

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

In the Matter of

Review of the Section 251 Unbundling  
Obligations Of Incumbent Local  
Exchange Carriers

CC Docket No. 01-338

Implementation of the Local  
Competition Provisions of the  
Telecommunications Act of 1996

CC Docket No. 96-98

Deployment of Wireline Services  
Offering Advanced Services Capability

CC Docket No. 98-147

**COMMENTS OF CORNING, INC.**

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## SUMMARY

For the vast majority of Americans, truly advanced communications capability remains unattainable. While the Internet backbone and some large businesses have been fitted with ultra-high-speed fiber optics, the copper wire, coaxial cable, or spectrum-limited wireless last mile to consumer residences remains a bottleneck for high-speed data. Fiber-to-the-home technology can solve this last-mile bottleneck, and finally allow consumers to access real high-speed data networks.

Corning is the largest U.S. supplier of optical fiber, optical cabling and photonic components, and Corning supplies every type of carrier, including both CLECs and ILECs. As a result, Corning seeks to strike a balance between sometimes opposing industry interests, a compromise that will allow investment in advanced technology to go forward without undermining the foundation for competition.

Tremendous strides have been made in reducing the cost of fiber-to-the-home systems to the point where they are comparable in cost to other broadband technologies. As a result, fiber-to-the-home has been deployed, largely by CLECs, to nearly 34,000 homes. However, rules that require ILECs to unbundle fiber-to-the-home are stifling the further deployment of this important technology. These rules are unnecessary, because fiber-to-the-home build outs require either entirely new facilities or a full-scale replacement of existing facilities. As a result, none of the oft-cited incumbent advantages apply to fiber-to-the-home; CLECs are just as able to deploy this technology as are ILECs. This fact is graphically illustrated by the enormous lead CLECs have established in deploying fiber-to-the-home.

A study commissioned by Corning and performed by the Cambridge Strategic Management Group (“CSMG”) shows the pernicious effects of unbundling rules on ILEC fiber deployment. Using real-world economic data and the wire centers in Texas as close demographic proxies for the entire United States, CSMG calculated how rapidly ILECs would be likely to overbuild existing networks with fiber-to-the-home given no regulation of such services. CSMG then overlaid unbundling requirements to calculate the economic effect these rules have on ILEC decisions to overbuild. The results of the study are compelling: mandatory unbundling eliminates more than 80 percent of the fiber-to-the-home overbuilds that otherwise would be economically viable, and cuts about \$39 billion in RBOC capital expenditures from the economy. The study also finds that CLECs face the same or cheaper costs in deploying fiber-to-the-home as do ILECs.

In order to comport with Section 706, which requires the Commission to encourage the deployment of advanced telecommunications capability, the FCC should eliminate the unbundling of fiber-to-the-home networks. Fiber-to-the-home offers bandwidth that enables all of the advanced services contemplated by the statute, including full motion video, and has capabilities that far outstrip other available “broadband” solutions such as cable modems or DSL. As both Congress and the Commission have recognized in relation to Section 706, widespread rollout of high-speed data networks would have far-reaching, positive social and economic effects in terms of productivity, education and health.

Furthermore, reasonable cost fiber-to-the-home technologies are available now, and where parties can realize the full benefit of these systems, they are being deployed. However, the unbundling rules impose disincentives on investment for both ILECs (who have to unbundle)

and CLECs (who can gain by waiting for ILECs to build facilities rather than building their own). The barriers to more rapid rollout are thus primarily regulatory, rather than economic or technological.

The Commission has the authority to find that fiber-to-the-home is not subject to mandatory unbundling rules under Section 251. Because CLECs can and do self-provision fiber-to-the-home networks, a lack of access to ILEC facilities (which rarely exist) will not “impair” a CLEC’s ability to offer service over fiber, and such access is certainly not “necessary” for CLEC service offerings. Beyond the minimum necessary and impair standard, the Commission’s other criteria, such as spurring the development of competitive services, reducing regulation, and increasing administrative efficiency, are all furthered by eliminating unbundling with respect to fiber-to-the-home. In order to ensure regulatory certainty, the Commission should explicitly state that its affirmative finding that fiber-to-the-home does not meet the necessary and impair standard preempts states from issuing contrary rulings.

Finally, the Commission should forbear from requiring discounted resale rates for fiber-to-the-home-based services. Discounted resale obligations impose the same type of drag on fiber deployment as do unbundling rules, and are similarly unnecessary.

Eliminating the unbundling requirements on fiber-to-the-home systems is a reasonable and measured solution that will encourage both ILEC and CLEC investment in this important technology. This proposal reduces regulatory burdens while safeguarding competitive development, and can thus be embraced by all players in the communications marketplace.

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**COMMENTS OF CORNING, INC.**

**I. Introduction**

Pursuant to Section 1.415 of the Commission's Rules,<sup>1</sup> Corning, Inc. ("Corning") hereby submits the following comments in response to the Commission's above-referenced Notice of Proposed Rulemaking.

Corning supplies leading edge technologies for a number of sectors of the economy, including the telecommunications, computing display, and semi-conductor industries, and has a history of innovation in each of these segments. In the telecommunications industry, Corning is the inventor of low-loss optical fiber, and is the largest U.S. producer of optical fiber, optical cable, and photonic components. As a result, Corning has substantial experience in the

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<sup>1</sup> 47 CFR § 1.415.

provisioning, implementation, and economics of fiber optic telecommunications networks. For the reasons set forth below, Corning urges the Commission not to retain the unbundling and discounted resale requirements for fiber-to-the-home technology and services.<sup>2</sup>

#### **A. The Opportunities Offered By Fiber-To-The-Home**

Corning has collaborated with a number of suppliers in developing fiber-to-the-home infrastructure that can be deployed for prices comparable to legacy copper plant. Importantly, fiber-to-the-home offers a range of capabilities far beyond those of standard copper. The transmission capacity of fiber optic networks is so vast, compared to traditional telephony networks, that carriers using the technology could offer POTS, full motion video, and unprecedented data transfer rates simultaneously. As a result, unlike other technologies, fiber-to-the-home fully meets the definition of “advanced telecommunications capability” contained in Section 706 of the 1996 Telecommunications Act.

Increased investment in fiber-to-the-home would lead to direct benefits in the technology sector of the economy, which has been particularly hard hit during the current recession. However, the beneficial effects would go beyond simply spurring increased investment. New, high-speed networks would allow the development of heretofore unavailable services, which could lead to the growth of whole new industries. The New Millennium Research Council recently conducted a study which concluded that converting the existing copper network to fiber

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<sup>2</sup> In these comments, Corning uses “fiber-to-the-home” to mean an entirely fiber optic cable transmission facility, between a distribution frame (or its equivalent) in an incumbent local exchange carrier central office and the loop demarcation point at an end-user customer premise. “New builds” are defined as a fiber-to-the-home deployment in a greenfield situation. As the name implies, “total rehabs” entail a fiber-to-the-home deployment to replace or overbuild existing copper facilities. Because of the paucity of fiber facilities in legacy loops, all prospective fiber-to-the-home deployment would necessarily consist of either entirely new build outs or total rehabilitations of existing plant.

optics would generate \$270 billion in investment over eight years and would create 1.2 million new and permanent jobs.<sup>3</sup> In order to gain these benefits, however, ILECs must be freed from unnecessary unbundling obligations.

