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BEFORE THE

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WASHINGTON, D.C.

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Implementation of the Local Competition Provisions in the Telecommunications Act of 1996	)	CC Docket No. 96-98
Interconnection between Local Exchange Carriers and Commercial Mobile Radio Service Providers	)	CC Docket No. 95-185

REPLY COMMENTS OF TIME WARNER TELECOM

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Time Warner Telecom Holdings Inc. d/b/a Time Warner Telecom ("TWTC"), by its attorneys, hereby files these reply comments in response to the Second Further Notice of Proposed Rulemaking in the above-captioned proceedings.

I. INTRODUCTION AND SUMMARY

In comments filed in this proceeding, the ILECs urge the Commission to limit the availability of UNEs to circumstances in which, in essence, no other wholesaler suppliers exist and in which requiring CLECs to construct the network element would drive CLECs out of business. This approach, the ILECs assert, is essential if the Commission hopes to establish the proper incentives for efficient investment in alternative network facilities that will deliver true consumer benefits. This simplistic message may have some abstract appeal to those with no experience in managing a facilities-based competitive local entrant. But companies like TWTC that have risked hundreds of millions of dollars on building their own facilities have learned that the broad availability of UNEs is absolutely essential to the survival of just the competition that the ILECs claim to champion.

Congress understood the need for broad availability of UNEs when it passed the unbundling provisions of the 1996 Act. As many parties have shown, both the terms of those provisions and their legislative history demonstrate this fact. Moreover, the policy papers submitted by CLEC interests in this proceeding explain why, as a matter of economic theory, it is sound policy to err on the side of retaining the unbundling requirements for a particular part of the network rather than, as the ILECs urge, erring on the side of eliminating UNEs. While this does not necessarily mean that all of the UNEs that were on the Commission's original list should remain, it does mean that the Commission should construe Section 251(d)(2) to require clear evidence that the wholesale market for an element is functioning efficiently before removing an element from the list of UNEs.

TWTC's experience has borne out the wisdom of this approach. Few companies have risked more on constructing facilities-based competitive local networks than TWTC. TWTC has entered as a facilities-based CLEC by deploying its own switches, loops and SONET rings in sixteen markets across the country and plans to enter three more by the end of the year. TWTC has done so notwithstanding the availability of UNEs at forward-looking prices in most of the states in which it operates. Of course, there are some portions of the network that require much greater economies of scale and scope than TWTC possesses, or will soon possess, to justify self-provisioning. This is the case with directory assistance ("DA"), signaling networks and associated databases ("signaling") and, in some cases, with loops. In these situations, TWTC's preferred approach has been to purchase the functionality from a wholesaler other than its most formidable competitor, the ILEC. While this has never been possible for loops, for several years TWTC purchased DA and signaling from third-party wholesalers. During that time, however, TWTC

was unable to obtain service reliability and prices that are comparable to the ILECs' UNE offerings. The reliability problems, which were a more serious issue from TWTC's perspective, were in some cases caused by the vendors' inability to obtain nondiscriminatory access to necessary inputs of production controlled by the ILECs (such as accurate directory list information). In other cases, the ILECs' UNE offerings were more reliable because of legacies from its monopoly status (such as ubiquitous and redundant SS7 networks). Regardless of the cause, however, TWTC could not continue to rely on third-party vendors for these services because they prevented TWTC from matching or exceeding the quality of service offered by the ILEC (something TWTC can achieve for the parts of the network it self-provisions). TWTC had no choice, therefore, but to begin purchasing DA and signaling as UNEs from the ILECs.

TWTC's experience demonstrates three fundamental principles that the Commission must adhere to when analyzing the wholesale market for a network element. First, loops, DA and signaling must be available as UNEs on a national basis.

Second, and more broadly, the mere presence of non-ILEC wholesale providers of a particular network functionality and the apparent willingness of some CLECs to purchase from those third-party wholesalers should not be enough to remove a functionality from the list of UNEs an ILEC must offer. Rather, the Commission should examine the extent to which third-party wholesalers continue to rely on ILECs for essential inputs of production (such as directory lists). The Commission should also assess the extent to which CLECs are terminating their service relationships with third-party vendors and purchasing UNEs.

