

BEFORE THE
Federal Communications Commission

WASHINGTON, D.C.

In the Matter of)
)
Petitions for Rulemaking and Clarification)
Regarding the Commission's Rules Applicable) RM-11358
to Retirement of Copper Loops and Copper)
Subloops)

**REPLY COMMENTS OF TIME WARNER TELECOM INC. AND ONE
COMMUNICATIONS CORP.**

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Time Warner Telecom Inc. (“TWTC”), and One Communications Corp., (“One Communications”) by their attorneys, hereby submit these reply comments in support to the petitions filed by BridgeCom *et al.* and XO *et al.* in the above referenced docket.¹

I. INTRODUCTION AND SUMMARY

In their petitions, the two coalitions of CLECs seek clarification and the initiation of a rulemaking proceeding for the purpose of limiting ILECs’ ability to exploit opportunities to retire copper loops, often the sole alternative to ILEC fiber loops, in a manner that is harmful to competition and consumer welfare. Contrary to the hyperbolic claims of the petitioners’

¹ See *Pleading Cycle Established for Comments on Petitions for Rulemaking and Clarification Regarding the Commission’s Rules Applicable to Retirement of Copper Loops and Copper Subloops*, Public Notice, 22 FCC Rcd 1056 (2007).

opponents, the petitions do not seek a radical change to the Commission’s framework for promoting the deployment of next-generation broadband loop facilities. Rather, in light of current market conditions, they seek to make modest changes to those rules to ensure that ILECs will not be able to unilaterally retire copper loops that are increasingly viable means of providing consumers with advanced services.

As a threshold matter, there is no question that competitors are impaired without access to copper loops needed to provide broadband services. The Commission held that this is the case in the *TRO* for mass market customers.² Moreover, as the Commission held in the *TRRO*, competitors are impaired without access to loops, including copper loops, when seeking to provide services that yield revenue opportunities equal to or less than those offered by a single DS3. There is no reason to doubt that these conclusions remain valid today.

Moreover, there are obvious reasons for the Commission to revisit its decision in the *TRO* not to require that ILECs obtain Commission approval before retiring spare copper loop facilities. The Commission’s policy of limiting unbundled access to ILEC fiber loop facilities (including fiber-to-the-home or “FTTH,” fiber-to-the-curb or “FTTC,” and hybrid fiber-copper loops) and the associated loop retirement policies carry few real benefits. The ILECs and Corning strenuously insist that retiring copper loops diminishes network costs and increases the ILECs’ incentives to deploy fiber loop facilities. But the ILECs themselves admit that they have

² See generally *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; Report and Order on Remand and Further Notice of Proposed Rulemaking*, 18 FCC Rcd 16978 (2003) (“*TRO*”).

felt no need to retire copper loops in most locations where they have deployed fiber and hybrid loops. In fact, ILECs deploy fiber almost exclusively because of the efficiencies and revenue opportunities associated with those facilities. Moreover, while the FCC has in the past predicted that eliminating access to ILEC fiber loops would cause CLECs to deploy fiber loops, that has not proved to be the case. As a result, in the vast majority of locations, competitors are forced to serve customers over ILEC loops. Thus, the benefits of eliminating access to the remaining available unbundled ILEC loop -- legacy copper loops -- are minimal indeed.

At the same time, the costs of allowing ILECs to retire copper loops and leaving competitors with no unbundled loop alternatives are far steeper than the Commission has acknowledged or than the ILECs and Corning allege in this proceeding. For example, in the *TRO*, the Commission relied on the presence of competition from cable operators and the availability of unbundled copper subloops as well as the TDM functionalities of hybrid loops (i.e., DS1 and DS3 loops) as diminishing the costs of foregone competition caused by limiting unbundled access to ILEC loops. But cable operators are either unable or unwilling to serve most businesses and competitors are increasingly unable to rely on DS1 and DS3 loops as inputs for providing services such as packetized Ethernet service. Moreover, technological advances since the *TRO* have made copper loops an increasingly viable means of offering new broadband services. It follows that the costs of allowing ILECs to remove spare copper loops from service are extremely high.

In light of the minimal benefits and substantial costs associated with allowing ILECs to retire copper loops, the Commission should initiate a proceeding for the purpose of establishing a prior regulatory approval process for loop retirement. It is important to emphasize that such a

process would not preclude an ILEC from retiring copper loops, and it would not result in a wholesale reversal of the FCC's framework for deregulating ILEC fiber loops (as opponents of the Petitions contend). It would simply ensure more careful regulatory oversight of the copper retirement process. Given that the largest benefit to ILECs of the current rules is their right to foreclose broadband competition from intramodal competitors, it is clear that more effective protections against such conduct are warranted.