## **B. Regulatory Barriers to Faster Deployment**

The biggest obstacles to faster deployment of fiber-to-the-home are the unbundling and wholesale resale pricing rules that currently apply to these (and other) network elements. As the National Research Council acknowledges, “[i]t is when looking to the future, to investment in new facilities, that reconsideration of unbundling is most important.”<sup>4</sup> ILECs are constrained from rolling out fiber-to-the-home because the unbundling and resale rules prevent them from realizing the full economic benefit of these systems. Allowing competitive carriers to access these new systems at forward-looking incremental cost, while forcing ILECs to shoulder all of the risk associated with their deployment, changes the cost/benefit analysis for ILECs in such a way that these companies are unwilling to overbuild advanced fiber technology in many areas where they would otherwise do so. SBC’s experience in Illinois is illustrative of the type of burdens being imposed. In Illinois, after the state Commerce Commission mandated unbundling of SBC’s new broadband network at TELRIC prices, SBC simply stopped investing in the technology. SBC’s chairman, Ed Whitacre, summed up the situation by saying “[the

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<sup>3</sup> Stephan B. Pociask, *Building a Nationwide Broadband Network: Speeding Job Growth*, New Millennium Research Council, February 25, 2002 (“*Millennium Council Report*”).

<sup>4</sup> COMPUTER SCIENCE AND TELECOMMUNICATIONS BOARD, NATIONAL RESEARCH COUNCIL, *BROADBAND: BRINGING HOME THE BITS*, National Academy Press S-15 (prepublication 2002) (“*Bringing Home the Bits*”).

Commission's] decision has made it economically impossible for SBC to recover the cost of deploying and operating the new DSL service in Illinois.”<sup>5</sup>

In contrast, CLECs (who are not exposed to mandatory unbundling) are driving the deployment of fiber-to-the-home systems, recognizing the remarkable reward that can be derived from these systems when they are deployed free from regulation.<sup>6</sup> In the last few years, CLECs have passed some 26,000 homes with fiber-to-the-home, while the RBOCs have only passed about 400. This illustrates that the unbundling rules are not only constraining; they are unnecessary. The Telecommunications Act requires that non-proprietary elements to be unbundled only when failure to do so would impair service offerings by competitive carriers. For proprietary elements, the standard is even stricter; these elements need to be unbundled only when the element is “necessary,” *i.e.*, when lack of access would preclude a carrier from providing the services it seeks to offer.<sup>7</sup> With fiber-to-the-home, the CLECs have the same ability to build out facilities as do ILECs. None of the traditional ILEC advantages applies in

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<sup>5</sup> See Letter from Edward E. Whitacre, Jr., Chairman, SBC to the Honorable H.J. Dennis Hastert, Speaker of the U.S. House of Representatives (March 14, 2001). Although the SBC example involves DSL, similar disincentives apply to all advanced network elements that are subject to unbundling requirements.

<sup>6</sup> As explained in detail below, CLECs are well in front of RBOCs in the deployment of fiber-to-the-home, and one industry supplier notes that deployment of this technology is being “driven” by CLECs. Cambridge Strategic Management Group, *Assessing the Impact of Regulation on Deployment of Fiber to the Home* at 51 (2002) (Attached as Attachment A) (“CSMG Study”). See also, *Optical Solutions and FiberPath 400 at a Glance*, available at <http://www.opticalsolutions.com/profile.shtml> (last visited March 4, 2002) (“*Optical Solutions Profile*”).

<sup>7</sup> Certain international standards have been established by the ITU for fiber-to-the-home networks. Where fiber-to-the-home is deployed according to these standards, it is likely a non-proprietary element and thus should be analyzed according to the impair standard. Some carriers have chosen to implement network designs that do not conform to the ITU standards. These networks may thus constitute “proprietary” elements, and it may be more appropriate to consider access to such networks under the more stringent “necessary” standard.

this circumstance; CLECs and ILECs begin on equal footing, and (absent regulation) face the same costs, opportunities, and challenges.<sup>8</sup>

### **C. The Importance Of Deregulation**

The FCC's unbundling rules inhibit investment in a variety of infrastructures beyond just fiber-to-the-home. In order to spur innovation and development of new technologies, Corning believes in the broadest possible deregulation.

Despite this commitment to broad deregulation, Corning has restricted these comments to the importance of eliminating unbundling requirements on fiber-to-the-home. Corning believes that its experience and position in the fiber industry give it a unique perspective on the challenges and opportunities facing this sector. Further, Corning has commissioned a detailed study of the effects of regulation on real-world deployment of fiber-to-the-home. It is thus on the specific topic of fiber-to-the-home that Corning can add the most value to the FCC's Triennial Review of Unbundled Network Elements.

## **II. CSMG Has Found That Applying Unbundling Rules To Fiber-To-The-Home Results In An 84 Percent Reduction In Fiber Build Out.**

Using actual investment and expense data and solidly grounded, real-world revenue estimates, CSMG has concluded that continuing to subject fiber-to-the-home to the UNE regime would eliminate about 84 percent of the ILEC fiber overbuilds that would otherwise occur.<sup>9</sup> The UNE regulations would reduce fiber-to-the-home penetration from 31 to 5 percent of

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<sup>8</sup> In fact, as CSMG notes, the CLECs' costs are likely lower because of lower labor rates. *CSMG Study* at 14.

<sup>9</sup> CSMG's study focused on ILEC incentives to overbuild existing plant, rather than the decision to deploy fiber versus copper in greenfield scenarios. However, CSMG noted that in most cases, the greenfield case would "have more attractive economics than the overbuild situation" examined in the report. *CSMG Study* at 3.

households, and eliminate \$39 billion in infrastructure investment by the ILECs. Unbundling rules also skew incentives for CLECs, and cause them to deploy fewer of their own competitive facilities.

**A. The CSMG Study Is Based On Real-World Data.**

The CSMG study evaluates the impact of regulation on the deployment of fiber-to-the-home infrastructure to existing customers by incumbent carriers. To accomplish this, CSMG first created a business case model for overbuilding fiber on top of the current legacy infrastructure with cost and revenue assumptions projected over 10 years (*i.e.*, 2003 to 2013). The baseline case assumed a “free market” regulatory environment, where ILECs are allowed to build out the infrastructure without having to sell access to the network to competitors at long-run incremental cost. CSMG projected the number of wire centers that would be profitable assuming no regulation. Then, CSMG added the revenue and costs of regulation to this model and projected the number of wire centers that would be profitable given mandatory unbundling.

To make the data as accurate and useful as possible, CSMG used actual wire center information in its study. CSMG chose to use all the wire centers in Texas in the study, because Texas closely approximates the United States as a whole in key demographic data such as distribution of population density, distribution of median income, and distribution of Central Office serving area.<sup>10</sup> CSMG also used actual infrastructure cost information, generated by combining information from three prominent fiber-to-the-home suppliers (Optical Solutions, Alloptic, and Marconi).<sup>11</sup> Finally, CSMG’s substantial experience in the telecommunications

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<sup>10</sup> *CSMG Study* at 32.

