Industry Association; and
- Telecommunications Industry Association.

The firms represented by the coalition constitute a major part of the high-technology sector of the whole U.S. economy.

The members of the coalition believe that unbundling requirements repress investment and argue for the relaxation of such requirements.



Corning, one of the world's leading suppliers of fiber-optic equipment, also filed comments in this proceeding. They appended to their filing a careful study by Cambridge Strategic Management Group ("CSMG") on the revenues and costs associated with ILEC investment to supply fiber-to-the-home ("FTTH").<sup>7</sup> They share the view of the coalition that unbundling requirements repress investment and should be relaxed.

We believe that the Commission should give weight to the views of these suppliers of high-technology products for the reasons discussed above.

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#### 4. REFINEMENT OF OUR QUANTITATIVE ANALYSIS

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In this section, we use information filed in the initial round of this proceeding and information from other sources to refine our model.

In our initial filing, we developed a simple quantitative model to demonstrate how ILEC investment incentives are reduced by unbundling requirements. The model illustrates the workings of the real option that unbundling requirements expropriate from ILECs and bestow on CLECs.

The model incorporates two possible scenarios for the resolution of uncertainties regarding the development of broadband applications. In Scenario 1, valuable new applications are assumed *not* to have developed, and DSL prices follow their current downward trajectory. In Scenario 2, valuable new applications are assumed to have developed, substantially increasing demand for DSL. In Scenario 1, there is no entry by UNE-based CLECs; the ILEC bears the losses alone. In Scenario 2, however, the increased DSL demand attracts UNE-based entry. We examined how such entry is likely to affect the profitability of Scenario 2 and the ILEC's incentives to make the investment in the first place.

We are now able to refine our analysis, using information filed in this proceeding and from other sources. The refinements include the following:

- Evaluation of ILEC costs of unbundling; and

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<sup>7</sup> CSMG, "Assessing the Impact of Regulation on Deployment of Fiber to the Home," prepared for Corning (April 5, 2002). CSMG has included costs that are beyond those at issue to us such as the head-end costs of \$2M that serves 50 central offices (at 21).

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- More detailed evaluation of CLEC costs, including the costs of collocation.

Table 1 reflects those refinements.

**Table 1**

<b>Scenarios for Mass DSL Deployment: 2005 (\$ per Customer per Month)</b>		
	<b>Scenario 1</b>	<b>Scenario 2</b>
1. ILEC price, absent UNE-based CLEC competition	43	66
2. ILEC cost, apart from the cost of unbundling		
a. Cost, apart from cost of capital and income taxes	38	38
b. ILEC cost of debt <sup>a</sup>	3.6	3.6
c. ILEC cost of equity <sup>a</sup>	5.4	5.4
d. ILEC income taxes <sup>b</sup>	0.6	9.8
e. ILEC total cost, absent unbundling requirements	47.6	56.8
<b>3. ILEC profit, absent UNE based CLEC competition</b>	<b>- 4.6</b>	<b>9.2</b>
4. ILEC cost of unbundling	2.9	2.9
5. Cost of UNE-based CLEC (including cost of capital and income taxes) <sup>c</sup>	NA	43
6. Price of UNE-based CLEC with profit of \$10 per month	NA	53
<sup>a</sup> Calculated from McKinsey-J.P. Morgan estimates, assuming 6-year remaining depreciation life, debt-equity ratio of 1, 10 percent cost of debt, 15 percent cost of equity. <sup>b</sup> Calculated assuming a 40-percent tax rate. <sup>c</sup> Based on Table 2 on page 11.		

**LINE 1: ILEC PRICE, ABSENT UNE-BASED CLEC COMPETITION**

Scenario 1 is simply McKinsey and J.P Morgan's of the likely price of DSL in 2005.<sup>8</sup> It is based on current trends and does not take into account the possible development of new broadband applications.

Scenario 2 is a plausible alternative scenario in which significant new broadband applications have been developed.

The entries on this line have not been revised since our initial filing.

**LINES 2A–2E: ILEC COST, APART FROM THE COST OF UNBUNDLING**

Line 2a–2e reflect the ILEC's cost of supplying DSL, apart from unbundling costs. These costs are taken from the McKinsey–J.P. Morgan study and are unchanged from our initial filing.

