loop. As a result, when an individual customer's demand is not sufficient to fill a fiber facility to reasonable utilization levels, an efficient carrier will use copper, because it provides adequate transmission capabilities without the need for the expensive electronics that must be used with fiber facilities. Those conditions hold for the vast majority of customers – indeed approximately 98% of ILEC loop plant today is copper.[99]

These same conditions mean that it would be economically irrational for virtually any new entrant to install new copper facilities to compete with the incumbents' ubiquitous loop plant. First, because loops are dedicated to a single customer, a CLEC can carry only a limited amount of traffic over each copper loop, which places significant constraints on the amount of revenues that the competitor could hope to earn from any customer served by such loops. Second, the construction costs and delays inherent in building any new facility make copper loop construction too costly to consider, especially given its low capacity and revenue potential.

This is confirmed by AT&T's real world experience. Because it is not economically feasible to replicate copper facilities, AT&T self-provisions *no* copper loops to any of its customers for either local or long distance services. Lesher-Frontera Dec. ¶ 43. AT&T thus remains entirely dependent upon ILECs to provide last-mile copper loop facilities.

In sum, where copper loop facilities have already been deployed, this is an indication that only relatively low levels of demand are addressable and only a single supplier can address that

[99] Table 10.2 of the *Universal Service Monitoring Report* shows that there are 217.4 million loop plant copper pairs terminated in the former RBOC and GTE offices while there are only 2.9 million fiber strands. Even assuming that these are all fiber loops (when in fact this figure includes copper loops connected to DLC), a conservative estimate of the proportion of fiber loops is less than 2% (2.9 million/221.5 million = 1.3%) of all loops.

demand with reasonably efficient economies of scale and density.[100] Hence, there is no legitimate dispute that all CLECs are impaired without access to incumbent facilities when they seek to offer services that are most efficiently provisioned using copper-based technology.

The situation is not significantly different with regard to the deployment of fiber loops. In most situations, demand between customer premises and ILEC central offices is aggregated first at a Serving Area Interface ("SAI") and, ultimately, at a remote terminal ("RT"), where an ILEC uses remotely deployed DLC equipment to aggregate demand from large numbers of customer loops and place the aggregated traffic onto digital feeder facilities that are routed back to the central office. *See* Riolo NGDLC Dec. ¶¶ 20-23, 33-35, 65-66. However, CLECs face severe practical and economic impediments that preclude them from accessing traffic at either the SAI or the RT. Accessing traffic at the SAI is uneconomic for CLECs, because such collocation requires a CLEC to bear costs that are often comparable to collocating at a central office, but allows a CLEC to serve only a fraction of the customers served by central office. *See id.* ¶¶ 80-84; *see also infra* Part IV(B)(3). In addition, while SAIs have cross-connect devices, they do not have power or HVAC capabilities. Collocation at remote terminals is not viable either, because of insufficient space to collocate the necessary electronics, lack of power and HVAC necessary for CLECs to deploy remote electronics, and the inability to efficiently cross-connect their facilities to the ILECs' facilities within a remote terminal. *See* Riolo NGDLC Dec.

[100] The only exception is cable companies, which deployed last-mile coaxial cable facilities for a completely separate reason, *i.e.*, to distribute video programming. Until quite recently, such programming could not be transmitted over loops that are also used to provide telephone service. Moreover, the only reason it was economic for cable providers initially to construct their own facilities was the separate revenue stream they could earn from program distribution, and the only reason cable providers could afford to upgrade their cable plant to provide telephony is that they could use the same basic plant to provide both types of services.

¶¶ 65-74; *see also infra* Part IV(B)(3). Accordingly, CLECs cannot reasonably expect to be able to aggregate sufficient customer demand to achieve the economies of scale they need to be competitive with an ILEC that already has ratepayer-subsidized loop facilities in place.

Thus, the only time that it makes economic sense for a CLEC to deploy fiber loops is to serve a location that individually has enormous demand. The "smallest" fiber loop facility that can be installed is an OC-3 loop, which is equivalent to nearly 2,000 voice grade lines. There are only a handful of customers that potentially justify this level of facility deployment. That is why, AT&T and other CLECs remain critically dependent upon ILEC loops to serve the vast majority of their customers.

In all events, by definition, a CLEC can only deploy a fiber *loop* when it has first deployed a fiber *transport* capability reasonably close to the customer to carry the traffic from the loop to its own switch. But unlike the ILECs, which already have ubiquitous fiber transport networks in place, the circumstances in which a CLEC can economically deploy fiber transport are also very limited.

Transport. Unlike loops, virtually all of the ILECs' inter-office transport facilities are high-capacity fiber. Riolo NGDLC Dec. ¶¶ 18-19. These facilities are cables composed of bundles of up to 256 (or more) individual fiber strands with each active strand "lit" by transmission electronics that provide enormous capacity. Given the high fixed costs of fiber and its inherent economies of scale, it is most efficient to operate fiber transport facilities using electronics that provide high levels of bandwidth. Typically, interoffice fiber transport facilities are operated at the OC-48 level, which is the equivalent of 32,256 voice grade circuits. ILECs can justify the enormous fixed costs of fiber construction and associated electronics because the

huge base of customers whose loops terminate at their LSOs generates sufficient demand to fill fiber facilities at reasonable utilization levels.[101]

Because of the ILECs' scale efficiencies, incremental cost advantages, and preferential access to rights-of-way, there are only limited opportunities for a CLEC efficiently to replicate incumbent fiber transport facilities. Because, as described above, it is virtually always infeasible to self-deploy loops, the first place a CLEC can gain access to a customer is the ILEC LSO, where the customer's loop terminates. As rule of thumb, a CLEC must have multiple DS-3s of traffic before it will consider extending a fiber facility to an LSO. Lesher-Frontera Dec. ¶ 21. That is the *minimum* level of traffic necessary to begin contemplating the deployment of a fiber facility comparable in scale to an ILEC's fiber, which, as noted, typically operates at an OC-48 level. *Id.* But given the small number of customers that most CLECs can expect to serve from a single LSO, there are only a few LSOs that by themselves have sufficient demand to justify a CLEC's construction of alternative fiber transport.

This analysis is consistent with AT&T's experience. AT&T currently has special access circuits to approximately 11,500 of the over 14,000 ILEC LSOs. For fully 70% of these LSOs, AT&T has insufficient traffic to fill a *single* DS-3 facility to reasonable levels of utilization to carry its substantial long distance traffic. Fea-Taggart Use Restriction Dec. ¶ 7. Most CLECs, of course, do not have the long distance traffic that AT&T does and would therefore have even less ability to self-deploy fiber to any given LSO.

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[101] Indeed, the ILECs' fiber is not only used to serve the inter-office *local* calling of its currently captive customers; it is also used to provide virtually all of the switched access and dedicated transport access required by IXCs. Thus, unlike CLECs, the ILECs' transport networks collectively benefit from unit costs and ubiquity derived from their current position of serving almost all of the total national communications demand for these facilities.

The only way that a CLEC can even attempt to gain economies of scale comparable to the ILEC is for the CLEC to "home" DS-1/DS-3 level transport from several LSOs to central locations where higher capacity facilities can be justified between such points of aggregation. Although simple in concept, multiple layers of "hubbing" and multiplexing may be necessary before sufficient economies of scale can be reached. In fact, AT&T, which can combine both long distance and local traffic, nonetheless must typically hub traffic from multiple LSOs to reach the level of traffic necessary to justify deployment of fiber transport. *See* Lesher-Frontera Dec. ¶ 22. Thus, a facilities-based CLEC can economically deploy fiber only to those few LSOs where it has substantial demand or, more typically, to hubs, which themselves are points at which traffic from several "low" demand LSOs have been aggregated by using transport facilities obtained from the ILEC.

For these reasons, permitting ILECs to withhold transport UNEs – either directly by eliminating dedicated transport from the minimum "national list" or, as is now the case, indirectly through the imposition of use restrictions and prohibitions on co-mingling – seriously inhibits the very facilities-based competition this Commission seeks to promote. *See UNE Remand Order* ¶ 112 ("We agree with the competitive LECs that argue that unbundled access to certain incumbent facilities will accelerate initially competitors' development of alternative networks because it will allow them to acquire sufficient customers and the necessary market information to justify the construction of new facilities."). A simple example makes this point clear. Assume that a CLEC wants to deploy a switch and serve customers in a geographic region currently served by five LSOs, all of which are currently connected with ILEC fiber facilities. Further assume that the CLEC has won some customers that generate substantial demand, but at only two of the five LSOs. If the CLEC could not use UNEs to meet its transport needs, then its

entire facilities-based entry would likely be uneconomic, because the CLEC would be forced either to pay excessive (and non-cost-based) access rates or to build fiber facilities with enormous excess capacity to the LSOs where it will have little traffic. In either case, these costs – which the ILEC does not face – would make it virtually impossible for the CLEC to price its service competitively with the ILEC and still be profitable.

In sharp contrast, if the CLEC can purchase dedicated transport from the ILEC – which incurs negligible incremental cost to place the CLEC demand on its in-place fiber facilities – the CLEC would be able to use ILEC-provided transport to aggregate all the demand from the three "low" demand LSOs at a single hubbing point and then potentially self-provide transport to connect the two "high" demand LSOs and the hub that aggregates the demand of the three "low" demand LSOs.

That, of course, is precisely the facilities deployment scenario Congress contemplated in the Act. By allowing CLECs to purchase dedicated transport as an unbundled network element, a CLEC can "fill in" the parts of its network where it does not have sufficient traffic to justify building its own facilities. A CLEC can purchase UNEs to transport traffic from LSOs where it has relatively low demand to a central hub where that demand can be multiplexed. Then, assuming the CLEC can conquer the other hurdles to constructing its own facilities (*e.g.*, rights of way, collocation and construction costs and delays) it could deploy its own fiber transport facilities to connect its various hubs. By following this course – the same one that the ILECs have used in building up their own networks over time – CLECs can better ensure that their fiber facilities will have fill factors close to those of the ILEC and thereby better manage their underlying unit costs. Indeed, it is for precisely these reasons that the Commission concluded in the *UNE Remand Order* that the availability of unbundled transport as a UNE allows CLECs "to

aggregate loops at fewer collocation locations and increase their efficiencies by transporting aggregated loops over efficient-high capacity facilities to their central switching location." *UNE Remand Order* ¶ 288.

However, as described above, the Commission inexplicably reversed course in the *Supplemental Clarification Order* and permitted the ILECs to impose use and co-mingling restrictions that have effectively made dedicated transport UNEs unavailable to CLECs, even where they are used to provide a significant amount of local traffic. *See also* Carroll-Rhodes Use Restriction Dec. ¶¶ 10-22. By allowing ILECs to make transport functionality available only as an "access service" rather than as a UNE, these rules place CLECs in an untenable position. In order to justify deploying a switch, a CLEC generally needs to be able to reach customers that spread throughout a broader geographic region than the ILEC. That, in turn, means the CLEC must create an extensive transmission network to connect its customers to its switch and that its transmission costs per customer must be close to the ILEC's own internal cost. Conversely, ILECs simply do not incur the transport piece of these transmission costs, because their customers' loops all terminate at their switches.