<sup>11</sup> *CSMG Study* at 17.

industry allowed the company to accurately estimate other miscellaneous costs that would influence the decision whether to build in a particular wire center or not, given the profit potential of each center.

Each wire center in the study group was run through the business case model CSMG developed, from which the company was able to determine whether an ILEC would be willing to invest the capital necessary to run fiber infrastructure to the homes served by the wire center.<sup>12</sup> Factors such as the cost of capital, subscription rate, and incremental revenue were all included in the analysis.

### **B. Unbundling Results In A Massive Decline In Fiber Built Out.**

As the attached report demonstrates, the detrimental effect of unbundling on building out fiber-to-the-home is dramatic. CSMG found that, assuming no such rules, it would be economically rational for ILECs to overbuild fiber-to-the-home to about 31 percent of the homes in the United States, meaning that about one third of American residences could receive fiber-to-the-home service through the normal course of the market, absent regulation.

Adding the unbundling rules causes a precipitous drop in the number of households that it makes economic sense to serve. Only one percent of the wire centers in the United States meet the profitability threshold to justify overbuilding fiber-to-the-home if this technology must be

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<sup>12</sup> Using data from cable industry build outs, CSMG also calculated the optimal build out coverage for each wire center. Rather than assume that the carrier would attempt to serve all the homes covered by the wire center, CSMG postulated that ILECs would first build to the most profitable areas within the wire center. The number of homes covered by the build out in each case reflects this adjustment. The numbers generated by the CSMG study are in line with general industry forecasts about the slow spread of fiber-to-the-home under present regulatory constraints. Communications Industry Researchers studied deployment rates under the current regulatory regime, and predicted that by 2005 less than three tenths of one percent of U.S. households would have access to fiber-to-the-home. Communications Industry Researchers, *Fiber Deployment Study* 187 (2001) (“*CIR Study*”).

unbundled once constructed. The economically rational build out in the regulated case reaches only five percent of the households in the country, an approximately 84 percent reduction when compared to the free market case. Stated differently, six times more homes would have access to fiber-to-the-home in the free market scenario versus the regulated scenario. CSMG's study indicates that the decreased revenue and share loss that results from mandatory unbundling "would dissuade ILECs from overbuilding their own plant [with fiber-to-the-home] except in very limited circumstances."<sup>13</sup>

In addition to using its best estimate about the pace of fiber rollout, CSMG also tested both optimistic and conservative assumptions to establish a range of results. CSMG concluded that "under any reasonable range of assumptions, [fiber-to-the-home] deployment is likely to be substantially higher in a free market environment compared to the regulated scenario."<sup>14</sup> In the conservative case, assuming a very slow pace for fiber rollout, CSMG found that fiber penetration would drop from 15 percent of households in the unregulated case to 0.5 percent in the regulated case, a 96 percent reduction.<sup>15</sup> Even in the most optimistic scenario, assuming a very rapid rollout for fiber, the drop in deployment (from 41 percent to 17 percent of households) represents nearly a 60 percent decline.<sup>16</sup>

When the results from the study sample are extrapolated to the entire United States, the pernicious effects of regulation on fiber deployment become clear. Imposing unbundling

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<sup>13</sup> *CSMG Study* at 30.

<sup>14</sup> *Id.* at 12.

<sup>15</sup> *Id.*

<sup>16</sup> *Id.*

requirements on fiber-to-the-home would slice \$39 billion from ILEC capital expenditures, and would result in a \$19 billion drop in ILEC annual revenues in 2013 alone.<sup>17</sup>

Moreover, the negative effects of regulation on fiber investment are not limited to the ILECs. As the National Research Council has found, unbundling generally can “inhibit facilities-based competition by reducing the incentives for competitors to build new facilities (or upgrade existing ones).”<sup>18</sup> CSMG’s research supports this finding as applied to fiber-to-the-home. In addition to restricting ILEC build out, CSMG concludes that mandatory unbundling “provide[s] incentives for CLECs to piggyback on ILEC fiber builds, rather than constructing competitive facilities of their own.”<sup>19</sup> As a result, while regulation “may result in more competitors (in certain limited areas), it would also result in a much smaller number of consumers with access to service from an advanced [fiber-to-the-home] network.”<sup>20</sup> For this reason, although costs between CLEC and ILEC deployment of fiber-to-the-home overbuilds are substantially identical (and, indeed, may favor CLECs due to lower labor costs),<sup>21</sup> CLECs cannot be counted on to provide a substitute to ILEC fiber-to-the-home investment if the unbundling regime is maintained.

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<sup>17</sup> *Id.* at 13.

<sup>18</sup> *Bringing Home the Bits* at S-15.

<sup>19</sup> *CSMG Study* at 30.

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

<sup>21</sup> *Id.* at 14.

### **III. The Commission Must Except Fiber-To-The-Home Deployments From Section 251 Unbundling And Resale Pricing Rules In Order To Comport With Its Section 706 Mandate.**

Section 706 requires the FCC to encourage the deployment of advanced telecommunications capability. Fiber-to-the-home offers the capability to provide all of the services contemplated by the statute in a way in which cable modems, DSL, and other popular “broadband” services cannot. As a result, fiber-to-the-home uniquely advances the statutory mandate imposed by Congress in Section 706.

As the CSMG study reports, regulation is inhibiting the deployment of fiber-to-the-home. This regulation is simply not necessary. Because virtually all fiber-to-the-home deployment consists of either new builds or total rehabilitations of existing plant, CLECs and ILECs operate on a level playing field, and ILECs possess none of the oft-cited advantages which lead to unbundling requirements.

In order to fulfill its statutory mandate and encourage the deployment of this unique technology, the FCC must act now to lift unbundling and discounted resale requirements on fiber-to-the-home. The FCC should also consider broader deregulation of advanced services, to promote innovation and deployment of other advanced infrastructures.

#### **A. Section 706 Requires The Commission To Encourage Deployment Of Advanced Telecommunications Capability.**

With the passage of the 1996 Act, Congress charged the FCC and state governments with “encourag[ing] the deployment on a reasonable and timely basis of advanced telecommunications capability to all Americans.”<sup>22</sup> Section 706 directs the Commission to

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<sup>22</sup> Telecommunications Act of 1996, Pub. L. 104-104, Feb. 8, 1996, 110 Stat. 153, Title VII § 706 (reproduced in the notes under 47 USC § 157) (“*Section 706*”).

conduct a regular survey of the deployment of advanced telecommunications capability, and further tasks both the FCC and state commissions with utilizing regulatory measures that “promote competition in the local telecommunications market” and “remove barriers to infrastructure investment.”<sup>23</sup> The Conference Report for the Act is even clearer on this latter point, stating that the FCC may use “other methods that remove barriers and *provide the proper incentives for infrastructure investment.*”<sup>24</sup>

### **1. Fiber Uniquely Meets the Advanced Telecommunications Capability Standard.**

The Act defines “advanced telecommunications capability” as:

[H]igh-speed, switched, broadband telecommunications capability that enables users to originate and receive high-quality voice, data, graphics and video telecommunications using any technology.