Information filed in the initial round of this proceeding does not bear directly on the costs in Table 1, but it does provide some interesting insights about broadband costs. In particular, the CSMG study (filed on behalf of Corning) estimates the costs of supplying FTTH. This study is an important contribution. Although policy discussions have heretofore focused on copper and hybrid fiber-copper solutions (DSL and cable modem), it is already timely to be thinking about the long-term future in which fiber will largely displace copper.

In CSMG's "free market" scenario (i.e., no unbundling requirements), the ILEC's cumulative capital expenditures per subscriber amount to \$2,200 by 2013. Capitalized, those costs amount to about \$65 per month. Total operating costs for an ILEC in 2005 are about \$2 million dollars, or about \$27 per subscriber per month.<sup>9</sup> Collectively, these monthly costs amount to \$92 per subscriber per month. These costs are approximately twice those in Table 1, but the functionality of the FTTH system is far greater.

In broad outline, CSMG makes the same points that we do: Unbundling increases the ILEC's costs and decreases the ILEC's revenues from broadband deployment. It therefore makes the whole venture less attractive.

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<sup>8</sup> McKinsey & Company and J.P. Morgan H&Q, Industry Analysis, *Broadband 2001*, April 2, 2001, pp. 70 and 72.

<sup>9</sup> SPR estimated the number of subscribers, revenues, and costs from line charts presented by CSMG.

CSMG's analysis does not incorporate uncertainty and therefore does not model the real-option effect. In particular, it does not reflect that if the market evolves unfavorably, ILECs bear the losses alone; but if the market evolves favorably, they share the gains with CLECs. CSMG's results would be all the stronger if they did take account of real-option effects.

#### LINE 4: COST OF UNBUNDLING

This is a new line in the table. It is estimated *very conservatively* on the basis of information disclosed by SBC regarding the incremental costs that it has actually incurred to accommodate unbundling with respect to Project Pronto.<sup>10</sup> We consider two elements of those costs in our analysis here:

- 1) The costs of increasing the size of remote terminals: \$20 million. As discussed in our initial filing, remote terminals are often not large enough to accommodate interconnection; so additional costs must be incurred.
- 2) The cost of optical concentration devices: \$182 million. Given that fiber has been deployed to a remote terminal, the signals must be converted at that point to/from electrical from/to optical. SBC reasonably argues that the most efficient architecture is to divide the signals into voice and data at this point. The data signals are then carried using packet protocols directly to/from the ISP, which has a DS-3 port. Unbundling requires the otherwise unnecessary step of breaking the signal down to the DS-1 level (using optical concentration devices) and distributing the packets to multiple firms.

The incremental capital expenditures to accommodate unbundling (\$202 million in total) can be compared to total Project-Pronto expenditures of \$3.2 billion before the project was aborted. Thus, the costs of unbundling (for these two elements) were about 6 percent of the total. Thus, as a rough estimate, we increase the costs of ILEC deployment in Table 1 by 6 percent of the costs in Scenario 1, or \$2.90 per month.

This amount does not include the many other costs associated with supplying UNEs. Those costs may be much larger in total than the costs that we have quantified above. These additional costs include back-office costs, costs associated with collocation (such as secured access), the investment associated with failed or delinquent CLECs, uncollectables for UNE access, and extra regulatory and litigation costs associated with UNE access.

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<sup>10</sup> SBC, "BPON—Fiber to the Home (FTTH): Impacts of CLEC Access," *ex parte* communication to the FCC, March 22, 2002, p. 9.

### LINE 5: COST OF UNE-BASED CLEC

Line 5 is the cost of a UNE-based CLEC. In our initial filing, we estimated that the cost was \$10 per month less than the cost for the ILEC or \$ 46 per month. A relevant CNET article sheds light on this issue.<sup>11</sup> Table 2 presents an analysis of the costs of a UNE-based CLEC that provides DSL.