Thus, the existing limitations force CLECs into a Hobson's choice. If, on the one hand, a CLEC considers building its own transport facilities, the use and co-mingling restrictions make it impossible to justify such construction, because it cannot aggregate its demand at an efficient cost or use UNEs to fill in gaps in its network. On the other hand, if the CLEC considers using the ILEC's monopoly special access services to provide the transport functionality, the

supracompetitive prices for those services force its costs up well above the ILEC's own costs.[102] Either way, it is almost certain to lose any head-to-head battle with the incumbent.

Moreover, since mid-2000, BellSouth, SBC, Verizon, and Sprint have each received "Phase II" pricing flexibility in many cities for transport and special access services representing $2.5 billion in annual revenues.[103] The purpose of granting such pricing flexibility was to enable ILECs to lower their access rates to meet lower priced retail service offers from nascent competitors. *See Pricing Flexibility Order* ¶ 3. But the actual market results of this pricing flexibility have been quite the opposite of what was intended. First, *none* of these incumbent LECs has decreased its special access rates in the affected cities, and interexchange carriers have been denied $100 million in X-Factor reductions that they would have received if those $2.5 billion in revenues had remained under price caps. Second, and most perversely, BellSouth and Verizon have actually *increased* their special access rates, which has resulted in cost increases to AT&T alone of $25 million and $24 million, respectively. As a result of these and other

[102] Worse yet, once a CLEC purchases special access from an ILEC, it is effectively foreclosed from purchasing UNEs at TELRIC-based rates for the duration of the contract term. Given that the ILECs had steadfastly refused to provide loop-transport combinations, CLECs had little choice but to buy special access services to reach those customers. The ILECs now claim that when a CLEC attempts to convert from a special access arrangement to EELs that this conversion triggers the penalty provisions of the tariff that govern early termination. *See* AT&T Virginia Section 252 Arbitration Post-Hearing Brief, CC Docket 00-251, Issue III-7-C (filed Nov. 16, 2001). These penalties are "designed to make [the ILEC] whole if the services are canceled prematurely." *Id.* Thus, even should a CLEC be able to demonstrate that it meets the Commission's safe harbor and is entitled to lease loop-transport combinations from the ILEC, existing special access penalty provisions prevent the CLEC from leasing EELs until the expiration of the current term of the special access service arrangement. *See* Lesher-Frontera Dec. ¶ 72 n.16.

[103] Under "Phase II" pricing flexibility, price caps are eliminated, and the ILEC is effectively treated largely as though it were a nondominant carrier.

exercises of the ILECs' market power, ILEC special access charges are now nearly *twice* their economic costs. *See* Reply Comments of AT&T Corp. on Use of Unbundled Network Elements to Provide Exchange Access Services, CC Docket No. 96-98 at 15-16 (filed Apr. 30, 2001) ("AT&T Use Restriction Reply")).

In sum, the basic economics and engineering of loop and transport facilities severely limits CLECs' ability to self-deploy such facilities so that it is conceivable only to construct facilities to serve the locations with high concentrations of demand. However, even in these situations, CLECs need access to EELs in order to aggregate efficiently traffic to the point where they can achieve economies of scale comparable to the incumbents. The current "interim" use and co-mingling restrictions, however, have made EELs unavailable to CLECs, forcing them to rely on ILEC access services. The supracompetitive prices ILECs charge for those services substantially drive up CLECs' costs and make it all but impossible for CLECs to self-deploy transmission facilities.

2. Even in Cases where it may be Theoretically Feasible to Self-Provide Fiber Facilities, Numerous Real-World Limitations Impair CLECs' Ability to do so.

Even assuming that EELs were available to allow CLECs to efficiently aggregate traffic and that, using EELs, a CLEC could aggregate sufficient demand to theoretically justify the deployment of fiber facilities (for either loops or transport), that is only the beginning of its determination as to whether it can actually do so in the real world. Thus, any review of the CLECs' impairment requires a comprehensive analysis of other real-world impairments as well. The record of past and pending proceedings demonstrates the long litany of impediments CLECs

face when they attempt to construct their own facilities.[104] These impediments explain why CLECs have only been able to deploy modest amounts of local fiber to a small fraction of the customers the ILECs serve, even when it might otherwise be theoretically economic to deploy such transmission facilities. As explained below, none of those facts have changed since the Commission issued the *UNE Remand Order*.

On the other hand, the financial markets have completely reversed direction since the *UNE Remand Order*, and they are now almost entirely closed to CLECs. *See generally* Willig Dec. ¶¶ 95-97 & Exhibit 1; *see also* AT&T Use Restriction Reply Comments at 11-14; AT&T Corp. *Ex Parte*, An Economic and Engineering Analysis of Dr. Robert Crandall's Theoretic "Impairment" Study, CC Docket No. 96-98, at 1 (filed June 11, 2001) ("Crandall Rebuttal *Ex Parte*"). Hardly a week now goes by without an announcement that a CLEC is filing for bankruptcy or is on the verge of doing so, or is scaling back its market entry plans for 2002. Indeed, since this very *Notice* was issued, both Global Crossing, McLeodUSA and Mpower have been pushed into bankruptcy. Willig Dec., Table 2. Almost every CLEC's stock is now trading at a small fraction of its price in late 1999, when the Commission issued the *UNE Remand Order* (on the basis of data submitted in mid-1999). Thus, many CLECs are unable to obtain any funds for network expansion and those that can obtain some financing face enormous capital costs and constraints. *See* Willig Dec. ¶ 8.

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[104] *See, e.g.*, AT&T Use Restriction Reply Comments at 29-36; Fea-Taggart Use Restriction Dec. ¶¶ 9-23; Joint Comments of Allegiance Telecom, Inc. and Focal Communications Corp., CC Docket No. 96-98, at 5-27 (filed June 11, 2001) ("Focal/Allegiance Joint Petition Comments"); WorldCom Comments, CC Docket No. 96-98, at 14-22 (filed June 11, 2001) ("WorldCom Joint Petition Comments"); Comments of XO Communications, Inc., CC Docket No. 96-98, at 12-24 (filed June 11, 2001).

The prevailing financial conditions have also had a severe and extremely negative impact on the CLECs' ability to provide service in competition with ILECs. Fea-Taggart Use Restriction Dec. ¶¶ 32-37. For example, the well-publicized bankruptcies of many once-prominent CLECs have made business customers increasingly wary of purchasing telecommunications services from the CLECs that remain. This is particularly true for businesses with mission-critical telecommunications needs. Relatedly, the rapidly declining financial position of many CLECs also limits AT&T's ability to use third party-provided facilities as an alternative to ILEC facilities. Two of AT&T's pre-qualified facility vendors have filed for bankruptcy, and a third was acquired by a carrier that refused to honor the terms of AT&T's contract. *Id.* ¶ 37. And even for those customers that are willing to purchase local services from AT&T, their concerns about the stability of other CLECs have led many to specify that AT&T may only provide service using its own facilities or those of the ILEC. Thus, even in the limited cases where other suppliers have constructed facilities to a building, those potential sources of supply may be rendered moot by customers' refusal to accept services that use such alternative access.[105]

Beyond the lack of capital, CLECs face a host of other real-world constraints when they attempt to deploy fiber transmission facilities, even in the limited instances where such deployment could theoretically be economic. In order to deploy transport facilities, CLECs must obtain municipal rights of way and possibly coordinate "street digs" with other utilities while the incumbent – who already has fiber in the ground – either lights a new strand or upgrades the

[105] AT&T's detailed explanation of the significant constraints it faces in attempting to use third-party facilities is set forth in the Fea-Taggart Use Restriction Declaration (¶¶ 32-37).

terminating electronics to provide more capacity. As the Commission has recognized, many municipalities demand exorbitant fees and seek to impose other onerous conditions when a CLEC attempts to obtain a right of way to deploy a transmission facility.[106] For example, as documented by the Rights-of-Way Working Group, municipalities have, *inter alia*, attempted to:

- impose fees well in excess of the costs incurred by municipalities;
- impose annual registration fees;
- require pre-notification prior to the introduction of new services;
- require the party obtaining the right of way to grant most favored community status regarding rates, terms and conditions of service;
- require the party obtaining the right of way to give free fiber and conduit capacity to the municipality;
- regulate the carrier's service offerings as a condition of the right of way; and
- impose equal employment opportunity provisions.[107]

Worse yet, there are many places where competitors cannot build at all, because a number of municipalities have enacted moratoria on their fiber deployment. Comments of Yipes Transmission, Inc., CC Docket No. 96-98, at 13 (filed June 11, 2001). Indeed, until recently, California has prohibited new construction altogether. Joint Comments of El Paso Networks,

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[106] *See Third Section 706 Report* ¶¶ 166-168 (noting numerous examples where costs and burdens imposed for use of rights of way "are a barrier to deployment"); *id.*, Separate Statement of Commissioner Martin at 2 ("Some state and local governments – and the federal government with respect to federal lands – maintain onerous permitting processes for rights of way . . . which may be significant impediments to new entrants' ability to provide broadband.").

[107] *See* Rights-of-Way Working Group *Ex Parte*, CC Docket Nos. 98-146, 96-98 and WT Docket No. 99-217 (filed Jan. 25, 2002).

LLC and Global Broadband, Inc., CC Docket No. 96-98, at 15-17 (filed June 11, 2001) ("El Paso Joint Petition Comments").

But even where rights of way can be obtained, AT&T's experience is that such negotiations almost always take at least four to six months to complete, and AT&T has been involved in negotiations (and resulting litigation) that have lasted for years. *See UNE Remand Order* ¶ 364 (finding "delays of this magnitude associated with obtaining authority to access public rights-of-way materially delay the ability of a requesting carrier to self-provision transport"). In some of these instances, negotiations have broken down and AT&T has been forced to abandon its construction plans altogether. *See, e.g.*, Brief of the FCC as *Amicus Curiae*, *TCG* v. *City of White Plains*, No. 01-7213 (L), p. 4 (2d Cir.) (filed June 12, 2001) (noting that TCG began seeking permission to provide service in White Plains, New York in 1992 – almost 10 years ago – and is still unable to obtain it).

Deployment of transport is further complicated by the fact that there must be diverse routing to ensure acceptable service quality. *See* Fea-Taggart Use Restriction Dec. ¶ 13. AT&T (and carriers generally) use a "SONET ring" architecture when self-provisioning transport. To achieve this reliability, however, the CLEC must construct two *separate* physical fiber paths in a closed "ring." Therefore, CLECs must generally obtain multiple rights-of-way to provide reliable service to their customers.