Fiber-to-the-home uniquely meets the criteria set forth in this definition. In the past, the Commission has had to interpret the statutory phrase “advanced telecommunications capability” very liberally, since many popular broadband technologies such as DSL, cable modems and fixed wireless simply do not provide the bandwidth necessary to actually deliver all of the services set forth in the statute. These services, which generally offer download speeds below 1.5 Mbps (and upload speeds even slower than that), cannot receive and certainly cannot originate “high quality...video telecommunications,” as Corning demonstrated in its comments on the most recent Section 706 survey of advanced service deployment.<sup>25</sup> Transmission of even

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<sup>23</sup> *Id.*

<sup>24</sup> H.R. REP. NO. 104-458, at 210 (1996) (emphasis added).

<sup>25</sup> *Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans*, CC Docket No. 98-146, Reply Comments of Corning Incorporated at 4-5 (filed October 9, 2001) (“*Corning 706 Comments*”).

one channel of compressed (MPEG-2) standard definition television requires at least 4 Mbps of bandwidth, far in excess of the capability of DSL and cable modems.<sup>26</sup>

Because of the bandwidth limitations of these widely available “broadband” technologies, the Commission has been forced to use the relatively low bandwidth capability of 200 kbps each way in its definition of “advanced telecommunications capability.”<sup>27</sup> As the FCC has stated, this low bandwidth requirement is meant to “measure what is happening in the current market,” and is not intended as an ultimate goal.<sup>28</sup> However, the Commission noted that “products are beginning to emerge that require high-bandwidth capability, such as high-definition video.”<sup>29</sup> The true intent of Section 706 was for the Commission to push the envelope of technology and “encourage the deployment” of new, truly advanced capabilities.<sup>30</sup> The emergent services that the Commission refers to should be the focus of FCC efforts, rather than those services that are already available.

In contrast to cable modem, DSL and fixed wireless services, fiber-to-the-home has the capacity to provide true “advanced telecommunications capability.” Fiber-to-the-home enables download speeds an order of magnitude higher than those provided by DSL or cable, offering the

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<sup>26</sup> *Id.*

<sup>27</sup> *Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans*, Third Report, CC Docket No. 98-146, FCC 02-33, ¶ 10 (rel. February 6, 2002) (“*Third Report*”).

<sup>28</sup> *Id.*

<sup>29</sup> *Id.*

<sup>30</sup> *Section 706*.

possibility of 155 Mbps transmissions downstream and 4 Mbps transmissions upstream.<sup>31</sup> A residence or small business wired directly with fiber would not only be able to receive multiple channels of high-definition video; it would also be able to originate video service, as contemplated by the statute. Fiber-to-the-home thus represents a quantum leap over current “broadband” services. Encouraging its deployment would allow the Commission finally to fulfill the “advanced telecommunications capability” mandate contained in Section 706.

## **2. Reasonable Cost Fiber-To-The-Home Is Available Now.**

Fiber-to-the-home is not a blue-sky technology. Fiber-to-the-home systems are available and are being deployed today, for costs similar to or less than laying new copper plant; the National Research Council has concluded that “the total life-cycle costs for fiber are believed to be lower than the costs of alternatives for new installations.”<sup>32</sup> For example, Optical Solutions is deploying Passive Optical Network (“PON”) technology that allows 32 homes to share a passive fiber network.<sup>33</sup> In this type of network, the plant between the customer premises and the headend at the Central Office consists entirely of passive components; no electronics need be in the field. By networking subscribers in this fashion, PON technology substantially reduces equipment and maintenance costs, making its deployment cost-competitive with traditional copper plant. Optical Solutions cites CLECs as the “primary players” driving investment in

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<sup>31</sup> *Corning 706 Comments*, Exhibit 1, Declaration of William Shank at 2 (“*Paceon Declaration*”).

<sup>32</sup> *Bringing Home the Bits* at 4-9.

<sup>33</sup> *Optical Solutions and Passive Optical Networks (PONs) for Local Access*, <http://www.opticalsolutions.com/pon.shtml> (last visited March 4, 2002).

fiber-to-the-home,<sup>34</sup> but CLECs are not the only entities that have recognized the capacity and cost advantages of adopting this technology; municipalities have, as well. The town of Kutztown, Pennsylvania, located near Allentown, is in the process of rolling out a fiber-to-the-home system based on Optical Solutions technology.<sup>35</sup>

Other companies are also competing in this sector. World Wide Packets, a company in Washington State, offers Gigabit Ethernet service using its LightningEdge technology,<sup>36</sup> deployed over fiber-to-the-home networks. The company has estimated the costs of deploying fiber at between \$300 and \$1250 per home, depending on whether installation costs can be combined with other trenching activities, a cost similar to the deployment of older, less technologically capable systems such as HFC.<sup>37</sup>

Similarly, Pacion (a division of Mitsubishi Electric) has determined that deploying its PON fiber-to-the-home solution actually can cost less than employing standard copper technology.<sup>38</sup> As with Optical Solutions, Pacion's system employs a PON that delivers 155 Mbps of download capacity, shared amongst 32 homes. Pacion's system also guarantees 4 Mbps of upload capacity per subscriber.<sup>39</sup> Pacion has calculated that, given a build out to

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<sup>34</sup> *Optical Solutions Profile*.

<sup>35</sup> Borough of Kutztown, <http://www.kutztownboro.org/TelecomWeb2001.htm> (visited March 5, 2002).

<sup>36</sup> World Wide Packets, <http://www.worldwidepackets.com> (visited March 5, 2002).

<sup>37</sup> Jim Bartold, *Grant Co. Consumers Landing a New "Gig"*, CableWorld (October 2000) [http://www.worldwidepackets.com/assets/documents/Reprint\\_CableWorld.pdf](http://www.worldwidepackets.com/assets/documents/Reprint_CableWorld.pdf) ("CableWorld").

<sup>38</sup> *Pacion Declaration* at 2-3.

<sup>39</sup> *Id.* at 3.

10,000 homes, installing its fiber-to-the-home technology would cost \$1,956 per subscriber, versus \$2,211 per subscriber for a copper plant build out providing POTS and DSL service.<sup>40</sup>

However, one artificial disadvantage to pushing fiber closer to the individual residence is that it complicates the physical process of providing unbundled loops. With fiber terminations at the curbside or even NID on the home, providing sufficient collocation space becomes difficult.<sup>41</sup> While the methods and procedures for providing unbundled copper loops are relatively straightforward and well established, fiber-to-the-home presents a much more difficult scenario.<sup>42</sup> ILECs are thus reluctant to introduce this technology, and in many cases prefer standard copper plant even though its performance lags far behind fiber.

As the above examples and the CSMG study demonstrate, the barriers to broader fiber-to-the-home deployment are not technological or financial, but rather are regulatory. Given the dramatic advantages offered by fiber-to-the-home and the wealth of incremental revenues that could be derived from deploying this technology, economically rational carriers would be deploying far more fiber today if it were not for artificial regulatory burdens.<sup>43</sup>

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<sup>40</sup> *Id.* at 3.