**Table 2**

DSL Costs	
Co-Location Cages per Month	\$ 1,800
DSL Connections per Cage	270
Co-location Charge per Line/Month	\$ 6.67
Bandwidth cost per Cage/Month	\$ 1,900
Bandwidth Cost /Cage/Line/Month	\$ 11.25
Average Cost per Loop	\$ 15.00
Monthly Line Costs	\$ 32.92
Marketing Costs	\$ 10.00
Total Monthly Line Costs	\$ 42.92
Source: All costs but marketing: Larry Barrett, "DSL Math Doesn't Always Add Up," CNET News.com (June 28, 2001). Marketing costs: From McKinsey-J.P. Morgan for 2005.	

The cost elements considered are the costs of a collocation cage and bandwidth, and the charge for the unbundled loop. These add up to \$33 per month per subscriber. To this are added \$10 per month of marketing cost—the same amount assumed for ILECs by McKinsey—J.P. Morgan. The total is \$43 per month—\$3 per month less than in our previous filing.

These costs estimates are based on the assumption that the CLEC interconnects at the central office—not at the remote terminal. Such interconnection might involve use of the optical concentration devices described above.

In our previous analysis we observed that the UNE-based CLEC could increase its profits further by also offering basic telecommunications services—including interstate and intrastate access and possibly long distance services. Our TELCOMP<sup>®</sup> model

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<sup>11</sup> Larry Barrett, "DSL Math Doesn't Always Add Up," CNET News.com (June 28, 2001).

indicates that supplying such services, even without DSL, is very profitable.<sup>12</sup> Telcomp is a computer model that evaluates the revenues and costs of a CLEC that provides its own switch but relies on UNEs for loops and inter-office transmission facilities. Telcomp provides a very detailed analysis of collocation costs, as well as other costs.

The combined venture of supplying both DSL and basic telecommunications services will be all the more profitable if the development of new broadband applications substantially increases demand for DSL.

### SUMMARY OF MODEL REFINEMENTS

The model refinements described above strengthen our previous results. As before, absent unbundling requirements, the investment to support mass DSL deployment earns positive economic profits in the favorable scenario (Scenario 2) and negative economic profits in the unfavorable scenario (Scenario 1). Thus, the cost-effectiveness of the investment depends on the probability of Scenario 2, as opposed to Scenario 1.

Given the numerical values in Table 1, expected economic profits are positive if the probability of Scenario 2 is greater than 33 percent. That is, 33 percent of \$9.20 plus 67 percent of negative \$4.60 equals zero. Thus, in this framework without unbundling requirements, wherever the probability of success is more than 33 percent, the investment to support mass DSL deployment is cost-effective.

With unbundling requirements, the economics in Table 1 become very unfavorable. In Scenario 2, UNE-based CLECs make a profit of \$10 per line and still undercut the ILEC's price by \$13 per month. This scenario is all the worse when one considers that that the ILEC would not recover the costs of incremental infrastructure investments on DSL loops sold as UNEs.

Table 3 is a realistic illustration of the effect of UNE-based competition in the favorable scenario. It has two columns to reflect the ILEC's operations in both retail and UNE markets. Several of the lines are the same as in Table 1. The lines that differ from Table 1 are as follows:

#### **Line 1: ILEC Price**

In Table 1, we observed that UNE-based CLECs could offer DSL service for \$53 per month and still make a profit of \$10 per month. We assume in Table 3 that the ILEC's retail price cannot exceed \$60 per month if the ILEC is to be competitive. Even that price is 15 percent higher than the CLEC's price.

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<sup>12</sup> <http://www.spri.com/pub.htm>.

The UNE price is taken directly from Table 2.

As the table shows, the difference between what ILECs could expect from retail revenues in the favorable scenario *far* exceed TELRIC.

### **Line 2: Cost Savings**

This line shows the cost savings associated with supplying UNEs rather than retail services. These savings consist of \$10 per month for the costs of marketing and CPE and \$4 per month for the DSLAM. The \$10 per month number comes directly from the J. P. Morgan-McKinsey study. The \$4 number is an estimate of the monthly cost corresponding to J. P. Morgan-McKinsey's estimate of \$138 in capital expenditures. The other numbers in the two columns are the same.

### **Lines 4 and 5: Total Costs and Profits**

Lines 4 and 5 show total costs and profits, respectively, given unbundling requirements. They include the cost of unbundling.