Likewise, there are fundamental limits on CLECs' ability to collocate in order to self-deploy transport. *See id.* ¶ 14. Given the highly limited number of instances in which CLECs can self-provide loops, unless EELs are generally available, a CLEC must collocate in each LSO that subtends a customer in order to gain access to the ILEC-provided loop. *UNE Remand Order* ¶ 361 ("Collocation is an essential prerequisite to self-provisioned and third-party provisioned

transport"). Notably, in every LSO where a CLEC might consider collocating in order to self-deploy fiber transport, that CLEC will be installing the same type of fiber facilities that the ILEC already has in the ground, even though it can only expect to serve a small fraction of the customers served by the LSO – thus placing itself at an enormous cost disadvantage vis-à-vis the ILEC.

Further, the CLEC must incur significant collocation costs in self-providing transport – costs that the incumbent likewise does not bear. *See UNE Remand Order* ¶ 357 (documenting collocation costs). AT&T must spend over **[proprietary begin] ******** [proprietary end]** to establish a collocation site and incurs collocation rental charges that average over **[proprietary begin] ***** [proprietary end]** per cage. Lesher-Frontera Dec. ¶ 46.

And all these substantial problems assume, of course, that a CLEC is actually able to get collocation space in a timely and nondiscriminatory manner. The *UNE Remand Order* (¶ 363) documented the numerous delays that CLECs face in obtaining collocation space from ILECs. *See also UNE Remand Order* ¶ 309 ("Collocating in incumbent LEC central offices imposes material costs and delays on a requesting carrier and materially diminishes a requesting carrier's ability to provide the services it seeks to offer"). Although recent Commission orders have curbed some of the most egregious ILEC anticompetitive collocation practices, those regulations have done nothing to dampen the ILECs' incentive to use their control over bottleneck collocation space to impede CLECs' ability to compete on the merits by imposing unreasonable terms and conditions on obtaining collocation.

Finally, customers are often unwilling to permit a CLEC to make the facilities re-arrangements necessary to allow it to offer service using its own transport facilities. Many customers, particularly large telecommunications-intensive businesses, understandably refuse to

allow CLECs to switch them to the CLEC's transport facilities, because they do not want to risk the possibility of any service disruptions. Fea-Taggart Use Restriction Dec. ¶ 28. This is true even when the CLEC offers financial incentives to the customers. *Id.* Put simply, CLECs face the reality that no one has ever been fired for buying access from the ILEC, and many customers are unwilling to take the (perceived) risk of using CLEC facilities, even when they offer generally superior performance and lower price.

The hurdles CLECs face in self-deploying loops are even more daunting. *See id.* ¶¶ 16-20. In order to construct its own high capacity loops (which must connect with individual customers' inside wire), a CLEC not only has to obtain a municipal right of way, but it also has to acquire a right of way from the landlord of the building it proposes to serve. A large percentage of landlords, however, either refuse to allow competitive carriers to enter the building, or demand exorbitant payments for such access. And even commercial landlords that permit such access almost always limit CLECs to a fiber to the floor arrangement, which only allows CLECs to use their fiber to serve a specific customer. Indeed, in AT&T's experience the **[proprietary begin]** ********** **[proprietary end]** of its fiber loops are fiber-to-the-floor arrangements that prevent it from using those loops to provide facilities-based service to other customers in the building. *Id.* ¶ 30; Lesher-Frontera ¶ 42. Such limitations of course limit the number of cases in which AT&T (or any other CLEC) can aggregate sufficient demand to justify any loop construction at all.

Further, the delays inherent in obtaining rights of way and constructing loop facilities also exacerbate the "chicken or egg" dilemma that all new entrants face. *See* Fea-Taggart Use Restriction Dec. ¶ 20. The most important factor in the decision to build a facility, and the most difficult to judge, is the revenue potential of a particular customer location. A CLEC cannot

even consider making costly investments in loop facilities unless it has a good prospect that it will have a customer at the other end. Indeed, CLECs have no other option in today's constrained capital markets, which, contrary to the ILECs' self-serving claims, will no longer fund network expansion on the theory of "build it and they will come." *See* Joint Petition of BellSouth, SBC, and Verizon for Elimination of Mandatory Unbundling of High-Capacity Loops and Dedicated Transport, CC Docket No. 96-98, at 12 (filed Apr. 5, 2001).

This problem is particularly severe for local loops, which, by definition, are dedicated to a particular customer. Fea-Taggart Use Restriction Dec. ¶ 16. Customers usually do not approach CLECs until they need additional capacity on short notice. Thus, they are generally unwilling (or unable) to wait for the CLEC to complete the lengthy building process, especially since the ILEC can usually meet their needs immediately with its existing, ubiquitous network.[108] The customer's need for prompt service thus often trumps its willingness to use an alternative provider. And in those situations, of course, new entrants do not even get the opportunity to use their own facilities to serve the customer. Indeed, unless they can get immediate access to the ILEC's transmission facilities as UNEs, they completely lose the opportunity to serve the customer on an equal footing with the ILEC, and the customer loses all opportunity to benefit from competition.

Taken together, these problems typically create a situation in which the "first carrier in wins all." Once a landlord has secured a telecommunications carrier to serve its tenants (in almost all cases, the ILEC), the landlord generally has little interest in granting access to

[108] As noted above, even if the ILEC has to increase its capacity to serve the new customer demand, it can generally do so by adding electronics to the existing in-place facilities, without having to obtain permission from any third party or to construct additional cables.

subsequent carriers. Similarly, once a business is served by a local provider (again usually the ILEC), it has little interest in switching providers when it must wait months, if not years, for the alternative carrier to provide service.

3. Market Data Show that CLECs do not have Significant Alternatives to the ILECs' Fiber Loop and Transport Facilities.

As a result of these significant impediments, CLECs have almost never been able to deploy facilities to serve customer demand less than multiple DS-3s, and have had only limited ability to deploy fiber facilities to serve demand in excess of that level. The Commission reached this precise conclusion in its *UNE Remand Order*. Based on an extensive factual record, the Commission found that CLECs generally could not self-provide loops and transport, *including* high capacity loops and transport used for special access services, or acquire such facilities from third parties. *UNE Remand Order* ¶¶ 176-78, 182-84, 187, 321-324, 334-60.

With regard to fiber loops, the Commission squarely rejected ILEC claims that the Commission "should not unbundle high-capacity loops because competitive LECs have successfully self-provisioned loops to certain large business customers." *Id.* ¶ 184. Instead, the Commission found that "[b]uilding out *any* loop is expensive and time consuming, *regardless of its capacity*." *Id.* (emphasis added); *see also id.* ¶ 182 ("self-provisioning is not a viable alternative to the incumbent's unbundled loops, because replicating an incumbent's vast and ubiquitous network would be prohibitively expensive and delay competitive entry."). Similarly, the Commission held that *all* transport facilities, including those at the DS-1, DS-3 and OC-3 to OC-96 level, must be unbundled because the factual record demonstrated that the ILECs are generally the only realistic and reliable source of transport, even in large metropolitan areas, because "self-provisioning ubiquitous interoffice transmission facilities, or acquiring these

facilities from non-incumbent LEC sources, materially increases a requesting carrier's costs . . . delays broad-based entry, and materially limits the scope and quality of a requesting carrier's service offerings." *Id.* ¶¶ 321-24, 334-60.

Nothing has changed in the last three years that alters these fundamental impediments to alternative facilities deployment by CLECs. *See Notice* ¶ 61 ("We seek comment on whether, in light of changed circumstances, we should retain [existing] unbundling requirements and if so, whether we should modify these requirements . . . ."). In fact, the only significant factor that has changed is that the competitive LEC industry is collapsing. Where capital is available at all (from either external or internal sources), CLECs now face much higher capital costs. As a result, much of the facilities construction that may have been justified in 1999 would now not be possible. Lesher-Frontera Dec. ¶¶ 73-77. Indeed, AT&T own financial ability to support facilities construction has been sharply reduced over the past two years. *See id.* ¶¶ 75, 77 (providing details). And for those many CLECs that cannot obtain expansion capital at all, even projects that could be economically justified cannot be undertaken under present economic circumstances.

Indeed, the record evidence incorporated from the Use Restriction/Joint Petition Proceedings overwhelmingly demonstrates that, despite significant investments, AT&T and other CLECs remain critically dependent upon ILEC high capacity loop and transport facilities. For example, even in those limited instances where AT&T has deployed a fiber ring, it still relies on the ILEC to provide both "tails" from customers' premises to AT&T's fiber ring and "backbone" transport used to carry traffic to hubs where it can be aggregated and then carried on AT&T's fiber ring. For the "backbone" portion of AT&T's own local network, AT&T almost never self-provides DS-1 transport and self-provides DS-3 transport only a small **[proprietary**

begin] *** [proprietary end]** proportion of the time. Fea-Taggart Use Restriction Dec. ¶ 6. For the "tail" portion of the network, AT&T provides a very small fraction **[proprietary begin] ***** [proprietary end]** of its own DS-1 facilities.[109] *Id.* The remaining service is provided almost entirely by utilizing the facilities of the ILECs.[110] *Id.*

More "granular" data provided in the declarations accompanying these comments show that the case for impairment is even stronger than these national figures might imply. AT&T has active local collocations in about 1,000 ILEC LSOs that cover less than 10% of buildings where ILEC loops terminate. Lesher-Frontera Dec. ¶ 33. Further, **[proprietary begin] ********** *** [proprietary end]** of AT&T's collocations are served by any AT&T-provided facilities, but instead use ILEC facilities to transport traffic to a "hub." *Id.* ¶ 34. And **[proprietary begin] ********** [proprietary end]** of AT&T's collocations are concentrated in **[proprietary begin] ********** [proprietary end]**. *Id.* ¶ 33.

Similarly, AT&T has installed (or has IRUs for) about 17,000 route miles of local fiber – compared the 362,000 route miles of ILEC fiber. *Id.* ¶ 38. About **[proprietary begin] *** [proprietary end]** of AT&T's local route miles are located **[proprietary begin] ******

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[109] AT&T provides **[proprietary begin] *** [proprietary end]** of its DS-3 tails, but these facilities constitute a very small percentage of the total tails in AT&T's network. Fea-Taggart Use Restriction Dec. ¶ 6 n.7.

[110] Specifically, ILECs provide more than **[proprietary begin] *** [proprietary end]** of AT&T's DS0 tails, more than **[proprietary begin] **** [proprietary end]** of AT&T's DS-1 tails and about **[proprietary begin] *** [proprietary end]** of AT&T's DS-3 tails. *Id.* ¶ 6 n.8. Moreover, AT&T uses ILEC facilities for more than **[proprietary begin] **** [proprietary end]** of AT&T's DS-1 backbone transport and more than **[proprietary begin] **** [proprietary end]** of its DS-3 backbone transport. *Id.*

[proprietary end] of its markets.[111] *Id.* ¶ 39. Thus, for the vast majority of routes, AT&T has no facilities at all.