<sup>41</sup> *Bringing Home the Bits* at 4-7, n. 7.

<sup>42</sup> *Id.*

<sup>43</sup> *See CSMG Study* at 30.

## **B. Increased Fiber-To-The-Home Deployment Will Have A Variety Of Important Social And Economic Benefits.**

The Commission has acknowledged that “[t]he widespread deployment of broadband infrastructure has become the central communications policy objective of the day.”<sup>44</sup> This is because “ubiquitous broadband deployment will bring valuable new services to consumers, stimulate economic activity, improve national productivity, and advance economic opportunity for the American public.”<sup>45</sup> The recognition of these potential benefits underpinned Congress’ inclusion of Section 706 in the 1996 Act.

Increased access to fiber-to-the-home will have both direct and indirect social and economic effects. For example, broadband services allow workers to telecommute more easily (and more productively) than they could otherwise. The number of “teleworkers,” who made up about 10 percent of the workforce in 2000, “could increase dramatically in the coming years if technology continues to improve.”<sup>46</sup> These “increases in teleworkers could have profound impacts on worker behavior and satisfaction, employer profitability, and preferred management practices.”<sup>47</sup> The impact of telecommuting ranges beyond the obvious potential for increases in worker satisfaction and productivity, however. Pilot programs have found that telecommuters travel fewer miles, which can reduce fuel consumption by 29 percent over the course of a year

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<sup>44</sup> *Appropriate Framework for Broadband Access to the Internet over Wireline Facilities*, Notice of Proposed Rulemaking, CC Docket Nos. 95-20, 98-10, FCC 02-42, ¶ 1 (rel. February 15, 2002) (“*Title I NPRM*”).

<sup>45</sup> *Title I NPRM*, ¶ 1.

<sup>46</sup> Dr. Carl E. Van Horn and Duke Storen, *Telework: Coming of Age? Evaluating the Potential Benefits of Telework*, (last visited March 28, 2002) [http://www.dol.gov/asp/telework/pl\\_1.htm](http://www.dol.gov/asp/telework/pl_1.htm) (“*Van Horn and Storen*”).

<sup>47</sup> *Van Horn and Storen*.

and reduce emissions by 50 to 70 percent on telecommuting days.<sup>48</sup> Moreover, telecommuting “may have the capacity to overcome geographic isolation from desired labor markets and help bridge the digital divide,” by allowing employers to establish remote work centers in residential areas where commuting would otherwise be difficult or impractical.<sup>49</sup>

Wide scale deployment of fiber-to-the-home facilities would also offer benefits for health and education. Telemedicine, which allows patients and physicians to interact virtually over great distances, is a developing field. As real, video-capable broadband growth accelerates, so too will both the availability and capability of telemedical services. These telemedical services could cut down on the number of visits to doctors,<sup>50</sup> and increase the availability of medical services in areas far from established medical facilities. In the educational realm, the existing narrowband Internet has already transformed the way in which students and instructors interact. Online universities allow students to pursue education that would otherwise be impossible.<sup>51</sup> On more traditional campuses, e-mail and file-sharing have greatly enriched the education opportunities available to students. Fiber-to-the-home presents the next logical step in the evolution of education, allowing a broader range of electronic services than are now available. Instantly available video of class sessions, for example, would increase the effectiveness of online learning programs, allowing them to better serve existing students and increasing the

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<sup>48</sup> *Van Horn and Storen.*

<sup>49</sup> *Van Horn and Storen.*

<sup>50</sup> Anick Jesdanun, *Will Speedy Connections Improve Life?*, Yahoo! News (March 11, 2002) [http://story.news.yahoo.com/news?tmpl=story&u=/ap/20020311/ap\\_on\\_hi\\_te/broadband\\_promise\\_3](http://story.news.yahoo.com/news?tmpl=story&u=/ap/20020311/ap_on_hi_te/broadband_promise_3) (visited April 2, 2002) (“*Jesdanun*”).

<sup>51</sup> *See, e.g.*, University of Phoenix Online Degree Program, <http://www.phoenix.edu/general/> (visited April 2, 2002).

types of subjects that could be covered. Widespread deployment of fiber-to-the-home will also expand the ability of individuals to share information and perform research outside of formal educational settings.<sup>52</sup>

Additional fiber-to-the-home deployment may also lead to job growth. As noted above, the New Millennium Research Council has forecasted the addition of 1.2 million jobs from the implementation of a nationwide fiber-to-the-home network.<sup>53</sup>

In addition to such concrete effects, the deployment of widespread fiber-to-the-home access will almost certainly have social effects that are as profound as they are difficult to envision. As with the development of the World Wide Web and the Internet, the deployment of fiber-to-the-home will allow people to perform familiar tasks (such as shopping) in new ways, and will likely create entirely novel opportunities and experiences. These developments will not only benefit consumers, but will help spur existing industries (such as entertainment and computer hardware) as well as creating whole new industry sectors.

### **C. The Commission Must Act To Fulfill Its Section 706 Obligations.**

In its Notice of Proposed Rulemaking, the Commission requested comment on whether it can “balance the goals of sections 251 and 706 by encouraging broadband deployment through the promotion of local competition and investment in infrastructure.”<sup>54</sup> When it comes to fiber-to-the-home, eliminating the unbundling requirements serves as a simple and equitable way to

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<sup>52</sup> See Jesdanun, *supra* note 50.

<sup>53</sup> *Millennium Council Report* at 7.

<sup>54</sup> *Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers*, Notice of Proposed Rulemaking, CC Docket Nos. 01-339, 96-98, and 98-147, FCC 01-361, ¶ 23 (rel. December 20, 2001) (“*NPRM*”).

meet the goals of Sections 251 and 706. As set forth below, there are three aspects of this solution that make it an easy and effective balance to strike.

**1. Fiber-To-The-Home Dovetails Perfectly With Statutory Requirements.**

Fiber-to-the-home meets the Section 706 definition of “advanced telecommunications capability” more exactly than any other popular broadband technology. The technological capabilities offered by fiber-to-the-home are precisely those that Congress identified in the statute as requiring the Commission’s attention and encouragement, and there are thus few current technologies better suited to the Section 706 mandate. Investment in fiber-to-the-home will dramatically increase the range of services available to Americans, will provide much needed investment in the technology sector, and will have large-scale secondary benefits for the economy generally.

**2. Incumbent Carriers Have No Advantages Over CLECs.**

As noted above, virtually all fiber-to-the-home deployments are made in “new build” or “total rehabilitation” situations, because the entire outside plant from the Central Office to the customer must consist of fiber. Incumbent carriers have no cost or network leveraging advantage when it comes to deploying fiber-to-the-home in these circumstances. Because fiber deployment inevitably involves circumstances where a new network is being constructed from scratch or an older, legacy network is being replaced or overbuilt with new systems, ILECs have none of the traditionally cited advantages over CLECs. There are no existing facilities to leverage or unbundle, and both ILECs and CLECs face the same challenges and costs in deploying new plant.