II. THE COMMISSION SHOULD GRANT PETITIONERS' REQUEST FOR CLARIFICATION AND THE INITIATION OF A RULEMAKING FOR THE PURPOSE OF PRESERVING ACCESS TO UNBUNDLED COPPER LOOPS

In light of existing market conditions, it is clear that the Commission must establish rules to prevent ILECs from exploiting the copper loop retirement process to harm competition and consumer welfare. There has *never* been a basis for limiting access to unbundled loops needed to provide to enterprise customers broadband services that offer revenue opportunities similar to or less than those offered by a single DS-3. Moreover, current market conditions and changes in technology now make the costs of allowing ILECs to retire copper loops needed to serve mass market customers far greater than any purported benefits of such a policy.

A. Competitors Are Impaired Without Access To Copper Loops Needed To Provide Broadband Services.

In response to the petitions, many of the ILEC commenters argue that little harm will come from the retirement of copper loops because no "impairment exists with respect to broadband." *See* Comments of Verizon, RM-11358, at 25 (Mar. 1, 2007) ("*Verizon Comments*"). *See also* Comments of USTA, RM-11358, at 11 (Mar. 1, 2007) ("*USTA Comments*"). This is simply not the case.

The FCC has consistently found that carriers seeking to serve the enterprise market are impaired without access to any loops, including copper pairs, that yield revenues equal to or less than those offered by a single DS3 loop. As the FCC found in the *TRO*, “the cost to deploy local loops at any capacity is great” and the cost of deploying loops “does not vary based on capacity.” *TRO* ¶ 303. Accordingly, competitors can only self-deploy loops in “locations where there is sufficient demand from a potential customer base....to generate a revenue stream that could recover the sunk construction costs of the underlying loop transmission facility.” *Id.* Because loops, including copper loops, providing less than a single DS3 of capacity do not provide sufficient revenue to make up for the costs of loop construction, carriers are impaired without access to such loops.³ Moreover, since the release of the *TRO*, market analysis conducted by the FCC, DOJ and GAO all confirm that there is virtually no competition in the provision of loop facilities needed to provide services delivering revenue opportunities offered by a single DS3 or below.⁴

³ See *TRO* ¶ 248 (competitors are impaired without conditioned copper loops); *id.* ¶ 325 (competitors are impaired without DS1 loops). In the *TRO*, the FCC found that competitors are impaired without access to two DS3 loops per location. See *id.* ¶ 324. The FCC later limited its impairment finding to a single DS3 loop in the *TRRO*. See *Unbundled Access to Network Elements; Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers*, Order on Remand, 20 FCC Rcd 2533, ¶ 177 (2005) (“*TRRO*”).

⁴ See *TRRO* ¶¶ 151, 154. See also GAO, *FCC Needs to Improve Its Ability to Monitor and Determine the Extent of Competition in Dedicated Access Services*, GAO-07-80 (Washington, D.C., Nov. 2006); *United States v. Verizon Communications, Inc. and MCI Inc.*, Case No. 1:05CV02103, Complaint ¶ 15 (D.D.C. filed Oct. 27, 2005); *United States v. SBC Communications, Inc. and AT&T Corp.*, Case No. 1:05CV02102, Complaint ¶ 15 (D.D.C. filed Oct. 27, 2005).

It is important to emphasize that the impairment in the enterprise market also extends to packetized services that yield revenue opportunities equal to or below those offered by a single TDM-based DS3. Indeed, enterprise business customers are increasingly demanding new packetized services such as Ethernet, which are delivered over the same copper and fiber loops used to provide TDM-based services. Yet, the economic analysis of loop deployment does not change with the introduction of new and innovative technologies. The same trench must be dug, the same fiber or copper must be laid, and similarly priced electronics must be attached to deliver Ethernet and other packetized services. To the extent that the revenue generated by an Ethernet loop does not justify the cost of construction, CLEC deployment is of course not possible.

For example, the revenue opportunity to a competitor represented by a customer demanding a single DS3 of capacity (approximately 45 Mbps) or a 50 Mbps Ethernet circuit is roughly the same. Because it is almost never economic for competitors (including TWTC and One Communications) to construct a loop to a customer demanding a single DS3, it is almost never economic for competitors to construct a loop to a customer demanding a 50 Mbps Ethernet circuit. Competitors therefore remain heavily reliant on ILEC facilities to provide both legacy TDM service and new and innovative packetized services such as Ethernet.

With respect to the mass market, the Commission held in the *TRO* that competitors are impaired without access to copper loops “whether they seek to provide narrowband, or broadband services, or both.” *TRO* ¶ 248. The FCC acknowledged that conditioned copper was the only viable input for providing xDSL to very small businesses and home offices (*see id.* ¶ 225) (both of which the Commission has classified as mass market customers). *See id.* ¶ 127. Without access to such facilities, mass market customers would be left without broadband

options other than the ILEC or, where available and suitable, broadband provided by cable companies.