Other CLECs have provided comparable figures showing their overwhelming reliance upon ILEC high-capacity loops to reach customers. *See, e.g.*, Joint Comments of Cbeyond *et al.*, CC Docket No. 96-98, at 23 (filed June 11, 2001) ("Cbeyond *et al.* Joint Petition Comments"); El Paso Joint Petition Comments at 15-16; WorldCom Joint Petition Comments at 8. Similarly, like AT&T, CLECs remain heavily dependent upon ILEC transport facilities to reach the tens of thousands of central offices that are not connected to their fiber backhaul facilities. *See, e.g.*, Comments of Advanced Telecom Group, Inc., CC Docket No. 96-98, at 2-6 (filed June 11, 2001); Allegiance/Focal Joint Petition Comments at 8; El Paso Joint Petition Comments at 15-16; WorldCom Joint Petition Comments at 16.[112]

It is also clear that CLECs that have not deployed their own fiber networks have virtually no option but to use ILEC facilities because of the lack of availability of third-party alternatives. Cbeyond, supported by a sworn affidavit, shows that it "does not have any alternative to BellSouth for high capacity loops." Cbeyond, *et al.* Joint Petition Comments at 23; *see also* Comments of Penn Telecom, Inc., CC Docket No. 96-98, at 6 (filed June 11, 2001) (providing comparable evidence for Verizon). NuVox obtains "virtually all" of its high-capacity facilities

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[111] These concentrations reflect the fact that AT&T has IRUs with cable entities in those markets. Thus, it has not had to bear the entire cost of such facilities or obtain rights of way or buildings access.

[112] For example, McLeod reports that 55% to 93% of its collocations in the five cities where it has deployed local fiber rely on incumbent LEC transport. McLeod Joint Petition Comments at 3. Allegiance and Focal provide comparable statistics. Allegiance/Focal Joint Petition Comments at 10-11.

from ILECs. Affidavit of Brian Butler ¶ 9 (attached to Cbeyond, *et al.* Joint Petition Comments). CTC Exchange likewise provides sworn testimony demonstrating that it generally must rely on ILEC loop and transport facilities for its high-capacity services. Affidavit of Jerry Weikle ¶¶ 5-10 (attached to Cbeyond, *et al.* Joint Petition Comments).

Building "penetration" figures vividly highlight the CLECs' very limited success in replicating last mile transmission facilities. AT&T has been able to penetrate only a tiny fraction of the over 3 million commercial buildings in the U.S. AT&T Use Restriction Reply Comments at 24-27. Overall, AT&T – one of the largest facilities-based CLECs – has only been able to connect only about 6,000 buildings to its local network, and in **[proprietary begin]** ********** **[proprietary end]** of those buildings its has had to rely in part on ILEC facilities. Lesher-Frontera Dec. ¶¶ 41-42. And in those few instances where AT&T serves a building using only its own facilities, **[proprietary begin]** *** **[proprietary end]** are served using "fiber to the floor" that allows AT&T to serve only a particular customer rather than the entire building. *Id.* ¶ 42.

This is consistent with the low level of CLEC building penetrations that rely on their own facilities. The record evidence in the Use Restriction/Joint Petition proceedings demonstrates that CLECs have penetrated *less than 6%* of commercial buildings, and for most of those buildings they are able to serve only particular floors or customers. AT&T Use Restriction Reply Comments at 26 & Pfau Dec. ¶¶ 39-47; Sprint Joint Petition Comments at 3. Overall, investment professionals see no more than 30,000 to 60,000 buildings addressable *nationally* by CLEC fiber extensions in the near term. *City Light: An Investor Guide to Metropolitan Optical Services*, at 11 (March 22, 2001).

Thus, an earlier ILEC claim, presented in the "USTA Special Access Fact Report" – a document prepared by the ILECs' attorneys – that competitors have "penetrated" 175,000 unique office buildings (USTA Report at 11) is simply false. As AT&T explained, in deriving that number, USTA implicitly assumed that that only one competitor serves a building, because it merely adds together the "buildings penetrated" for each CLEC. AT&T Use Restriction Reply Comments at 24. That is wrong because the small percentage of buildings that are open to competition are often served by multiple CLECs. In addition, the USTA Report's calculations included buildings *passed* as being "on-net," whether or not CLECs could gain access by securing the necessary rights of way or building access arrangements. *Id.*

Finally, for the past year, the ILECs have relied on grossly inflated claims of CLEC market shares in special access services (and local high capacity Frame Relay and asynchronous transfer mode ("ATM") services) as the centerpiece of their argument that CLECs would not be impaired without access to "high capacity" transport and loops. The ILECs' claims have now conclusively been shown to be false. In particular, relying again on the USTA Report, the ILECs have repeatedly asserted as a "fact" – in every available forum[113] – that CLECs have captured

[113] *See* Reply Comments of SBC, CC Docket No. 01-321, at 5, 9 (filed February 12, 2002); Comments of SBC, CC Docket No. 01-321, at 8-9 (filed January 22, 2002); SBC *Ex Parte,* CC Docket No. 96-98, at 2 (filed August 17, 2001); SBC *Ex Parte*, CC Docket No. 96-98, at 3 (filed July 24, 2001); Reply Comments of SBC, Verizon and BellSouth, CC Docket 96-98, at 2, 24-5 (filed June 25, 2001); Reply Comments of SBC and Verizon, CC Docket 96-98, at 1, 5, 14-15 (filed April 30, 2001); Comments of SBC and Verizon, CC Docket 96-98, at 5, 16 (filed April 5, 2001); Joint Petition of SBC, Verizon and BellSouth, at 1, 4-6 of Attachment B (filed April 5, 2001); Reply Comments of BellSouth, CC Docket 01-321, at 6 (filed February 12, 2002); Reply Comments of BellSouth, CC Docket 96-98, at 3 (filed April 30, 2001); Comments of BellSouth, CC Docket 96-98, at 2, 8, 11, 21-22, 25 (filed April 5, 2001); Reply Comments of Verizon, CC Docket 01-321, at 5 (filed February 12, 2002); Comments of Verizon, CC Docket 01-321, at 5 (filed January 22, 2002).

36% of the special access market. But that "fact" is simply untrue. AT&T's Reply Comments in the Use Restriction proceeding demonstrated that the ILECs' claim was based on a black box methodology that mixed and matched data sources to achieve a pre-determined result. AT&T Use Restriction Reply Comments at 17-19; Pfau Use Restriction Dec. ¶¶ 5-21. AT&T showed that the authors of the report used faulty analytical techniques to grossly overstate special access revenues earned by CLECs (and to understate ILEC revenues). *Id.* Correcting these errors and using extremely conservative assumptions, AT&T demonstrated that CLECs had, at most, a 21.8% share. Pfau Use Restriction Dec. ¶¶ 5-21.

Now, the Commission's own recently released data conclusively rebuts the ILECs' claim and demonstrates that the market share figure AT&T calculated was in fact extremely conservative. The Commission's most recent data show that the ILECs continue to dominate the provision of special access services with an 88.5% market share.[114] And even this figure understates the ILECs' dominance and overstates the true level of facilities-based competition, because it includes CLEC revenues from the resale of incumbent LEC interstate special access services.

The ILECs' claim that interexchange carriers have gained a substantial share of the market for Frame Relay and ATM markets is also misleading. *See* SBC Petition for Expedited Ruling that it is Non-Dominant in its Provision of Advanced Services and for Forbearance from Dominant Carrier Regulation for those Services, CC Docket No. 01-337, at 54-56 (filed Oct. 3,

[114] *See* Industry Analysis Division, FCC, *Telecommunications Industry Revenues 2000*, Tables 5 and 6 (January 2002). These tables show that in 2000, CLECs had $1.416 billion in interstate special access and private line revenues, whereas ILECs had $9.825 billion in interstate special access and private line revenues.

2001). Correctly understood, the ILECs' local frame relay and ATM market share data in fact are highly probative of the *limited* extent of CLEC facilities deployment, because such services are generally provided over high capacity loops and transport facilities and to large businesses with intensive telecommunications needs. In claiming that CLECs have been able to self-deploy high capacity facilities to serve this market segment, the ILECs inappropriately lump together *both* local *and* interLATA data services, the latter of which most ILECs are currently forbidden from providing. Focusing only on the *local* market for these services shows that the ILECs currently control over *90%* of that market segment:

Share of Revenues (Aggregated Nationally) for Local Large Business Data Services in 2000

Carrier	Frame Relay Share[115]	ATM Share[116]
Bell Atlantic	23.8%	27.6%
SBC	24.8%	41.2%
BellSouth	20.5%	8.7%
US West	16.7%	11.0%
GTE	6.0%	7.7%
Sprint	3.0%	------
MCI WorldCom	2.2%	1.5%
AT&T	0.9%	1.2%
Other CLECs	2.1%	1.1%
Total ILEC	91.8%	96.2%

Indeed, additional data from the same source also confirm that CLECs have not made significant progress in constructing their own facilities, because the ILECs' share of large business data services has actually *increased* since 1999, when they held a 91.6% share of local frame relay services and 93.7% share of local ATM services.[117] In contrast, AT&T and WorldCom – the largest alternative local data providers to the ILEC – saw their already small share of these services decline over this time period.[118] The "[m]essage[] in the [d]ata [is that t]he RBOCs will continue to dominate" the markets for these services because they control the bottleneck facilities necessary to provide these services.[119]

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[115] *See* IDC, *U.S. Packet/Cell-Based Services Market Forecast and Analysis*, 2000-2005, at 34 (2001).

[116] *Id.* at 69.

[117] *Id.* at 34, 69.

[118] *Id.*

[119] *Id.* at 34.

Further, the ILECs' own comments in the Use Restriction Proceeding provide conclusive proof that the competitive situation has not changed materially since the Commission issued its *UNE Remand Order*. Both BellSouth and Qwest expressly admitted that their access charges are actually *twice* the forward-looking, economic costs of providing these services.[120] By determining the cost of efficiently replacing the facilities of an incumbent, TELRIC makes cost determinations based on the value of the incumbent's actual existing facilities and thereby "replicates . . . the conditions of a competitive market." *Local Competition Order* ¶ 679. The fact that Qwest, BellSouth and the other ILECs are charging prices well in excess of that level conclusively proves that CLECs have not been able to self-deploy their own facilities and provide effective competition to the ILECs.

These admissions not only show that the ILEC facilities used to provide special access services remain bottleneck facilities; they also highlight the competitive disadvantages faced by CLECs in offering local services. Because the Commission's "interim" use and co-mingling restrictions effectively deny CLECs access to unbundled loop-transport combinations, CLECs are forced to purchase ILEC special access services to provide local services in all but the most unique situations. The inflated access charges thus line the ILECs' pockets at the same time they greatly inhibit CLECs' ability to compete on the merits.