A review of recent fiber-to-the-home activity in the United States is instructive. In the past few years, CLECs have constructed fiber-to-the-home systems passing 26,000 homes, with almost 12,000 subscribers to various communications services.<sup>55</sup> By contrast, the RBOCs have miniscule fiber-to-the-home activity underway, having passed only a few hundred homes. Similarly, Communications Industry Researchers has concluded that there is “no one installing copper but ILECs,” and that fiber “offers CLECs the ability to offer more bandwidth at a lower cost, providing...a legitimate economic argument for local competition.”<sup>56</sup>

There is no indication from these facts that CLECs face disadvantages when building out new or rehabilitated fiber.<sup>57</sup> Indeed, the fact that CLECs are so prominent on the list of companies deploying fiber-to-the-home tends to show that the unbundling rules (which do not apply to CLECs) are what are preventing ILECs from moving forward with equally aggressive fiber build outs.

### **3. Fiber-To-The-Home Costs No More Than Copper Plant And Offers A Myriad Of Economic Opportunities.**

As Pacion and others have demonstrated, the cost structure for using fiber-to-the-home is very similar to that of traditional copper wire.<sup>58</sup> Cost parity exists despite the raft of advantages offered by fiber-to-the-home, including vastly increased performance and service, reduced maintenance costs, greater longevity, and increased potential for future upgrades. This list of

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<sup>55</sup> In addition, small ILECs (which are not subject to unbundling) and municipal governments are beginning to build their own fiber-to-the-home systems. Currently, such systems pass an estimated 7,400 homes. *CSMG Study* at 51.

<sup>56</sup> *CIR Study* at 20.

<sup>57</sup> *CSMG Study* at 51.

<sup>58</sup> *Pacion Declaration* at 3; *CableWorld*.

benefits makes the decision to deploy advanced telecommunications capability via fiber-to-the-home in new builds and total rehabs an easy one, where regulation permits the carrier to utilize the full value of its investment.<sup>59</sup>

Moreover, deploying fiber-to-the-home in an overbuild allows the investing carrier to realize a range of incremental income opportunities as compared to retaining an all-copper network. These include video and high-speed data offerings that would not be possible with the currently existing network. However, the burden imposed by regulation tends to make these opportunities less economically attractive.<sup>60</sup> As CSMG shows, the excess costs associated with regulation cause a dramatic drop in the number of households to which overbuilding with fiber makes economic sense.<sup>61</sup>

The Commission has stated its preference for “a minimal regulatory framework” in encouraging the deployment of advanced services.<sup>62</sup> There is no better candidate for such an approach than fiber-to-the-home. CSMG has found that, by lifting the unbundling rules, the Commission can allow market forces and economics to drive the deployment of true advanced telecommunications capability, far beyond what the FCC has to this point considered “advanced.” Because of this strong economic case, fiber-to-the-home requires no complex set of agency rules or oversight to encourage its deployment. In order to fulfill its Section 706 mandate here, the Commission need only let the market work.

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<sup>59</sup> *CSMG Study* at 3.

<sup>60</sup> *CSMG Study* at 26.

<sup>61</sup> *Id.*

<sup>62</sup> *Third Report*, ¶ 133.

#### **D. Section 706 Requires Even Broader Deregulation.**

These comments focus on lifting regulatory restrictions on fiber-to-the-home because of the compelling justification for this deregulatory step. In addition, this is an area in which Corning has substantial expertise, as well as access to real-world information in the form of the economic analysis performed by CSMG.<sup>63</sup> Corning thus believes its comments are most valuable to the Commission with respect to this limited point. However, Corning supports deregulation broader than the specific steps that it advocates here, and urges the FCC to consider taking further action to deregulate the telecommunications industry.

#### **IV. The FCC Has The Authority To Implement This Proposal.**

The Commission is required by Section 251(d)(2) to determine which network elements must be unbundled. Fiber-to-the-home does not meet the statutory criteria for mandatory unbundling, and thus must be excluded from the list of UNEs.

##### **A. Lack Of Unbundled Access To Fiber-To-The-Home Facilities Is Not Necessary To CLEC Service Offerings, Nor Would It Impair Such Offerings.**

Section 251(d)(2) of the Communications Act sets forth the standard by which the Commission must judge whether to impose unbundling obligations on specific network elements.<sup>64</sup> For non-proprietary elements, the Commission must take into account “whether the failure to provide access to such network elements would impair the ability of the telecommunications carrier seeking access to provide the services that it seeks to offer.”<sup>65</sup> For

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<sup>63</sup> See, generally, *CSMG Study*.

<sup>64</sup> 47 USC § 251(d)(2).

<sup>65</sup> 47 USC § 251(d)(2)(B).

elements that are proprietary in nature, the statute requires the FCC to consider whether the element is “necessary” to provide service.

The International Telecommunications Union (“ITU”) has developed a number of internationally recognized standards for fiber-to-the-home, and some carriers have chosen to deploy networks that comport with these standards. In networks that adopt these standards, fiber-to-the-home is not likely a proprietary element and should be analyzed using the “impair” standard.<sup>66</sup> Other carriers have deployed networks that do not conform to the standards set by the ITU. In these networks, the fiber-to-the-home element may meet the Commission’s definition of “proprietary in nature,”<sup>67</sup> and thus may be better analyzed using the more strict “necessary” standard. This standard requires unbundling only where lack of access to the element in question would “preclude a requesting carrier from providing the services it seeks to offer.”<sup>68</sup> Logically, an element whose absence does not “impair” service cannot also be “necessary” to provide service. In other words, an element that does not meet the impair standard cannot meet the necessary standard. As set forth below, the lack of unbundled access to fiber-to-the-home (whether or not proprietary) does not impair CLECs from offering service, and thus fiber-to-the-home is also not “necessary” to offer service.

In the *UNE Remand Order*, the Commission found that a network element meets the “impair” standard if:

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<sup>66</sup> Implementation of the Local Competition Provisions of the Telecommunications Act of 1996, 15 FCC Rcd 3696, 3717-18 (1999) (“*UNE Remand Order*”).

<sup>67</sup> An element is “proprietary in nature” if “an incumbent LEC can demonstrate that it has invested resources (time, material or personnel) to develop proprietary information or network elements that are protected by patent, copyright or trade secret law....” *Id.* at 3717.

<sup>68</sup> *Id.* at 3721-22 (emphasis in original).

taking into consideration the availability of alternative elements outside the incumbent's network, *including self-provisioning by a requesting carrier* or acquiring an alternative from a third-party supplier, lack of access to that element materially diminishes a requesting carrier's ability to provide the services it seeks to offer."<sup>69</sup>

The Commission has identified a number of factors to help determine whether alternative sources of network elements are "reasonably available from other sources."<sup>70</sup> These include the cost of the alternative, the timeliness with which the alternative can be provisioned, the quality of the alternative, the ubiquity of the alternative's availability, as well as operational factors.<sup>71</sup>

Excluding fiber-to-the-home from the unbundling rules would not "materially diminish" a carrier's ability to provide fiber service. Indeed, because of the unique nature of fiber-to-the-home deployment (*i.e.*, new builds and total rehabs), CLECs and ILECs are identically situated, with respect to the Commission's factors.