B. The Purported Benefits Associated With Allowing ILECs To Retire Spare Copper Loops Are Clearly Outweighed By The Significant Costs In Terms Of Foregone Competition.

As the FCC reiterated just last month, the agency has an obligation to reassess its prior conclusions when they are shown to have been incorrect.⁵ It must do so here with respect to its copper loop retirement rules, especially for those loops serving enterprise customers.

Although the Commission addressed the circumstances in which ILECs should be allowed to retire copper loops in the *TRO*, it did not in fact analyze the issue in any detail, and it did not attempt to determine whether the purported benefits of allowing ILECs to retire copper loops outweighed the costs. Instead, the Commission merely held that it was not necessary “at this time” to require that ILECs obtain affirmative regulatory approval prior to retiring copper loops. *TRO* ¶ 281. Recognizing the risk that ILECs would abuse the right to retire copper loops

⁵ See *Petition of Qwest Communications International Inc. for Forbearance from Enforcement of the Commission’s Dominant Carrier Rules As They Apply After Section 272 Sunsets*, Memorandum Opinion and Order, FCC 07-13, ¶ 55 (rel. Mar. 9, 2007) (“To the extent our predictive judgment regarding the state of competition proves incorrect, aggrieved parties may file appropriate petitions with the Commission and the Commission has the option of revisiting this forbearance ruling.”); *Petition of ACS Anchorage, Inc. Pursuant to Section 10 of the Communications Act of 1934, as amended, for Forbearance from Section 251(c)(3) and 252(d)(1) in the Anchorage Study Area*, Memorandum Opinion and Order, 22 FCC Rcd 1958, n.159 (2007) (“To the extent our predictive judgment proves incorrect, carriers can file appropriate petitions with the Commission and the Commission has the option of reconsidering this forbearance ruling.”). See also *Geller v. FCC*, 610 F.2d 973 (D.C. Cir. 1979) (holding that the FCC must ensure that its rules continue to have a nexus with the public interest in light of changed circumstances).

for anticompetitive purposes, the Commission bolstered its existing network modification rules applicable to copper loop retirement to allow competitors to object to an ILEC's notice of loop retirement. *See id.* ¶ 282. The Commission determined that such notice and opportunity to object “serve[d] as adequate safeguards” against ILEC abuse of the copper loop retirement process. *See id.* ¶ 281.

The Commission did *not* rely to any significant degree on ILECs' right to retire loops and any possible resulting cost savings as a benefit of its deregulatory framework for newly deployed fiber loop facilities. In fact, the Commission affirmatively relied on the continued availability of copper loops as preserving competition *in the provision of broadband* after ILEC deployment of fiber loop facilities. *See id.* n.746 (clarifying that loop conditioning requirements apply to spare copper that remains in place after the ILEC has deployed fiber loop facilities). Moreover, as the Commission recognized, the High Tech Broadband Coalition, the most vocal proponent of an unbundling exemption for fiber loop facilities, advised the Commission not to allow ILECs to retire copper loops without obtaining affirmative prior approval from the agency. *See id.* n.827 (citing High Tech Broadband Coalition Jan. 23, 2003 *ex parte* letter). The Commission did not provide a reasoned explanation for rejecting this proposal.

1. The Benefits Associated With Allowing ILECs To Retire Copper Loops Are Far Less Significant Than The FCC Assumed To Be The Case In The *TRO* Or Than The ILECs And Corning Claim In This Proceeding

The purported benefits of allowing ILECs the freedom to retire copper loops without prior Commission approval are extremely limited. *First*, in a *post hoc* justification for the Commission's largely unexplained decision in the *TRO* not to require prior regulatory approval for copper loop retirements, the opponents now claim that the ability to retire copper loops offers

very significant cost savings that increase ILEC incentives to deploy fiber loop facilities. See *USTA Comments* at 17; Comments of Corning Inc. RM-11358, at 4 (Mar. 1, 2007) (“*Corning Comments*”). But the ILECs admit that *they have not retired copper loops in most of the locations in which they have deployed fiber loops*. See Verizon Comments at 23; Opposition of AT&T, RM-11358, at 11-12 (“*AT&T Comments*”) (Mar. 1, 2007). This is apparently because retaining existing copper loops is not as costly as ILECs would have the Commission believe. Moreover, it is significant that ILECs making spare copper available to competitors need not “incur relief and rehabilitation costs for [a] loop unless a competitive LEC requests unbundled access to it and such loop is placed back into service.” *TRO* ¶ 277. The resulting elimination of ongoing maintenance costs diminishes substantially the costs of retaining copper loops and therefore diminishes substantially the purported benefits of allowing ILECs to retire spare copper loops.