Finally, and in all events, any doubt that CLECs are impaired without access to ILEC transmission facilities is laid to rest by the New York Public Service Commission's ("NYPSC") comments in the Use Restriction Proceeding. After undertaking a comprehensive review of

[120] BellSouth's Comments, CC Docket No. 96-98, at 3 (filed Apr. 5, 2001); Comments of Qwest Corporation in Response to Public Notice, CC Docket No. 96-98, at 7 (filed Apr. 5, 2001).

Verizon's high-speed services, the NYPSC concluded that "for the majority of customers in New York State the *only* facilities available to provide high capacity loops in a timely and economical manner belong to Verizon." Comments of the New York Department of Public Service, CC Docket No. 96-98, at 2 (filed June 11, 2001) (emphasis added). Likewise, the NYPSC concluded that "Verizon remains the dominant provider of dedicated transport in New York." *Id.* at 3. Overall, Verizon's network serves 7,354 buildings in LATA 132 over fiber while CLECs serve fewer than 1,000 buildings.[121] If high-capacity loops and transport facilities are not generally available outside of the incumbent's network in New York – the state in which the competitive process has advanced the furthest – *a fortiori*, they are not generally available in the rest of the country.

4. Shared Transport Must also be Available for Situations where Dedicated Transport is not Economically Feasible.

New entrants would be also impaired in their ability to offer service without access to the incumbent's unbundled shared transport. The Commission has repeatedly held so.[122] Indeed, the need for shared transport has become so uncontroversial that only Ameritech offered any

[121] *Opinion and Order Modifying Special Services Guidelines for Verizon New York Inc., Conforming Tariff, and Requiring Additional Performance Reporting*, Case Nos. 00-C-2051, at 7 (NYPSC June 15, 2001). Individually, AT&T serves fewer than **[proprietary begin]** *** **[proprietary end]** buildings in New York, and only **[proprietary begin]** ** **[proprietary end]** of those buildings employ exclusively AT&T facilities. Lesher-Frontera Dec. ¶ 19 n.4. As is the case in other cities, the overwhelming majority of these buildings are served using a fiber to the floor arrangement and a majority are served using a combination of AT&T and leased ILEC facilities. *Id.*

[122] *See UNE Remand Order*, ¶¶ 369-79; *Shared Transport Order* ¶¶ 19-52; *Bell Atlantic/NYNEX Merger Order* ¶ 190.

significant opposition to the availability of that element in the *UNE Remand* proceeding,[123] and no party appealed the Commission's decision to require the unbundling of shared transport in that proceeding. The underlying facts that supported the Commission's decision regarding shared transport in 1999 have not changed, and there is no basis for the Commission to remove shared transport from the minimum national list of UNEs.

The Commission found in the *UNE Remand Order* (¶ 375) that without access to shared transport, a new entrant would either have to deploy its own dedicated transport or purchase dedicated transport from the incumbent. But, as shown above, new entrants still do not have ubiquitously available transport alternatives today. Rather, new entrants have a small market presence and also lack the information needed to forecast their traffic volumes accurately. *Id.* As a result, new entrants would inevitably purchase too much or too little dedicated transport capacity. The Commission correctly found in 1999 that such reliance on dedicated transport would "materially increase the costs and decrease the quality of services the requesting carrier could provide, and would materially limit the carrier's ability to serve a broad base of customers." *Id.* ¶ 374. The availability of shared transport, in which the switch routes the competitive LEC's traffic through the most efficient trunking group available, using the same algorithms the ILEC uses for its own traffic, thus remains necessary for local competition. *See id.* ¶ 375.[124]

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[123] As the Commission recognized, most of Ameritech's arguments had already been rejected by the Eighth Circuit. *See UNE Remand Order*, ¶¶ 371-72, 377-78; *Southwestern Bell Tel. Cos.* v. *FCC*, 153 F.3d 597 (8th Cir. 1998) (upholding shared transport).

[124] Shared transport also permits the incumbent LEC to share capacity most efficiently with the CLEC and to continue using and generating revenues from its own, existing interoffice (interswitch) facilities.

Similarly, the Commission has recognized that relying on dedicated transport would force new entrants to incur non-recurring charges every time they purchase additional transport capacity. Shared transport, by contrast, allows the requesting carrier in effect to purchase "the entire capacity of the incumbent LEC's network and [thus avoid] non-recurring charges for additional increments of dedicated transport capacity." *UNE Remand Order* ¶ 376. As the Commission further found, requesting carriers will also incur "significantly higher recurring, per-minute costs to substitute dedicated transport for shared transport arrangements at low volumes." *Id.*; *see also Shared Transport Order* ¶ 35 ("requiring carriers to use dedicated transport facilities during the initial stages of competition would create a significant barrier to entry because dedicated transport is not economically feasible at low penetration rates"). For these reasons, the Commission has twice found that the "relative costs of dedicated transport, including the associated [non-recurring] costs," would constitute a "barrier to entry." *UNE Remand Order* ¶ 376; *Shared Transport Order* ¶ 50.

The availability of shared transport is also crucial to the quality of service CLECs can offer. The Commission has also twice found that shared transport is necessary to enable CLECs "to handle traffic at peak loads and maintain call blockage levels that are at parity with those of the incumbent LECs." *See UNE Remand Order* ¶ 378; *Shared Transport Order* ¶ 51. As the Commission has explained, "a new entrant entering the local market with smaller traffic volumes would have to maintain greater excess transport capacity relative to the incumbent LEC in order to provide the same level of service quality (*i.e.*, same level of successful call completion) as the incumbent LEC." *UNE Remand Order* ¶ 378. A requesting carrier would therefore be "impaired" in its ability to offer service without shared transport, because otherwise it would be

forced "to choose between purchasing excess capacity or incurring increased call blockage rates." *Id.*[125]

No relevant changes in these factors have occurred since 1999. CLECs today still have very low market shares and very small customer bases, and as a result they face the same difficulties the Commission identified and relied on in its previous orders requiring incumbents to provide shared transport. With low market share, CLECs are still unable to forecast traffic volumes accurately, and thus they would be forced to order inefficient levels of dedicated transport, which would materially harm their ability to offer service. Similarly, CLECs have no economies of scale and would suffer the same dramatic cost and quality disadvantages the Commission previously identified, if they were forced to rely exclusively on dedicated transport. Accordingly, shared transport should remain available as an unbundled network element.

5. ILECs Should be Required to Provide Necessary Electronics and the NID as Part of Unbundled Loops.

The Commission also seeks comment on two other issues, both relating to the loop element. First, the Commission should require ILECs to install electronics if necessary to fill an order for an unbundled high capacity loop, if the ILEC installs such electronics for itself when it offers services in the same geographic area. *Notice* ¶ 52. In areas where the ILEC is installing such electronics for its own loops, it would be patently discriminatory to refuse to install such

[125] The Commission also found that the availability of shared transport would further the goals of the Act. *UNE Remand Order* ¶ 379. As the Commission explained, "when used in conjunction with unbundled switching, requesting carriers may find it economical to serve the small business and residential markets using shared transport because these market segments may not always support traffic volumes that justify using dedicated transport services." Accordingly, the Commission correctly found that the availability of shared transport "promotes the prompt development of competition to serve the greatest number of customers, as intended by the Act." *Id.*

electronics for carriers requesting access to unbundled loops to offer competing services.[126] *See, e.g., Local Competition Order* ¶ 315 (terms and conditions under which an ILEC provides a UNE "must be equal to the terms and conditions under which the incumbent LEC provisions such elements to itself").[127] Nor would such a rule require ILECs to provide CLECs with "superior quality" loops. *See Iowa Utils. Bd.* v. *FCC*, 120 F.3d 753, 812-13 (8th Cir. 1999). To the contrary, it is well established that § 251(c)(3) requires incumbents to modify their networks to the extent necessary to accommodate requests for unbundled network elements (*see id.*, 120 F.3d at 813; *Local Competition Order* ¶ 202), and in all events such electronics are necessary to ensure that CLECs obtain loops that are equal in quality to what the ILEC provides to itself.

Second, the Commission need not classify the NID as a separate element; rather, the NID should simply be considered part of the loop. *See Notice* ¶¶ 48-49. In particular, when a CLEC is deploying its own loop and wants connectivity to the customer's inside wire, the ILEC should

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[126] The Commission also seeks comment on whether ILECs should provide SONET capabilities on an unbundled basis. *Notice* ¶ 63. As the Commission notes, the use of the term "SONET" has resulted in some confusion, and ILECs have seized on language in the *UNE Remand Order* to improperly deny requesting carriers access to unbundled elements. The Commission should reaffirm and clarify what it said in the *UNE Remand Order*: requesting carriers are entitled to access to the ILECs' transport facilities, even if they are configured in a ring architecture. The Commission should thus clarify that requesting carriers are also entitled to access associated electronics that would provide redundancy or restoration time commitments (whether or not such electronics could be called "SONET" capabilities) whenever the incumbent has already installed such electronics and wherever it subsequently installs such electronics for itself. *See UNE Remand Order* ¶ 324.

[127] The Commission noted in the *Pennsylvania 271 Order* Verizon's representations that it voluntarily provides such electronics. *See Pennsylvania 271 Order* ¶ 91 (noting Verizon's representations that "when requisite electronics, such as line cards, have not been deployed but space exists for them in the multiplexers at the central office and end-user premises, Verizon will order and place the necessary line cards in order to provision the high capacity loop," and it will "also perform the cross connection work between the multiplexers and the copper or fiber facility running to the end user").

not be permitted to charge the CLEC for the NID element. CLECs can deploy their own NID and should be permitted to perform all of the work establishing connectivity to the inside wire itself. The CLEC should not be required to coordinate with the ILECs' technicians, or be charged for any such work. Conversely, when a CLEC purchases the loop element, the NID should simply be available as part of the loop; it need not be separately unbundled.

B. The Commission Should Require Incumbent LECs To Provide Unbundled Access To A Single "Unified" Loop Element.

The issue of CLECs' right to access "entire" or "unified" loops[128] as an unbundled network element has been before the Commission for at least two years and has been extensively briefed twice, with a full record awaiting decision for a year and a half.[129] Moreover, in its June

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[128] Based on the question in the *Notice* (¶ 49), these Comments use the term "unified loop" to refer to any loop that includes fiber feeder, multiplexing equipment, or other electronics between the customer's premises and a distribution frame (or its equivalent) in the central office. Any use of the term "unified" loop should not – and cannot – be interpreted in a manner inconsistent with the Commission's existing definition of the loop element. Regardless of the appellation used, a "unified" loop refers solely to the functionality of a so-called "ordinary" loop, *i.e.*, a transmission facility between the demarcation point at a customer's premise and a distribution frame (or its equivalent) in an ILEC central office. 47 C.F.R. § 51.319(a)(1).