The ILECs generally do not have any pre-existing fiber-to-the-home facilities that could be unbundled or resold. Employing fiber-to-the-home technology requires substantial new investment, rather than redirection of already existing resources. Facilities costs are thus the same for both the ILEC and the CLEC.<sup>72</sup> Each must purchase the same equipment and perform the same construction tasks. Indeed, to the extent that CLECs enjoy a labor cost advantage over ILECs, the construction cost to CLECs may be less than to ILECs.<sup>73</sup> Because the legacy copper

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<sup>69</sup> *Id.* at 3725 (emphasis added).

<sup>70</sup> *Id.* at 3731.

<sup>71</sup> *Id.*

<sup>72</sup> *CSMG Study* at 3.

<sup>73</sup> *Id.* at 14.

plant is either non-existent (in new builds) or superfluous (in total rehabs), the ILEC cannot use pre-existing network elements to reduce the cost or scope of the construction needed. There are thus no “substantive differences between the alternative outside the incumbent’s network and the incumbent’s network.”<sup>74</sup>

Economies of scale, which have concerned the FCC with respect to other network elements, do not come into play here. The equipment being purchased is unique to fiber-to-the-home, and thus any discounts based on scale are dependent on the size of the build out, rather than the size of the carrier’s pre-existing network. Similarly, the timeliness of the alternative is also exactly the same. Where no pre-existing ILEC facilities exist, the CLEC can accomplish build out just as quickly as the ILEC.

The alternative available to CLECs also meets the other criteria set forth by the Commission.<sup>75</sup> The facilities purchased by a CLEC are likely to be the same as those the ILEC would purchase, and will probably even be sourced from the same basic set of suppliers. As a result, the ILEC’s service would have no inherent quality advantage, and the operational factors would be exactly the same. Finally, due both to the nature of fiber-to-the-home as a newly constructed service and the Commission’s interconnection rules, ILECs would have no advantage when it comes to ubiquity.

The fact that CLECs have the same ability to construct fiber-to-the-home facilities as ILECs is demonstrated by actual marketplace evidence. As the Commission has found, “the existence of some significant level of competitive LEC facilities deployment is probative of

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<sup>74</sup> *UNE Remand Order* at 3725.

<sup>75</sup> *Id.* at 3731.

whether competitive LECs are impaired from providing service.”<sup>76</sup> In fact, the marketplace is the “most persuasive evidence of the actual availability of alternatives,”<sup>77</sup> and for this reason the Commission has “strongly encouraged” parties to “submit evidence regarding actual marketplace conditions” in the Triennial Review proceeding.<sup>78</sup> CLECs have aggressively deployed fiber facilities. As the CSMG inventory shows, CLECs number among the top companies deploying fiber-to-the-home,<sup>79</sup> and Optical Solutions touts CLECs as being the driving force behind fiber deployment.<sup>80</sup> In fact, CLECs have deployed fiber-to-the-home facilities that pass more than 65 times as many homes as RBOCs, clear evidence that CLECs can and do self-provision this element.<sup>81</sup>

**B. The Commission’s Other Section 251 Factors Point Toward Eliminating Fiber-To-The-Home Unbundling.**

Because Section 251(d) requires the Commission to consider “at a minimum” the necessary and impair standards when deciding whether to require unbundling, the agency has determined that it is appropriate to also consider “other standards that [it] believe[s] are consistent with the objectives of the 1996 Act.”<sup>82</sup> These factors include (a) the rapid introduction of competition in all markets, (b) the promotion of facilities-based competition, investment and

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<sup>76</sup> *Id.* at 3725-26.

<sup>77</sup> *Id.* at 3731-32.

<sup>78</sup> *NPRM*, ¶ 17.

<sup>79</sup> *CSMG Study* at 51.

<sup>80</sup> *Optical Solutions Profile*.

<sup>81</sup> *CSMG Study* at 51.

<sup>82</sup> *UNE Remand Order* at 3746 (*quoting* Implementation of the Local Competition Provisions of the Telecommunications Act of 1996, 11 FCC Rcd 15499, 15641 (1996)).

innovation, (c) reduced regulation, (d) certainty in the market, and (e) administrative practicality.<sup>83</sup>

Deregulating fiber-to-the-home encourages these important goals. Unbundling generally has a depressant effect on deployment of competitive facilities.<sup>84</sup> The FCC recognizes this in saying that it must strike a balance between promoting competition through UNEs and promoting investment in facilities.<sup>85</sup> However, in the case of fiber-to-the-home, the balance that must be struck is different. With no pre-existing facilities to leverage, there is nothing to be gained by adopting unbundling rules. Competition will not be promoted if there are no ILEC facilities for CLECs to purchase on an unbundled basis, and the CSMG study shows that ILECs are much less likely to invest in these new networks given the existence of unbundling requirements.<sup>86</sup> Moreover, the CSMG study also notes that that ILECs possess no significant cost or logistical advantages when it comes to building out new fiber-to-the-home or deploying total rehabs.<sup>87</sup> In this instance, removing unbundling requirements will actually better promote the development of competition than will leaving them in place. In a regime where one competitor (the ILEC) is discouraged from rolling out services, many of the competitive forces on the other competitor (the CLEC) are reduced, especially where regulation assures the CLEC

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<sup>83</sup> *Id.* at 3747-50.

<sup>84</sup> “Forced unbundling or resale at regulator-mandated prices may permit competitors to deploy innovative new services... [but] such measures also could lock in the current situation, undercutting the longer-term goal of full facilities-based competition, especially if the rule is that competitors will be granted access at controlled prices to any new facilities that an incumbent puts in place.” *Bringing Home the Bits* at 5-12; *see also CSMG Study* at 14, 30.

<sup>85</sup> *UNE Remand Order* at 3748.

<sup>86</sup> *CSMG Study* at 30.

<sup>87</sup> *CSMG Study* at 14.

that it will have access to the ILEC's networks at forward-looking incremental costs once they are deployed. However, if the ILEC is encouraged to deploy fiber-to-the-home with no unbundling requirements, CLECs have a much stronger motivation to quickly enter the market and gain the first-mover advantage.

The regulatory disparity between cable and telephone providers of broadband services magnifies the adverse impact of unbundling on competition. The Commission recently adopted a declaratory ruling finding that cable modem service is an "information service," and does not have a separate telecommunications service component.<sup>88</sup> As a result, the Commission declined to apply Computer II requirements, and did not mandate that cable modem service providers offer a stand-alone transmission service on a tariffed basis.<sup>89</sup> Cable modems are also not covered by the Section 251 unbundling requirements.<sup>90</sup>

Cable modem service is one of the primary competitors to fiber-to-the-home. Allowing cable providers to offer high-speed data services without unbundling requirements, while imposing unbundling upon fiber-to-the-home, provides the cable platform with an unfair competitive advantage. Given the nascent stage of fiber-to-the home deployment, such a government sanctioned regulatory advantage is neither necessary nor defensible. When compared to fiber-to-the-home, cable providers are not upstarts, requiring government intervention to compete on a level field, but instead are the established incumbents. A regulatory

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<sup>88</sup> *Inquiry Concerning High-Speed Access to the Internet Over Cable and Other Facilities*, Declaratory Ruling and Notice of Proposed Rulemaking, GN Docket No. 00-185, FCC 02-77, ¶ 41 (rel. March 15, 2002) ("*Cable Modem Ruling*").