Furthermore, the ILECs and Corning confidently tout the superiority of fiber-based networks over copper-based networks. See, e.g., *Corning Comments* at 6; Verizon Comments at 15-15. Assuming that these claims are accurate, there is every reason to believe the ILECs (and competitors) will deploy fiber loop facilities wherever it is efficient to do so. Competitors would only rely on copper loops if they have no other alternatives. But it would be absurdly bad public policy to prevent competitors from attempting to rely on copper loops to provide broadband when there are so few competitors in this market and when the elimination of copper loops would likely eliminate the only effectively regulated wholesale loop offering.

In any event, in the enterprise market, the Commission has itself concluded that limiting unbundled access ILEC fiber loop facilities does not promote ILEC deployment of such

facilities. Only a year after the release of the *TRO*, in denying unbundling relief for fiber loops serving non-residential multi-dwelling units, the Commission concluded that the goals of Section 706 are *not implicated* by eliminating unbundling to the enterprise market. This is because “enterprise customers already typically are served by high-capacity loops.”⁶ As the Commission explained, a rule eliminating unbundling for both mass and enterprise market MDUs would “eliminate unbundling for enterprise customers where the record shows that additional investment incentives are not needed.” *MDU Reconsideration Order* ¶ 8. Limiting access to fiber loops and allowing ILECs to retire copper loops needed to serve enterprise customers therefore offers no “benefit” in terms of advancing the goals of Section 706 generally and in spurring ILECs to deploy fiber loop facilities in particular.

Moreover, in the mass market, ILECs have been driven to deploy fiber loop facilities to respond to competition from cable operators, not because of the right to retire copper loops (which of course they have not even done to any significant degree). Numerous analysts agree that ILECs have begun upgrading their networks because they were forced to counter the cable companies’ introduction of voice services. Without a similar “triple-play” offering, ILECs would have seen their core business in the mass market erode. ILECs are not going to risk the loss of millions of customers to cable competition simply because of the existence of unbundling rules. As one analyst stated, “IPTV is the [Regional Bell Operating Companies’] response to cable TV operators that have been eating their lunch with the triple play concept...The RBOCs

⁶ *Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers et al.*, Order on Reconsideration, 19 FCC Rcd 15856, n.26 (2004) (“*MDU Reconsideration Order*”).

are in a bit of a pickle because the competition is invading their turf. Unless they can get IPTV working they don't have a competitive response.”⁷ Indeed an AT&T spokeswoman has reportedly cited “increased competition [from cable] as a reason for investing in new infrastructure.”⁸

Second, although the Commission relied on its prediction that limiting access to unbundled ILEC fiber loop facilities would yield the benefit of increased deployment of such facilities by competitors, this has not been the case. The laws of economics have not changed with the passage of time. Accordingly, in the enterprise market, loop construction is still as slow and as capital intensive as ever. Despite the fact that TWTC is able to add hundreds of loops every year (and has been doing so since well before the *TRO*) to those customers where the revenue opportunity justifies construction, this pales in comparison to the tens of thousands of enterprise customer locations already served by ILEC high capacity facilities. TWTC has not deployed fiber loops more aggressively as a result of the elimination of unbundled access to ILEC fiber loops in the *TRO*. One Communications is never able to justify loop deployment because its customers are served by less than two DS3s of capacity.

Similarly, in the mass market, competitors simply have not deployed fiber loop facilities to any significant degree since the release of the *TRO*. At the time of the *TRO*, Corning asserted that 33,805 homes were passed by FTTH loops. Of these, 25,998 were passed by CLEC

⁷ Jennifer LeClair, *Heading for an IPTV Revolution*, TECHNEWSWORLD, Sept. 5, 2005, at <http://www.technewsworld.com/story/45947.html> (quoting Len Rand, managing director at Granite Ventures, a venture capital firm).

⁸ *See More Deep Fiber: Commitment or Overkill*, REDORBIT, Apr. 12, 2005, at http://www.redorbit.com/news/technology/143041/more_deep_fiber_commitment_or_overkill/index.html

networks (77 percent) and only 1,050 (3.1 percent) were passed by ILECs networks, with the remainder passed by municipal networks.⁹ In its comments, Corning asserts that the comparative shares were even more lopsided, with “189,000 homes in the United States...passed directly by optical fiber, and the RBOCs accounted for only 400 of those.” *Corning Comments* at 3. Since then, exploiting their scale and scope advantages, the ILECs have expanded their FTTH deployments much more quickly than CLECs would ever be able to do. Indeed, Corning now asserts that, of the 6 million homes passed by FTTH facilities, 5 million (83 percent) are passed by *Verizon alone*. *Id.* The overall share of FTTH loops deployed by CLECs has therefore dropped precipitously since the release of the *TRO*. Indeed, based on this data, it appears that CLECs have deployed precious few FTTH loops since the release of the *TRO*. There is therefore no basis for concluding that limiting unbundled access to ILEC fiber loops, let alone copper loops, needed to serve the mass market yields the benefit of increased fiber loop deployment by competitors.