[129] *See, e.g.*, *Deployment of Wireline Services Offering Advanced Telecommunications Capability, et al.*, CC Docket Nos. 98-147, 96-98, AT&T Petition for Reconsideration of the Third Report and Order in CC Docket No. 98-147, Fourth Report and Order in CC Docket No. 96-98 (filed Feb. 9, 2000); *Application by Southwestern Bell Telephone Company, and Southwestern Bell Communications Services, Inc. d/b/a Southwestern Bell Long Distance, Pursuant to Section 271 of the Telecommunications Act of 1996 to Provide In-Region InterLATA Services in Texas,* CC Docket No. 00-65, Pfau-Chambers Dec.; *Deployment of Wireline Services Offering Advanced Telecommunications Capability, et al.*, CC Docket Nos. 98-147, 96-98, AT&T Comments on the Second Further Notice of Proposed Rulemaking and Fifth Further Notice of Proposed Rulemaking (filed Oct. 12, 2000) ("AT&T *Fifth FNPRM* Comments"), AT&T Reply Comments on the Second Further Notice of Proposed Rulemaking and Fifth Further Notice of Proposed Rulemaking (filed Nov. 14, 2000) ("AT&T *Fifth FNPRM* Reply Comments"), AT&T Comments on the Third Further Notice of Proposed Rulemaking and Sixth Further Notice of Proposed Rulemaking (filed Feb. 27, 2001) ("AT&T *Line Sharing Recon. Order* Comments"), AT&T Reply Comments on the Third Further Notice of Proposed

(continued . . .)

2000 *Texas 271 Order*, the Commission stated that "AT&T's arguments merit prompt and thorough consideration" and "committed" to resolve this issue "expeditiously" in its reconsideration of the *UNE Remand Order*. *Texas 271 Order* ¶ 328. In August of 2000 and January of 2001, the Commission again recognized the need to address the issue of access to the unified loop.[130] Once again, the Commission "committed to resolving [it] expeditiously," stating that while "we acknowledge that in the *Texas 271 Order* we indicated that we would address some of these issues in our reconsideration of the *UNE Remand Order* [, w]e now find, however, that we have a more extensive record on these issues elsewhere, and as a result, intend to discuss them further in more recently initiated rulemaking proceedings." *Line Sharing Recon. Order* ¶ 25.

The "extensive" record in those proceedings clearly shows that the CLECs seek nothing more than the "loop" functionality – not "packet switching" – and that CLECs are severely impaired in the absence of access to the unified loop UNE. It is critical that the Commission finally and properly resolves this issue now, because the lack of a decision has continually clouded competitors' ability to develop market entry plans and also provided ILECs with additional ability to corner the market on DSL-based services. The competitive effect of this regulatory delay has been severe. When AT&T first brought this issue to the Commission's attention, the ILECs had fewer than 500,000 DSL customers. They now have over six times as

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(. . . continued)
Rulemaking and Sixth Further Notice of Proposed Rulemaking (filed Mar. 13, 2001) ("AT&T *Line Sharing Recon. Order* Reply Comments").

[130] *Advanced Services Recon.* Order ¶ 122; *Line Sharing Recon. Order* ¶ 25.

many. Moreover, the ILECs' DSL customers are typically required to use the ILECs' voice service, effectively walling those customers off from competition for voice services.[131]

Just as important, requiring ILECs to unbundle the unified loop, including cases where an incumbent has incorporated electronics into the loop at a remote terminal, is necessary to meet the Commission's goals to spur *both* facilities-based entry *and* the deployment of advanced telecommunications capability. The biggest impediment to competitors' deployment of broadband services today is the ILECs' monopoly control over the local loop. Thus, the ILECs' control over loops does not merely affect CLECs' ability to compete in the provision of voice services; rather, it extends to *every* service that can be provided over the loop functionality, including the telecommunications inputs to DSL-based services.[132]

The huge record amassed to date already demonstrates unequivocally that competitors cannot deploy such services efficiently or economically without access to the entire, or "unified," loop element. Thus, their ability to offer such services is clearly impaired in the absence of that element, and the lack of access to the unified loop will squelch both competition for, and growth of, broadband services, whether offered separately or in combination with voice services.

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[131] *See Line Sharing Recon. Order* ¶ 26 (not requiring ILECs to make their DSL service available when a competitor provides voice services on the low frequency of the loop).

[132] Even if the Commission adopts its tentative conclusion in its *Broadband NPRM* that broadband services are information services with a telecommunications transmission component, such a decision should have no impact on the right of CLECs to have unbundled access to the transmission component of that service. *See generally Broadband NPRM.* The ILEC facilities used to provide those services continue to satisfy the statutory definition of "network element," *see* 47 U.S.C. § 153(29), and carriers may access those elements to provide both "telecommunications service[s]," *see* 47 U.S.C. § 251(c)(3), and "information services through the same arrangement," *see Local Competition Order* ¶ 995.

Unbundling of the unified loop network element does not require the Commission to regulate advanced services. Rather, it only assures that competitors will be able to obtain unbundled access to a single network element – the local loop – so that they can provide both traditional voice and advanced telecommunications services in competition with the ILECs. The loop was, is, and for many years to come will remain the greatest source of the ILECs' monopoly power – and thus, the network element most critical to competitors' ability to provide service.

But the impairment analysis regarding competitors' need for loops to provide voice services does not begin to scratch the surface of the impairments that result from the ILECs' deployment of more advanced loop electronics in their outside plant. Over the past several years, the ILECs have pushed fiber feeder and more sophisticated loop electronic equipment further toward the customer's doorstep. These initiatives have increased the efficiency with which ILECs can utilize the transmission capacity of local loop facilities. At the same time, the ILECs have intensified their lobbying efforts to overturn fundamental unbundling obligations related to the local loop, even as the loop has become increasingly essential to the development of local competition.

As part of this effort, the ILECs have suggested that their DSL initiatives are somehow unique in their application of technology, and that these initiatives should therefore be subject to different rules from those imposed by the 1996 Act. That is untrue, both factually and legally. The ILECs' DSL regulatory arguments are little more than a marketing campaign that highlights the fact that the ILECs are: (1) upgrading their existing deployment practices to employ more sophisticated transmission capabilities (including the use of voice/data cards to facilitate ADSL services); (2) deploying more fiber optic cable deeper into their networks; and (3) supporting both voice and data service using a single network architecture. But contrary to the impression

the ILECs would create, these developments are not revolutionary. Moreover, the ILECs completely ignore the fact that the specific network implementation they have chosen reduces competitive access to customers' loops.

First, the ILECs' network upgrades are nothing more than the logical extension of network architecture capabilities that were available long before passage of the 1996 Act.[133] DLC, fiber, and the basic technology used to provide DSL-based services have all been available for many years. Although the ILECs' decision to deploy these additional capabilities has created the potential for new and beneficial services and opportunities for the parties who use their networks, the ILECs have mounted an increasingly aggressive public campaign to create walls around these upgraded transmission facilities to assure that they alone will benefit from them – even though the record is crystal clear that no single competitor or group of competitors could possibly afford to provide alternative functionalities on their own or to access the new functionalities in the manner the ILECs have offered.

Second, the ILECs fail to explain that the particular network architecture they are implementing makes it increasingly difficult for CLECs to obtain access to customers' individual loops. As a result, if competitors are not permitted to access unified loops, their ability to provide facilities-based alternatives to the incumbents' services will be significantly reduced.

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[133] NGDLC projects such as SBC's Project Pronto, like SBC's "traditional" network, rely upon the exact same advantages that can only accrue to a protected monopoly network built over decades with the revenues of a captive rate base. Moreover, SBC itself has proclaimed that all the costs of Project Pronto can be justified based on projected cost savings alone. *See supra* Part II(B). Indeed, it is telling in this regard that no ILEC has ever implemented such a project outside of its own franchised territory on a broad scale.

Part 1 of this subsection demonstrates that nothing about the NGDLC (or "unified" loop) architecture being installed by the ILECs changes either (1) the basic characteristics of the loop element or (2) the CLECs' right to provide any telecommunications service by accessing a unified loop as an unbundled element.

In Part 2, AT&T shows why, as a factual and technical matter, the equipment associated with a NGDLC loop is part of the unified loop element. In this regard, it is critical to recognize that the "next generation" upgrades that are currently taking place are integral to – not separate and apart from – the ILECs' existing monopoly local loop plant. AT&T also identifies the minor rule changes necessary to assure that the unified loop will in fact be unbundled. This requires correction of the Commission's factual error in excluding DSLAMs – which provide only a transmission functionality – from the "attached electronics" that are part of the definition of the local loop element, and the parallel error in including DSLAMs within the definition of packet switching.

In Part 3, AT&T responds to the Commission's request for detailed information that identifies "precisely the impairment facing requesting carriers" if they are not permitted to access the unified loop as a UNE. *Notice* ¶ 2. Critically, all of the impairments relating to copper loops described in Part IV(A) above apply to carriers that seek access to unified loops. But the impairment relating to DSL-based services goes much deeper. Most of that information was previously presented to the Commission in AT&T's comments and reply comments in several proceedings, including the *Texas 271 Order*, the *Fifth FNPRM*, and the *Line Sharing Recon. Order*. Those facts demonstrate none of the proposed options, *i.e.*, RT-based collocation, access to all-copper loops, or pure facilities-based alternatives provides a practical or economic mass-market entry strategy.

Part 3 also provides additional detail showing the utter practical and economic infeasibility of ILEC proposals to provide competitors with access to copper subloops at remote locations. Collectively, the impairments that competitors face conclusively demonstrate that competitors have absolutely no viable alternative to ILEC loops. Thus, there can be no dispute that failure to require unbundling of unified loops would limit customers who want voice and DSL-based services provided on the same line to the ILEC alone – an outcome that is entirely at odds with the text and purpose of the Act.

Thus, it is essential that the Commission act here in a manner that advances competition rather than rewards the incumbents. Although a few state commissions, such as those in Illinois and Texas, have taken the initiative to resolve the "unified" loop element issue,[134] there are still outstanding issues pending a Commission decision on the matter. Moreover, a large majority of other state commissions have not yet provided any resolution and await guidance from this Commission – guidance that is long overdue.[135] Without the expedited establishment of a

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[134] *Covad Communications Company and Rhythms Links, Inc. Petition for Arbitration Pursuant to Section 252(b) of the Telecommunications Act of 1996 to Establish an Amendment for Line Sharing to the Interconnection Agreement with Illinois Bell Telephone Company, d/b/a Ameritech Illinois, and for an Expedited Arbitrated Award on Certain Core Issues*, Consolidated Docket Nos. 00-0312, 00-0313, Arbitration Decision on Rehearing at 35 (Ill. Commerce Comm'n Feb. 15, 2001) ("Illinois Arb. Order") (determining that Ameritech-IL must provide competitive LECs with nondiscriminatory access, at just and reasonable rates, to Project Pronto UNEs) (subsequent history omitted); *Petition of Rhythms Links, Inc. Against Southwestern Bell Telephone Co. for Post Interconnection Dispute Resolution and Arbitration Under the Telecommunications Act of 1996 Regarding Rates, Terms, Conditions and Related Arrangements for Line Sharing*, Docket No. 22469, Revised Arbitration Award at 69 (Tex. P.U.C. Sept. 21, 2001) ("*Texas II*") (finding that SBC must provide CLECs with UNE loops from the demarcation point at the customer's premises to the terminal (port) on the OCD in the central office, including the associated electronics at the RT and CO).