The numbers in Table 3 show that the ILEC accrues a small positive profit on each retail line sold. These profits are substantially lower than those in Scenario 2 of Table 1, because of the necessity to lower the retail price and by the costs to accommodate unbundling. At the same time, the ILEC accrues a significant loss on each UNE line sold. These losses do not include any "opportunity costs." They are strictly the result of making infrastructure investments to support DSL and not recovering the associated costs in UNE rates.

The ILEC's profits in Table 3 depend on the fraction of its sales that are retail as opposed to UNE. Since the losses on UNE sales are so sizable, the ILEC loses money overall, even if 75 percent of its sales are retail and 25 percent are UNEs. (75 percent times \$2.7 plus 25 percent times negative \$10.3 equals -\$0.55.) And this is the favorable scenario, where new broadband applications are assumed to have been developed!

**Table 3**

<b>Scenario for Mass DSL Deployment with UNE-Based Competition (\$ per month per line)</b>		
	<b>Retail</b>	<b>UNE</b>
1. ILEC price	60	15
2. ILEC cost, apart from the cost of unbundling		
a. ILEC cost, apart from cost of capital and income taxes	38	38
b. Cost Savings	0	-14
c. ILEC cost of debt <sup>a</sup>	3.6	3.6
d. ILEC cost of equity <sup>a</sup>	5.4	5.4
e. ILEC income taxes <sup>b</sup>	7.4	-10.6
f. ILEC total cost, apart from unbundling	54.4	22.4
3. ILEC cost of unbundling	2.9	2.9
4. Total Cost with unbundling requirements	57.3	25.3
<b>5. ILEC profit with UNE-based CLEC competition</b>	<b>2.7</b>	<b>-10.3</b>
<sup>a</sup> Calculated from McKinsey - J.P. Morgan estimates, assuming 8-year depreciation life, debt-equity ratio of 1, 10 percent cost of debt, 15 percent cost of equity. <sup>b</sup> Calculated assuming a 40-percent tax rate.		

### **Investment Deterred by Unbundling Requirements**

In our initial filing, we estimated the likely range for the DSL investment that will be deterred by unbundling requirements. For the lower end of the range, we used SBC's capital expenditures on Project Pronto of \$6 billion. On a forward going basis, this estimate should be reduced to \$2.8 billion, because SBC expended \$3.2 billion before it aborted the project.

SBC only accounts for about a third of U.S. access lines. Many of the economic considerations that led SBC to move forward with Project Pronto in the first place apply to other ILECs, as well. Thus, total ILEC investments, absent unbundling, could be three times the expenditures of Project Pronto or \$18 billion (less the \$3.2 billion already expended by SBC and the amount expended by other ILECs). At the same time, the economic considerations that led SBC to abort Project Pronto because of unbundling requirements apply to all ILECs.



Furthermore, the \$6 billion figure for Project Pronto does not include many ancillary expenditures that would be associated with DSL in the future (e.g., expenditures to provide video programming, as modeled by CSMG). Much of this investment will be lost as well if unbundling requirements cause ILECs not to invest to support mass DSL deployment.

If one were to multiply the \$6 billion figure for Project Pronto by three, add a significant amount for ancillary investments, and subtract the \$3.2 billion that SBC has already expended (and the amounts that other ILECs have expended), the result would be approximately \$20 billion or more. This amount is a better estimate of deterred investment than the lower end of the range. If the FCC were affirmatively to remove the unbundling requirements applicable to investments to support mass DSL deployment, the economics of such investments would become much more favorable for *all* ILECs.

Even this amount is not the upper end of the range of investment that may be deterred by unbundling requirements. The CSMG study makes a convincing case that investments to support FTTH could become cost-effective in the near future, but not with the current unbundling requirements. If unbundling requirements deter, or even substantially delay FTTH, the cost to the economy would be enormous.

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## 5. CONCLUSIONS

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Unbundling requirements afford severe disincentives for ILEC infrastructure investments to support mass DSL deployment. The most likely result of those requirements is that ILECs will not make those investments and thereby cede a large part of the broadband market to monopoly provision by cable. The amount of deterred ILEC investment will probably be approximately \$20 billion or more.