2. The Costs Associated With Allowing ILECs To Retire Copper Loops Are Far Greater Than The FCC Assumed To Be The Case In The *TRO* Or Than The ILECs And Corning Claim In This Proceeding.

The costs in terms of foregone competition caused by eliminating access to ILEC fiber loop facilities are far greater than the Commission assumed to be the case in the *TRO*. Similarly, although the Commission neglected to analyze the costs associated with loop retirement in the *TRO*, changes in technology have significantly increased the costs of copper loop retirement.

⁹ See Cambridge Strategic Management Group, *Assessing the Impact of Regulation on Deployment of Fiber to the Home*, at 51 (Apr. 5, 2002) (attached to Comments of Corning, CC Dkt. Nos. 01-338 *et al.* (filed Apr. 5, 2005)).

The costs associated with eliminating unbundled loop access are especially steep in the enterprise market. In the *TRO*, the Commission relied on a number of factors that it found diminished the costs of limiting access to unbundled ILEC loops in the *mass market* as the basis for eliminating access to loops needed to serve the *enterprise market*. Not surprisingly, reliance on a mass market analysis caused the Commission to understate the true costs of limiting access to fiber loop facilities in the enterprise market (had the Commission conducted the same analysis for copper loop retirement, it would have similarly caused the Commission to understate the costs associated with copper loop retirement).

Most obviously, in the *TRO*, the Commission relied on the presence of competition from cable operators as a means of constraining ILEC market power. But again, the Commission did so in the context of its mass market analysis.¹⁰ The FCC neglected to recognize (although it did recognize this elsewhere in the *TRO* and later in the *TRRO*) that cable operators' presence in the business market was, and continues to be, limited. *See, e.g., TRO* ¶ 52; *TRRO* ¶ 193. Cable companies are simply unable or unwilling to provide the type of services demanded by enterprise customers in the vast majority of geographic areas. This continues to be case today. Moreover, no other category of intermodal competitor constrains ILEC market power in the provision of broadband services to enterprise customers. In their comments, the ILECs point to intermodal competition from “WiMax, Wi-Fi, [and] BPL providers” as constraining their market power.

¹⁰ *See TRO* ¶ 292 (“We are also informed in our analysis [of hybrid loop unbundling] by the state of intermodal competition for broadband service. As noted above, cable companies have made significant inroads in providing broadband service to the *mass market*...”) (emphasis added).

Verizon Comments at 23. Yet, these services are nascent where they exist at all, and, in most cases, are incapable of serving the enterprise market.

In addition, the Commission relied on competitors' access to unbundled copper subloops in hybrid fiber-copper loop facilities and access to the TDM-functions of hybrid loops as diminishing the harmful consequences in all markets of the exemption from unbundling ILEC fiber loop facilities.¹¹ But there is simply no evidence that competitors have been able to rely on copper subloops along with competitors' own fiber feeder facilities to serve either mass market or enterprise market customers on any significant scale. It is no surprise then that Covad, the county's largest competitive DSL provider, has implied that it is uneconomical to deploy fiber feeder facilities and therefore it is difficult, if not impossible to offer DSL service in those areas where ILECs have deployed hybrid loops.¹²

¹¹ See *id.* ¶ 291 (“In making our unbundling determination, we are also guided by the availability of other loop alternatives within the networks of incumbent LECs. In particular, we determine that unbundled access to incumbent LEC copper subloops adequately addresses the impairment competitive LECs face....[S]ubloop access promotes competitive LEC investment in next-generation network equipment....and transmission facilities.”).

¹² See Covad Communications Group, Inc. SEC Form 10-K Annual Report for the Fiscal Year Ended Dec. 31, 2006, at 11 (filed Feb. 28, 2007) (“In the Original Triennial Review Order, and subsequent orders, the FCC also decided that ILECs are not required to allow us to access certain types of fiber and fiber-fed lines or the packet-switching functions of fiber-fed telephone lines to provision DSL services....*This means that, unless we reach agreements with the RBOCs or obtain favorable regulatory rulings from the FCC or state regulators, we will continue to be unable to provide our most commonly used services to end-users served by affected fiber-fed lines. Our inability to access fiber and fiber-fed packet-switching functions is significant for our business because it limits the addressable market for our DSL services, thereby limiting our growth. In addition, the RBOCs are increasing their deployment of fiber lines and fiber-fed remote terminal architectures, thereby limiting our addressable market.*”) (emphasis added).