[135] *See, e.g., Joint Petition of AT&T Communications of New York, Inc., TCG New York Inc., and ACC Telecom Corp. Pursuant to Section 252(b) of the Telecommunications Act of 1996 for*
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uniform national baseline for unbundled access to ILECs' "unified" loops, CLECs will be forced to contend with a patchwork of state-by-state regulation.[136] In addition, clear federal rules regarding a "unified" loop will reduce the likelihood that the ILECs will be able to succeed in their attempts to hold some states hostage, as SBC has attempted to do in Illinois.[137]

1. Implementation of NGDLC Loop Architecture does not Change any of the Fundamental Legal or Policy Principles that Guide the Commission's Analysis of the Loop Network Element.

The Commission asks whether it should require ILECs to provide unbundled access to a single "unified" loop network element when the ILECs deploy next generation network facilities. *Notice* ¶ 49. The simple and emphatic answer is yes. The record is replete with evidence that CLECs are severely impaired in their ability to provide both voice and advanced data services without access to this network functionality. Thus, they are entitled to unbundled access to the entire loop transmission functionality between customers' premises and the ILEC central office, regardless of the loop architecture deployed by that incumbent. Indeed, contrary to the skillfully crafted public relations campaigns of the ILECs, the access competitors seek is *not* an advanced

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Arbitration to Establish an Interconnection Agreement with Verizon New York Inc., Case No. 01-C-0095, Order Resolving Arbitration Issues at 61-62 (July 30, 2001).

[136] The Supreme Court has made clear its view that national unbundling rules "administered by 50 independent state agencies is surpassing strange." *Iowa Utils. Bd.* v. *FCC*, 119 S.Ct. 721, 730 n.6 (1999).

[137] Edie Herman, *Communications Daily* at 4 (Mar. 20, 2001) (regarding SBC Chairman Edward Whitacre's Letter to Congress threatening to withdraw its retail DSL offering in Illinois instead of complying with the Illinois Commerce Commission's requirement to provide access to the Project Pronto UNE). *See also Communications Daily* at 8 (Mar. 22, 2001); *Communications Daily* at 6-7 (Mar. 29, 2001); and Herb Kirchoff, *Communications Daily* (Mar. 30, 2001).

service, but is, instead, access only to efficient transmission capacity between customers' premises and the CLECs' telecommunications networks.

In the 1996 Act, Congress required ILECs to provide requesting carriers with access to "a facility or equipment used in the provision of a telecommunications service," including all "features, functions, and capabilities that are provided by means of such facility or equipment,"[138] subject to considerations of technical feasibility. *See* 47 U.S.C. § 153(29); *see also* 47 C.F.R. § 51.319(a)(1)*; Local Competition Order* ¶¶ 379-381; *Advanced Services Order* ¶ 53. Consistent with the "impair" standard, and because "[*u*]*sing the loop to get to the customer is fundamental to competition,*"[139] the Commission has consistently determined that ILECs must provide local loops on an unbundled basis to requesting competitive carriers.[140] The loop clearly remains "a natural monopoly." *ASCENT* v. *FCC*, 235 F.3d 662, 663 (D.C. Cir. 2001). Thus, CLECs' ability to obtain unbundled access to the local loop remains paramount in any effort to foster local competition. Without access to loops, and unless freed from constraint on the

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[138] 47 U.S.C. § 153(29) (defining a "network element"); 47 U.S.C. § 251(c)(3) (requiring incumbent LECs to provide unbundled access to network elements); *see also UNE Remand Order* ¶ 175 ("[t]he definition of a network element is not limited to facilities, but includes features, functions, and capabilities as well").

[139] *Line Sharing Order* ¶ 30 (emphasis added).

[140] *Local Competition Order* ¶ 377 (access to unbundled local loops is "critical to encouraging market entry"); *UNE Remand Order* ¶ 200 (access to the full capabilities of incumbent LEC's loop plant will "promote the rapid development of competition and bring the benefits of competition to greater numbers of consumers. Access to unbundled loops will also encourage competition to provide broadband services. We are convinced that greater, not fewer, options for procuring loops will facilitate entry by competitors, and that Congress intended for competitors to have these options available. We find that the benefits of uniform loop unbundling outweigh the costs of creating a patchwork regime in which incumbents will seek to litigate whether particular loops should be unbundled or where an alternative to the incumbent LEC's loop is arguably substitutable.")

communications carrying capacity of the loops, many CLECs will be unable to provide competitive services to their customers and will have little prospects of profitability – except in niche markets the ILECs have abandoned.

The Commission's legal and policy principles that have defined the local loop as an unbundled network element also necessarily guide its analysis of the "unified" loop element here. For the past two years, the ILECs have made the "unified" loop element issue much more complicated than it needs to be. They have raised irrelevant policy arguments, invoked selective and out-of-context quotations from Commission orders, conjured up imaginary technical difficulties, and otherwise sought to confuse the issues. But the extensive record demonstrates that this is not a complex or unresolved issue. In simple terms, it is about the ILECs' continuing monopoly bottleneck over the local loop, the desire of multiple requesting carriers to be able to provide both traditional voice grade and DSL-based telecommunications services over those loops in competition with the ILECs,[141] and the competing carriers' utter inability to offer those services (and even more innovative services based on the DSL transmission capacity) unless the ILECs provide unbundled access to their bottleneck loops.

The relevant arguments on this issue have been fully briefed before the Commission for over 18 months, and they demonstrate that the Commission has already defined all of the fundamental principles that establish the appropriate treatment of the unified loop. First, the Commission has determined that the essential function of the loop is to provide *transmission functionality between a customer's premises and an incumbent LEC's central office*, not, as the

[141] *See ASCENT*, 235 F.3d at 668 ("As the Commission concedes, Congress did not treat advanced services differently from other telecommunications services").

ILECs would have it, between a customer's premises and an intermediate point such as a remote terminal.[142] Second, the Commission has repeatedly recognized that the local loop, like all network elements, is defined by its functionality and is *not limited to particular services or technologies.*[143] Indeed, the Commission has recognized that such service- and technology-based distinctions would "encourage incumbent LECs to 'hide' loops from competitors." *Local Competition Order* ¶ 383; *see also Advanced Services Order* ¶ 53; *Line Sharing Reconsideration Order* ¶ 10.

The record further shows that there is nothing about the NGDLC-loop architecture now being installed by the ILECs that changes either the basic characteristics of a loop ("unified" or otherwise) or CLECs' rights to access a DLC-equipped, fiber-fed loop as an unbundled element (or to access a DLC-equipped, fiber-fed loop for line sharing or line splitting purposes).[144]

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[142] *See* 47 C.F.R. § 51.319(a)(1) ("[t]he local loop network element is defined as a *transmission facility* between a distribution frame (or its equivalent) in an incumbent LEC central office and the loop demarcation point at an end-user customer premises") (emphasis added).

[143] *See, e.g., UNE Remand Order* ¶ 167 ("[o]ur intention is to ensure that the loop definition will *apply to new as well as current technologies*, and to ensure that competitors will continue to be able to access loops as an unbundled network element as long as access is required") (emphasis added); *Local Competition Order* ¶ 292 ("section 251(c)(3) requires incumbent LECs to provide requesting carriers with all of the functionalities of a particular element, so that requesting carriers can provide *any telecommunications services* that can be offered by means of the element") (emphasis added); *Advanced Services Order* ¶ 53 ("section 251(c)(3) does not limit the types of telecommunications services that competitors may provide over unbundled elements to those offered by the incumbent LEC") (quoting *Local Competition Order* ¶ 382).

[144] *See* AT&T *Fifth FNPRM* Comments at 44-50, AT&T *Fifth FNPRM* Reply Comments at 39-54, AT&T *Line Sharing Recon. Order* Comments at 2-4, 7-14, AT&T *Line Sharing Recon. Order* Reply Comments at 3-12. The Commission also asks whether it should retain the line sharing network element and if so, whether it should modify this requirement or the existing definition of line sharing. *Notice* ¶ 53. AT&T has fully set forth its position regarding line sharing in other proceedings that have been incorporated into this proceeding. *See, e.g.*, AT&T *Line Sharing Recon. Order* Comments; AT&T *Line Sharing Recon. Order* Reply Comments. Although AT&T will not reiterate its line sharing arguments here, it does note that the
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NGDLC-enhanced loops provide *exactly* what "traditional" loops have always provided: transmission functionality for telecommunications signals between customers' premises and the serving incumbent LECs' central offices.

In 1996, 1998, and again in 1999, the Commission had no difficulty in determining that the ILECs' loop unbundling obligations extended beyond copper loops, or the copper portion of a fiber-fed loop.[145] For example, the Commission determined that competing carriers are free to use unbundled loops to provide high-bit-rate services such as ADSL,[146] and that the loop element should be defined in functional terms, so that it *necessarily includes* integrated digital loop carrier technology or similar remote concentration devices. *Local Competition Order* ¶¶ 383-385; *New York 271 Order* ¶ 271. From the outset, the Commission made plain its understanding that "section 251(c)(3) requires incumbent LECs to provide requesting carriers with all of the functionalities of a particular element, so that requesting carriers can provide *any telecommunications services* that can be offered by means of the element." *Local Competition Order* ¶ 292.

Despite this clearly defined statutory framework, the Commission now asks "whether the 'at a minimum' language in section 251(d)(2) can support a distinction between unbundling

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implementation of next-generation loop architecture does not change any of the fundamental legal and policy principles that underlie the Commission's line sharing rules. *See id.*

[145] *See UNE Remand Order* ¶ 175; *Local Competition Order* ¶ 383; *Advanced Services Order* ¶ 54; *New York 271 Order* ¶ 271. *See also* AT&T *Fifth FNPRM* Comments at 38, AT&T *Fifth FNPRM* Reply Comments at 44-45, AT&T *Line Sharing Recon. Order* Comments at 10-11, AT&T *Line Sharing Recon. Order* Reply Comments at 5-6.

[146] *Local Competition Order* ¶¶ 381-382; *Advanced Services Order* ¶ 54; *UNE Remand Order* ¶ 190.

facilities used for analog voice telephony, and those used for advanced technologies." *Notice* ¶ 24. It cannot. Neither the Act nor the Commission's prior rulings regarding the loop network element make any distinction between the transmission functionality used to provide DSL-based services and that used to provide "traditional" voice services between the customer's premises and the central office. Nor would sound public policy permit such a distinction, because traditional voice service can be provided in the transmission path supported by DSL technology.