Third, the fact that some large CLECs are able to self-provision one part of the network is not proof that self-provisioning that piece of the network is possible or even efficient for all kinds

of CLECs. For example, entrants into the local market like AT&T already have enough long distance traffic volume to justify deployment of their own DA. But smaller facilities-based entrants that have focused on constructing efficient transport, switching and loop network functionalities and that have small amounts of traffic often cannot justify self-provisioning DA. Given the significant potential benefits of small, efficient CLECs, it is critical that the UNE rules account for their needs.

II. THE COMMISSION MUST INTERPRET SECTION 251(d)(2) WITH THE UNDERSTANDING THAT BROAD AVAILABILITY OF UNES IS A NECESSARY PRECONDITION OF FACILITIES-BASED COMPETITION.

Notwithstanding the ILECs' comments in this proceeding, TWTC's experience has shown that the broad availability of UNEs at TELRIC-based prices encourages, rather than discourages, facilities-based entry. Given the ILECs' incentives and opportunities to raise their rivals' costs when functioning as wholesale providers to their competitors, facilities-based entrants like TWTC rely on the ILEC for UNEs only when absolutely necessary. But the scarcity of capital available for investment in risky CLEC businesses, the massive scale and scope required to justify self-provisioning of certain parts of the network, the need to respond quickly to customer requests to extend service beyond the existing footprint of the CLEC's network, and the absence of a functioning wholesale market for almost any of the UNEs all leave facilities-based CLECs little choice but to rely on ILEC UNEs.

Congress fully understood that facilities-based entry was preferable to other kinds of entry when it passed the unbundling provisions of 1996 Act, but it also knew that UNEs must be made broadly available to entrants that have risked the huge sunk investment to build even part of a local telecommunications system. The Supreme Court has held that the Commission must

construe Section 251(d)(2) to establish some "limiting standard" as to when UNEs should be made available. See AT&T v. Iowa Utils. Bd., 119 S. Ct. 721, 736 (1999). That standard must account for "the availability of elements outside the incumbent's network" and may not assume that just "*any* increase in cost (or decrease in quality)" meets the necessary and impair standards. See id. at 734-735 (emphasis in original) But as many commenters have explained, notwithstanding the Supreme Court's narrow ruling, the language of Section 251(d)(2) can be easily construed to permit removal of a functionality from the list of UNEs only upon a demonstration that the wholesale market for that functionality is competitive. See, e.g., AT&T Comments at 20; MCI Worldcom Comments at 4; and Qwest Comments at 16. TWTC will not repeat those arguments here, except to point out that it is especially relevant to these reply comments, which focus on facilities-based entry and the need for loops, DA and signaling as UNEs, that Congress specifically required that BOCs provide a wide range of UNEs, including unbundled loops, DA and signaling as a condition to Section 271 approval. See 47 U.S.C. § 271(c)(2)(B)(iv), (vii) & (x). Moreover, the Commission has specifically found that Section 271 was passed to promote facilities-based competition.[1] Thus, Congress unquestionably contemplated that the broad availability of UNEs in general and of loops, DA and signaling more specifically were a necessary precondition to facilities-based competition.

The legislative history of the unbundling provisions further supports this view. In an often-quoted but highly revealing passage in the Joint Explanatory Statement, Congress explained

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1 See Application by SBC Communications Inc., Pursuant to Section 271 of the Communications Act of 1934, as amended, to Provide In-Region, InterLATA Services in Oklahoma, 12 FCC Rcd 8685, *Memorandum Opinion and Order*, ¶¶ 41-42 (1997) *aff'd* SBC Communications Inc. v. FCC, 138 F.3d 410 (D.C. Cir. 1998)

that "it is unlikely that competitors will have a fully redundant network in place when they initially offer local service, *because the investment necessary is so significant.* Some facilities and capabilities (*e.g.*, central office switching) will likely need to be obtained from the incumbent local exchange carrier as network elements pursuant to new section 251." Joint Explanatory Statement at 148 (emphasis added). While its observation about switching may not have been precisely accurate (TWTC and most other CLECs have found that local switching can be efficiently self-provisioned) the broader point is beyond dispute. Congress recognized that elements must be made available in order to "shift monopoly markets to competition as *quickly* as possible." House Rep. at 89 (emphasis added). Congress was not here referring to resale competition, but to the quick transition to facilities-based competition. UNEs were viewed as a necessary component of a facilities-based plan that would level the playing field for new entrants that do not have the legacy economies of scale and scope necessary to justify investments in certain UNEs.