It is also increasingly difficult for competitors to rely on the TDM functionalities of hybrid loops (i.e., DS1 and DS3 circuits) to provide advanced services to enterprise customers. Retail enterprise customers are increasingly demanding packetized services, and it has become more and more difficult for carriers to rely on TDM-based circuits to provide packetized services such as Ethernet. As TWTC has explained at length elsewhere, the need to purchase two sets of electronics (TDM and Ethernet) and the substantial inefficiencies of converting signals from TDM to Ethernet precludes the use of TDM facilities leased from the ILEC (either special access or UNE) for Ethernet service in many instances.¹³ For example, to provide a 50 Mbps Ethernet circuit, TWTC would have to purchase two DS3 circuits (45 Mbps each) from the ILEC and additional electronics necessary to translate the signal from TDM to Ethernet and back again. Such forced “overbuying” often makes Ethernet-over-TDM an uneconomical solution. The continued availability of conditioned copper UNEs surmounts many of these problems. A competitor could purchase a conditioned copper UNE, attach its own packetizing electronics, and provide the exact capacity desired by the customer. If copper is retired, this would obviously be impossible.

Moreover, innovations since the *TRO* have made copper networks much more valuable than was the case in 2003. As compression and transmission standards continue to evolve, the bandwidth that can be delivered via copper loops will only increase, making the ubiquitous copper network ever more useful. Accordingly, the harm that will result from the retirement of these facilities will only increase as time goes on.

¹³ See Reply Declaration of Graham Taylor on Behalf of Time Warner Telecom, Inc., WC Dkt. No 06-74, ¶¶ 17-25 (Aug. 8, 2006).

This is clearly the case in the enterprise market. Carriers are now beginning to use copper loops to provide Ethernet services of up to approximately 50 Mbps (“Mid-band Ethernet”) using long loops of up to 12,000 feet,¹⁴ a service that was not contemplated at the time of the *TRO*. With such a service “[a] customer without fiber to the premises can now get the economics and benefits of higher bandwidth....”¹⁵ As explained above, because a 50 Mbps Ethernet-over copper service only provides as much revenue as a single DS3, CLECs simply cannot deploy copper or fiber facilities to provide such services. It therefore remains crucial that CLECs continue to have the ability to lease copper facilities to provide such services. Such access affirmatively promotes the policy goals of Section 706 since it ensures that more alternatives are available for broadband customers.

Technological innovations in the mass market are also altering the balance struck in the *TRO*. Advances in transmission and compression technology are permitting the delivery of video and very high-speed broadband over copper facilities much longer than the 500 feet the Commission once thought was necessary to provide a full suite of advanced service to mass market customers. Like Ethernet-over-copper, these technologies were simply not on the FCC’s radar screen when it adopted the *TRO* and the copper retirement rules. The once unforeseen capabilities of copper are underscored by the fact that only one large ILEC, Verizon, has concluded that it is necessary to construct an FTTH network. Nearly every other carrier that is

¹⁴ See Craig Matsumoto, *Copper Ethernet Makes Strides*, LIGHT READING, in UNSTRUNG.COM, June 6, 2006, at http://www.unstrung.com/document.asp?doc_id=96236.

¹⁵ Mark Sullivan, *RBOCs Moving on Mid-Band Ethernet?*, LIGHT READING, June 14, 2005, at http://www.lightreading.com/document.asp?doc_id=75741 (quoting Chris Cook, Vice President of Marketing, Hatteras Networks, Inc.).

offering a triple play of voice, video and data is using networks with copper loops of a mile or more.

AT&T's copper-centric U-verse network provides clear evidence that copper-based technology has evolved by leaps and bounds in the 4 years since the *TRO*. For its U-verse product, AT&T is using VDSL2 to provide multiple HDTV streams at speeds of 20-25 Mbps.¹⁶ Such speeds can apparently be achieved with copper lengths of up to a mile.¹⁷ Unlike the “substantial investment” that is required for both FTTC and FTTH loops, AT&T's U-verse copper-based network is estimated to cost only 25 percent of Verizon's FTTH deployment, yet provide comparable services.¹⁸ Many other smaller ILECs are building similar copper-based IPTV networks.¹⁹ Because the costs to construct networks capable of providing advanced services are so much lower than the FCC anticipated in the *TRO*, AT&T and other carriers deploying similar copper-based advanced services architecture do not need the incentives that the FCC believed would result from reduced unbundling obligations.

¹⁶ See Brian Santo, *Time is money, marketshare for U-verse*, CED MAGAZINE, Mar. 1, 2007, at <http://www.cedmagazine.com/article/CA6420233.html>.

¹⁷ See Bill Koss, *AT&T's IPTV Architecture*, SEEKING ALPHA (blog), Mar. 26, 2007, at <http://telecom.seekingalpha.com/article/30657>.

¹⁸ See Matt Richtel, *AT&T Has Done The Deals. Now It Needs Results*, N.Y. TIMES, Mar. 27, 2007, available at http://www.nytimes.com/2007/03/27/business/27telecom.html?pagewanted=2&_r=1&ref=business.