Indeed, no ILEC is arguing that it may deny a competitor seeking to provide traditional voice services over its NGDLC facilities from gaining unbundled access to fiber-based, DSL-capable loops at the central office. In fact, SBC's operating affiliate, SWBT, has readily acknowledged its obligation to provide competitors seeking to provide *voice* services over its Project Pronto facilities with unbundled access to hybrid fiber-copper loops.[147] These admissions, although fully consistent with the Commission's determination that loop unbundling obligations necessarily extend to hybrid fiber-copper loops,[148] cannot be squared with the ILECs' refusal to provide a "unified" loop element.[149] Pursuant to the Commission's technology- and service-neutrality principles, the ILECs' obligation to provide competitors with unbundled access to hybrid fiber-copper loops at the central office for ISDN, DS-1 and voice services must

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[147] *In the Matter of the Determination of Prices, Terms, and Conditions of Line-Splitting and Line-Sharing,* Missouri PSC Case No. TO-20001-440; Hearing Tr., at 543-44 ("MOPSC Hearing Tr."). In fact, a RT DSLAM is as much a part of the transmission pathway for the voice communication as it is for the DSL connection. Similarly, SWBT has also indicated that competitors can access DS-1 and ISDN loops over Project Pronto facilities in Missouri. MOPSC Hearing Tr. at 551-552.

[148] *See, e.g., Local Competition Order* ¶ 383.

[149] It simply cannot be that the RT DSLAM functionality *is* properly part of the loop when the loop is used for voice service but is *not* part of the loop when the loop is used for DSL service.

extend to the telecommunications signals that competitors need to provide DSL-based services over those same loops.

Thus, the appropriate legal question here is whether CLECs may access the local network elements that have the capability of supporting both voice and DSL-based services. But the answer set forth by Congress in the 1996 Act is well-settled. The DSL/voice service distinction the Commission ponders is not permissible under the Act. Both transmission services are "telecommunications services" and thus both are expressly covered by the unbundling obligations of section 251 – as the Commission has already held. *See, e.g., Advanced Services Order* ¶ 35; *see also ASCENT*, 235 F.3d at 668. Equipment manufacturers, at the urging of telecom service providers, have continued to seek means to improve the transmission efficiencies of costly conductors (wires or fibers) placed between two points but have conformed their designs to meet the direction of the incumbents – their largest customers. These transmission gains are largely accomplished by making the communications signal in the conductors more distinguishable from environmental noise and by reducing the amount of "dead time" on the conductor via multiplexing.[150] Neither of these activities delivers "new" or "innovative" service but rather are a continued evolution of good transmission system engineering. Thus, it is erroneous to equate efficient use of resources – a fiduciary responsibility of a monopoly – with service innovation.

The Commission also asks whether it should "exempt from an unbundling obligation any facilities that an incumbent LEC constructs after a set point in time," and whether such an

[150] The former is accomplished by digitization of the signal using encoding that permits error detection and correction and the latter is accomplished through multiplexing and by better modulation techniques of the carrier (*i.e.*, using more analog spectrum or converting to optical).

exemption should apply only to certain facilities, such as fiber loops. *Notice* ¶ 31. There is no basis on which to establish a sunset date for any unbundling obligations for loops. Indeed, the facts on the record specifically reinforce the need to retain all such requirements. Sunsetting the obligation to unbundle a loop – whether fiber or copper – would be entirely inconsistent with the consistent recognition that the subscriber loop is an "essential facility" to which competitors need access to provide service. More dangerously, it draws a conclusion about the future state of telecommunications markets without any factual basis and would only serve to defer, rather than accelerate, investment in loop plant modernization. In the 1996 Act, Congress determined that access to the ILECs' loops was necessary to the development of a competitive local telecommunications marketplace. The Commission has reinforced these sentiments, finding that the Act's market-opening requirements are necessary because "the incumbent LECs have economies of density, connectivity and scale; traditionally, these have been viewed as creating a natural monopoly." *Local Competition Order* ¶ 11.

Policies that recognize the essential nature of the ILECs' local networks remain as sound today as they were in 1996. Unless competitors have access to the subscriber loop, and the transmission throughput of the loops, the ILECs' continued bottleneck control over essential network elements will prevent new entrants from gaining a foothold in the market and giving consumers a choice of local telecommunications providers.

Given the essential nature of the local loop, it is impossible to predict any set time when access to the loop will no longer be vital to local telecommunications competition. Rather, a decision to sunset an unbundling obligation applicable to any ILEC facilities – regardless of whether they are copper or fiber, and regardless of when the ILEC constructs such facilities – can be considered only after the development of a much fuller record. Further, the suggestion

that certain loops might be deregulated, while other loops remain subject to unbundling requirements (*Notice* ¶ 24) would result in an excessively complicated regulatory scheme that would be an administrative nightmare to monitor. Such an approach would undoubtedly result in constant litigation that would lead to inconsistent results, requiring competitors to navigate a jumbled patchwork of requirements in order to offer service in any particular area. Finally, sunsetting unbundling obligations would be inconsistent with the Commission's own costing models for an efficient network, which are based on the assumption that ILECs should be installing fiber in local loops in order to provide service efficiently.[151]

In any event, such approaches are unnecessary to spur incumbents' investment in new facilities.[152] As recently reiterated by the Commerce Department,[153] the problem with broadband expansion is *demand*, not supply. The best way to encourage demand is to open incumbent LECs' monopoly facilities up for wholesale use, making them available to a wider customer base.

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[151] *See USF Inputs Order* ¶¶ 77-79; *USF Platform Order* ¶¶ 68-70.

[152] Fiber loop technology and, more specifically, fiber-copper hybrid loops are not new. Indeed, according to the Commission's own ARMIS data for Tier I companies, working channels on fiber already represented almost 4% of the channels in 1990, more than doubling to 9% by 1996 and then more than doubling again by 2000 (21.7%). *See* ARMIS Database Table: 43-07 - II, Transmission Facilities, all RBOCs.

[153] U.S. Department of Commerce, National Telecommunications & Information Administration, *A Nation Online: How Americans Are Expanding Their Use of the Internet* (Feb. 2002) (available at http://www.ntia.doc.gov/ntiahome/dn/nationonline_020502.htm).

2. With only a Minor Modification, the "Unified" Loop Element already Fits within the Commission's Definition of the Local Loop.

The Commission asks whether the recognition of a single "unified" loop network would require that it "explicitly incorporate the functionality of additional equipment" into the definition of loop. *Notice* ¶ 49. It need not, because, as the record demonstrates,[154] it has already done so. The Commission's own definition of local loops includes all "attached electronics" to the loop, except for those used to provide advanced data services, "such as [DSLAMs]." 47 C.F.R. § 51.319(a)(1). However, as shown below, the exclusion of DSLAMs is based on an error of fact – *i.e.*, the mistaken assumption that DSLAMs perform packet switching functions – that the Commission itself has implicitly recognized in other proceedings.[155]

Consequently, only relatively minor definitional changes are needed to accommodate the recognition of the "unified" loop as a network element in the Commission's existing rules. First, the Commission must remove all references to DSLAMs in the current definitions of packet switching and loops, because DSLAMs do not "switch" anything. Second, the Commission should either eliminate the exception after the reference to "attached electronics" in the loop definition or modify the exception to state that it only applies to electronics used to "perform packet switching."

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[154] *See, e.g.*, AT&T *Line Sharing Recon. Order* Comments at 7-14 ; AT&T *Line Sharing Recon. Order* Reply Comments at 3-12; *UNE Remand Order* ¶ 175 (finding that the definition of a network elements include not only the facilities itself, but also the features, functions and capabilities of the facility).

[155] For example, in the *UNE Remand Order*, the Commission found that packet switching involves the "routing [of] individual data units based on address or other routing information . . . ." *UNE Remand Order* ¶ 302. Despite this definition, however, it mistakenly classified the DSLAM as part of the packet switching network element rather than the loop element. *Id.* ¶ 303.

The main confusion caused by the *UNE Remand Order* resulted from the ILECs' often-successful attempts to expand a minor exemption to undermine a broader and more important rule. Specifically, the ILECs attempted to extend an exemption that reflected competitors' ability to provision *stand-alone packet switching* into a license to deny competitors unbundled access to the full features, functions, and capabilities of the *loops* between central offices and customer premises that are necessary to make competitors' switches useful.[156]

In particular, the ILECs seized upon the Commission's factual error relating to DSLAMs and claimed that the Commission's rules prohibit CLECs from accessing at the central office the high frequency signals from any loop that was connected to a remote DSLAM, because that represented access to "packet switching." Thus, the ILECs disingenuously attempted to characterize the *entire NGDLC architecture* as including "packet switching functionality that this Commission has determined is generally not subject to unbundling," except in a limited set of circumstances.[157] Indeed, some ILECs even claimed that *all* of the equipment used to upgrade their network between the customers' premises and the equivalent of a distribution frame at its central office – "the NGDLC and its line card, the inseparable fiber connection to the central office, and the [optical concentrator device ('OCD')]" – together constitute a separate "packet network" that provides packet switching functionality.[158]

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[156] This is particularly important, because the Commission made its decision despite its finding that the lack of access to packet switches would "impair" requesting carriers from competing for residential and small business customers. *UNE Remand Order* ¶ 306. *See also Project Pronto Waiver Order* ¶ 15; *Broadband NPRM* ¶ 11 n.19.

[157] *See, e.g.*, SBC *Line Sharing Recon. Order* Comments at 24; Verizon *Line Sharing Recon. Order* Comments at 2 (describing DLC-equipped fiber-fed loops as providing "end-to-end packet transport").

[158] *See id.*; SBC *Line Sharing Recon. Order* Comments at 28, 30.

The undisputed factual record completely rebuts the ILECs' fanciful and erroneous claims, and has been before the Commission for at least eighteen months. In short, there is absolutely no basis for any assertion that any DLC system (including NGDLC) performs any switching functionality. DLC systems convert analog signals into digital signals, perform concentration functions, multiplex multiple signals onto a single facility and may perform protocol conversion and buffering functions for purposes of forwarding telecommunications signals through a carrier's network, based on the network architecture it has deployed.[159] Whether a particular DLC architecture is designed to limit loop transmissions to 64 kbps time slots or is designed to unlock the full transmission capacity of the associated facility, the functionality of that facility is *exactly the same*. The only significant differences are related to the efficiencies that can be achieved for the transmission medium that is used.

The Commission has, from the outset, recognized that DLC functionality, including the associated multiplexing and demultiplexing needed to get traffic on and off of high-capacity facilities, is part of the *loop* element. *See, e.g.*, *Local Competition Order* ¶ 383. This is entirely consistent with the Commission's loop definition, because the principal reason for deploying DLC is to increase network efficiencies in the loop plant, not to perform different (non-transmission related) network functions. Next generation remote terminal architectures are simply a more efficient way of implementing the essential functionality of the loop.

As discussed above, the Commission has correctly recognized that the "loop" is simply a transmission pathway between a customer's premises and the ILEC's central office, regardless of the underlying technology the ILEC employs to make the physical connections between those

[159] *See, e.g., Line Sharing Order* ¶ 69 n.152.