<sup>89</sup> *Cable Modem Ruling*, ¶ 42.

<sup>90</sup> 47 U.S.C. § 251.

imbalance favoring cable-deployed broadband services would have an adverse effect on fiber-to-the-home investment, by making it more difficult to recoup the large capital expenditures necessary to deploy this service. As the NRC recognized,

[t]o the extent that neutrality is not achieved, regulatory actions would favor or disfavor options in ways unfavorable to consumers. Decreased choice would reduce the likelihood that facilities-based competition emerges or would deprive consumers of particular cost and performance options.<sup>91</sup>

Removing these requirements will also serve the other objectives articulated by the FCC. The Commission has determined that a “goal of the Act is to deregulate where market conditions warrant.”<sup>92</sup> Freeing fiber-to-the-home from unbundling rules will reduce regulation and let the market more efficiently drive the deployment of advanced telecommunications capability. Real-world economic evidence already shows that the alternatives to the incumbent LECs’ network have become available when it comes to fiber-to-the-home; indeed, these alternatives are being deployed more aggressively than are the corresponding elements in the RBOCs’ networks.<sup>93</sup>

Finally, removing these regulations would be administratively practical. Lifting the unnecessary unbundling strictures on fiber-to-the-home would decrease the need for regulatory oversight of an already competitive market. Moreover, the fundamental difference in network technology between fiber-to-the-home and legacy systems creates an easy-to-administer category for unbundling. Removing the unbundling rules would thus not lead to protracted arguments within the industry about what constitutes “fiber-to-the-home.” It is simply an entirely fiber

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<sup>91</sup> *Bringing Home the Bits* at 5-8.

<sup>92</sup> *UNE Remand Order* at 3749.

<sup>93</sup> *CSMG Study* at 51.

optic cable transmission facility, between a distribution frame (or its equivalent) in an incumbent local exchange carrier central office and the loop demarcation point at an end-user customer premise.

### **C. The Commission Has Exclusive Jurisdiction Over Unbundling Rules**

In addition to finding that fiber-to-the-home services do not meet the statutory standard for mandatory unbundling, the Commission should also explicitly state that its jurisdiction over these rules is exclusive, and that states are preempted from imposing unbundling obligations on fiber-to-the-home networks.

Section 251 clearly gives the Commission the sole role in determining which network elements should be unbundled.<sup>94</sup> Unlike other sections of the Act, where states are given a role to play in implementing the Act, Section 251(d)(2) says only that “the Commission shall” undertake the statutory analysis, and does not mention the states at all.<sup>95</sup> Moreover, Section 251(d)(3) prohibits the states from enacting regulations unless those regulations would be “consistent” with Section 251.<sup>96</sup> If the Commission determines, pursuant to its statutory mandate, that fiber-to-the-home does not meet the necessary or impair standards under Section 251, it would not be “consistent” with Section 251 for a state agency to impose unbundled access on fiber-to-the-home. This would not be a situation where the Commission had not considered or acted on a specific network element. Instead, the Commission would affirmatively find that fiber-to-the-home does not meet the “necessary” or “impair” standards. In these circumstances,

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<sup>94</sup> 47 USC § 251(d)(2).

<sup>95</sup> *Id.*

<sup>96</sup> 47 USC § 251(d)(3).

an imposition of mandatory unbundling on fiber-to-the-home by a state would be at cross-purposes with the clear language of Section 251 and the Commission's order, and would promote regulatory uncertainty and work to defeat the goal of promoting increased deployment of fiber-to-the-home.

#### **V. Fiber-To-The-Home-Based Services Meet The Criteria For Section 10 Forbearance Of The Discounted Resale Rules.**

Section 251(c)(4) of the Act imposes on ILECs the duty "to offer for resale at wholesale rates any telecommunications service that the carrier provides at retail to subscribers who are not telecommunications carriers" and also prohibits unreasonable or discriminatory conditions on such resale.<sup>97</sup> The Act, however, charged the FCC with monitoring the continuing need for regulation and forbearing from enforcing any regulations or statutory obligations that are no longer required. Under Section 10 of the 1996 Act, the Commission "shall forbear from applying any regulation or any provision of this chapter to...a class of ...telecommunications services" where the Commission determines that enforcement is not necessary to ensure reasonable charges, practices, or classifications; enforcement is not necessary to protect consumers; and forbearance is consistent with the public interest.<sup>98</sup> Section 10 imposes an additional limitation on forbearance from Section 251(c) obligations, requiring that the Commission determine that these requirements are "fully implemented" before forbearing from enforcing them.<sup>99</sup> Lifting the discounted resale rules on fiber-to-the-home meets each of these requirements.

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<sup>97</sup> 47 USC § 251(c)(4).

<sup>98</sup> 47 USC § 160(a).

<sup>99</sup> 47 USC § 160(d).

Fiber-to-the-home exists in a fully competitive marketplace, in which no carrier or provider has a dominant position.<sup>100</sup> Further, fiber-to-the-home-based services remain covered by the retail resale provisions of Section 251(b)(1). As a result, resale of these services at wholesale prices is not necessary to ensure reasonable charges or classifications or to protect consumers. The marketplace can regulate charges, classifications, and practices, as well as ensure consumer protection. The existing alternatives for high-speed access, such as cable, DSL and satellite, will also provide competitive pressure on fiber-to-the-home service. While fiber-to-the-home offers possibilities for expansion far beyond these current “broadband” technologies, the established nature of these alternative high-speed options cannot be disregarded. Pricing and practices for fiber-to-the-home will have to take into account the presence of these (and other) market alternatives.

Similarly, forbearing from enforcement of the wholesale resale rules is consistent with the public interest. Reducing regulation will spur deployment of this groundbreaking technology<sup>101</sup> and make available a tremendous variety of new services to the consumer. Because there are no compelling reasons to continue enforcing discounted resale of fiber-to-the-home-based services, the public interest cannot justify the regulatory drag that regulation puts on the deployment of these services.<sup>102</sup>

Finally, the competitive nature of the fiber-to-the-home market is also evidence that the provisions of Section 251(c)(4) have been “fully implemented” with respect to services based on

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<sup>100</sup> *CSMG Study* at 51.

<sup>101</sup> *See CSMG Study* at 26.

<sup>102</sup> If the Commission decides that resale forbearance is beyond the scope of this proceeding, Corning urges the agency to institute an appropriate proceeding to lift these requirements.

this technology. CLECs are able to self-provision fiber-to-the-home networks that are identical in cost, performance and availability to the new networks that ILECs are capable of building out. The fact that no further Commission regulation is necessary to meet the goals of Section 251(c)(4) demonstrates that these requirements have been “fully implemented.”

## **VI. Conclusion**

For the reasons set forth above, the Commission should eliminate unbundling requirements on fiber-to-the-home. Further, the Commission should forbear from enforcing the wholesale discount obligations under Section 251(c)(4) to services offered over this technology.

Respectfully submitted,

**CORNING, INC.**

\_\_\_\_\_/s/ Gregory J. Vogt\_\_\_\_\_

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