¹⁹ See *Annual Assessment of the Status of Video Competition in the Market for the Delivery Video Programming*, Twelfth Annual Report, 21 FCC Rcd 2503, ¶¶ 125, 204 (2006).

Similarly, Cavalier is using ADSL2+ to provide TV service with speeds of up to 15 Mbps.²⁰ Even higher bit-rates are available with bonded copper pairs. According to Brad Evans, CEO of Cavalier, Cavalier can provide video service using ADSL2+ at copper distances of up to *12,000 feet*. *See id.* Both AT&T and Cavalier are using new MPEG-4 compression technology. By contrast, Verizon, which has committed itself to FTTH deployments, is using the older, less efficient MPEG-2 standard, long used by cable companies. MPEG-4 can provide a high-definition signal using only 8 Mbps while MPEG-2 requires 16 Mbps.²¹

Finally, it is worth emphasizing that the elimination of copper loops imposes costs in terms of foregone ILEC investment that would occur if ILECs were to respond to copper-based intermodal competition. This is again clear in the enterprise market in which (as discussed more fully below) CLECs are already beginning to offer Ethernet-over copper while ILECs are dragging their feet and continuing to rely on older, more expensive technologies. It is therefore doubly important that CLECs continue to have access to ILEC copper facilities to push forward this promising new technology. As the ILECs did when they failed to introduce DSL for many years after the technology had been developed, some analysts believe that ILECs do not want to offer new and innovative products like Ethernet-over-copper that would cannibalize their higher

²⁰ *See Gambling Big on IPTV*, SCREEN PLAYS, at <http://www.screenplaysmag.com/Edit/EditNews/tabid/60/articleType/ArticleView/articleId/110/GamblingBigonIPTV.aspx> (last visited Apr. 2, 2007).

²¹ *See Deborah D. McAdams, Small Telcos Take on IPTV*, TVTECHNOLOGY.COM, Dec. 6, 2006, at <http://www.tvtechnology.com/pages/s.0082/t.544.html>.

priced, legacy services.²² ILECs have only begun to jump into the Ethernet-over-copper market now because CLECs are providing competitive pressure using leased copper facilities.²³ It is estimated that AT&T will provide Ethernet over copper at the earliest in the second quarter of 2008.²⁴ Another key application for Ethernet over copper is cellular backhaul,²⁵ a service for which ILECs have a tight monopoly and have been extracting above market prices.²⁶ In light of this analysis, the policy goals of Section 706 strongly favor re-appraisal of the cost-benefit analysis that led the FCC to allow ILECs to retire copper loops serving business customers essentially without constraint.

3. Given The Limited Benefits And Steep Costs Of Allowing ILECs To Retire Copper Loops, The Commission Should Not Allow ILECs To “Warehouse” The Scarce Capacity Delivered By These Facilities.

As the foregoing analysis demonstrates, the benefits of allowing ILECs to retire copper loops are speculative and limited while the costs are significant and growing. This is clearly true in the enterprise market, but it is also the case in the mass market. Spare copper loops in fact represent one of the few connections to end users, in some cases they are the only connection

²² See Craig Matsumoto, *Copper Ethernet Snares an RBOC*, LIGHT READING, Aug. 7, 2006, at http://www.lightreading.com/document.asp?doc_id=100606.

²³ See Mark Sullivan, *supra* note 15.

²⁴ Craig Matsumoto, *AT&T Sets Copper Ethernet Course*, LIGHT READING, Mar. 13, 2007, at http://www.lightreading.com/document.asp?doc_id=119284.

²⁵ See Craig Matsumoto, *supra* note 14.

²⁶ See Letter of Robert S. Foosaner, Senior Vice President - Government Affairs, Sprint Nextel, to FTC, Office of the Secretary, *Broadband Connectivity Competition Policy Workshop*, Project No. V070000, at 4 (Feb. 28, 2007) (attached to *ex parte* letter of Anna M. Gomez, Vice President - Government Affairs, Sprint Nextel, to Marlene H. Dortch, Secretary, FCC, WC Dkt. No. 05-25 & CC Dkt. No. 01-92 (Mar. 21, 2007)).

other than an ILEC fiber connection. There is simply no basis for allowing ILECs to eliminate this capacity from the market, since they will have every incentive to do so in the future to snuff out intramodal competition.

The Commission's spectrum policies offer a helpful guide to the manner in which the Commission should view the retirement of spare copper loops. Just as the FCC has long prevented a single wireless carrier from controlling and warehousing such a large portion of the spectrum that competition is harmed, so the ILECs must not be able to withhold from the market the capacity of existing copper loop facilities that are now clearly able to provide advanced services to the business and mass markets. For example, the FCC recently concluded that there was 200 MHz available to provide mobile telephony.²⁷ In the merger of Alltel and Midwest Wireless, the FCC found that, in certain markets, the combined company would have 110 MHz of spectrum. As the Commission explained, in four markets "the merged entity will have high market shares and face few competing carriers. In these markets, we are concerned that, post-merger, there would be too few competing carriers to deter anticompetitive behavior by the merged entity." *Alltel Order* ¶ 93. Based on these concerns, the FCC ordered spectrum divestitures in the four markets.

Even in those mergers where wireless divestitures are not ordered, the FCC looks to its construction and build-out deadlines to ensure that spectrum is put to its highest use and not

²⁷ See *Applications of Midwest Wireless Holdings, L.L.C. and ALLTEL Communications, Inc., Memorandum Opinion and Order*, 21 FCC Rcd 11526, ¶ 31 (2006) ("*Alltel Order*").

warehoused.²⁸ The Commission's spectrum leasing rules permit carriers that cannot or do not wish to meet construction deadlines, to lease their spectrum to a third party so that the lessee meets the build-out requirements and ensures that the public receives full benefit of all available spectrum.²⁹ If the lessee fails to meet construction and build-out deadlines, the licensee must return or sell its licensed spectrum to ensure that a valuable resource does not lie fallow.

The same policies should inform the Commission's approach to requiring unbundled access to wireline loops. ILECs have a 95 percent share of loops serving businesses.³⁰ To permit the ILECs to retire their copper facilities would be akin to permitting a single entity, holding the vast majority of spectrum available for mobile wireless services, to warehouse or simply permanently destroy that spectrum. There is simply no basis for allowing this to occur.

C. Other Arguments Raised By ILECs Offer No Basis For Allowing ILECs to Retire Copper Loops.

²⁸ See *AT&T Inc. and BellSouth Corporation Application for Transfer of Control*, Memorandum Opinion and Order, ¶ 182, FCC 06-189 (rel. Mar. 26, 2007). The Commission noted that its substantial service and buildout requirements “prevent stockpiling or warehousing of spectrum by licensees or permittees, and . . . promote investment in and rapid deployment of new technologies and services.” *Amendment of Parts 1, 21, 73, 74 and 101 of the Commission's Rules to Facilitate the Provision of Fixed and Mobile Broadband Access, Educational and Other Advanced Services in the 2150-2162 and 2500-2690 MHz Bands et al.*, Order on Reconsideration and Fifth Memorandum Opinion and Order and Third Memorandum Opinion and Order and Second Report and Order, 21 FCC Rcd 5606, ¶ 278 (2006) (citing 47 USC § 309(j)(4)(B)).

²⁹ See *Promoting Efficient Use of Spectrum Through Elimination of Barriers to the Development of Secondary Markets*, Second Report and Order, Order on Reconsideration and Second Further Notice of Proposed Rulemaking, 17 FCC Rcd 17503, ¶ 144 (2004).

³⁰ See *TRO n.856* (stating that both “competitive LECs and incumbent LECs report that approximately 30,000, i.e., between 3% to 5%, of the nation's commercial office buildings are served by competitor-owned fiber loops.”). Less than two years ago, Verizon alleged CLEC penetration had changed little if any. See Verizon Comments, WC Dkt. No. 05-25, Attach. D, Declaration of Quintin Lew, at App. B (June 13, 2005).

The ILEC commenters raise additional objections to the petitions that are equally without merit. Verizon argues that TELRIC does not adequately compensate ILECs for network elements that would not longer be used by the ILEC. *See* Verizon Comments at 17-18. However, even if true, this is no barrier to the relief requested by the petitioners--appropriate rates can be readily established to account for ILEC concerns. If copper loops are retired, they will of course be unavailable at *any* price.

The opponents argue that homeland security and emergency responders will not be harmed by the replacement of copper loops with fiber. *See, e.g.*, Corning Comments at 9; Verizon Comments at 24. Yet, even if fiber and copper networks were proximate in space, it cannot be that two networks do not add some modicum of redundancy. Most importantly, no ILEC commenter mentioned the clearest advantage of copper networks in emergency or disaster situations--they are line powered. If a customer's power is knocked out by natural or man-made disasters, copper-based services will continue to operate, providing an important lifeline to consumers and first responders. This reason alone counsels for a reevaluation of the FCC's copper loop retirement rules.

AT&T asserts that the copper retirement rules should not be changed because, in a similar way, the FCC has not required that ILECs alter their facilities to ensure that competitors can have access to UNEs. *See* AT&T Comments at 17. Not only is this analogy inapt (if the instant petitions were granted, ILECs would not be forced to alter their facilities, but rather would be prohibited from altering them), but it misstates the FCC's precedent. For example, in providing unbundled access to copper loops, the FCC mandated that LECs (1) condition the copper so that competitors can provide DSL service; (2) provide line splitting; and (3) modify