In an attempt to frustrate the intent of Congress, the ILECs argue in their comments that the broad availability of UNEs at cost-based rates will discourage ILEC and CLEC facilities investment and innovation. The ILECs purport to be concerned that "meaningful competition," as Ameritech refers to it, will not develop unless the availability of UNEs is severely restricted under Section 251(d)(2). This is nonsense. As Commissioner Powell has observed, "[f]irms are economic actors, not moral beings."[2] The ILECs' only economic interest in this proceeding is to *prevent* the development of meaningful competition, and their pleadings are designed to achieve

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[2] Deployment of Wireline Services Offering Advanced Telecommunications Capability, CC Docket Nos. 98-147, 98-11, 98-26, 98-32, 98-15, 98-78, 98-91, *Memorandum Opinion and Order and Notice of Proposed Rulemaking* (rel. Aug. 8, 1998), Separate Statement of Commissioner Michael Powell at 2.

that goal. Of course, preventing meaningful competition means allowing the ILECs to continue to recover monopoly profits for existing services. The ILECs cannot actually be concerned about their own opportunities to innovate since they rarely risk investment in innovation (xDSL technology is over ten years old, for example, and the ILECs only began deploying it in response to CLEC xDSL offerings, offerings that were possible only because of the broad availability of UNEs). Indeed, the main cause of ILEC innovation is competitive entry, and it is the *unavailability* of UNEs that would discourage facilities-based CLECs from risking further investment in facilities and innovation. For the foreseeable future, most firms must focus such investment in certain parts of the network and in certain geographic areas. CLECs such as TWTC simply lack the resources and current or foreseeable customer base to replicate the entire ILEC network.

The policy papers submitted by the CLEC interests in this proceeding support the fundamental point that broad availability of UNEs is a prerequisite of facilities-based competition. Professor Kwoka, for example, points out that targeted entry by small, agile firms can deliver substantial increases in efficiency. See MCI Worldcom Comments, Kwoka Dec. ¶ 25 and n.3. An entrant that initially concentrates its resources on providing some network functionalities more efficiently than the ILEC must be allowed to provide other network functionalities on a par with the ILEC. As AT&T's economic experts explain, because "[i]ncumbent LEC networks are ubiquitous and network costs are largely fixed or sunk, incumbent LECs enjoy high economies of scale and scope that allow them to offer service at the lowest potential cost." AT&T Comments, Hubbard, Lehr & Willig Aff. at 9. If a CLEC is unable to achieve the same scale economies by self-provisioning the element, or obtaining the element from third-party sources, the CLEC will

experience higher costs than the ILEC and will be "impaired" in its ability to compete. Third-parties are able to provide certain services that might enable a facilities-based CLEC to fill-out its network, such as DA and signaling. But while these third-party providers may at some point in the future offer a viable substitute for ILEC UNEs, TWTC's experience (described in more detail in the next section) is that they currently provide more expensive, less reliable service. Furthermore, issues of quality are as important, possibly more important, than cost differentials to a new entrant, as it may cost more in the long-run to overcome a late start or to overcome customers' negative impressions of a particular carrier or a particular carrier's service. See MCI Worldcom Comments, Kwoka Dec. ¶ 34 (poor quality and unreliable service may compromise current business, and damage a CLEC's long-term reputation).

The FCC understood these principles when it established UNE rules in the Local Competition Order.[3] It explained that "incumbent LECs have economies of density, connectivity, and scale . . . . [T]he local competition provisions of the Act require that these economies be shared with entrants." Local Competition Order ¶ 11. The Commission noted that UNEs would assist new entrants to overcome the incumbents' legacy advantages. The Commission understood that some "local markets, now and even into the future, may not efficiently support duplication of all, or even some, of an incumbent LEC's facilities. Access to unbundled elements in these markets will promote efficient competition for local exchange services because, under the scheme set out in the 1996 Act, such access will allow new entrants to enter local markets by leasing the incumbent LECs' facilities at prices that reflect the incumbents' economies of scale and scope." Id.

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3 Implementation of the Local Competition Provisions in the Telecommunications Act of 1996, 11 FCC Rcd. 15499, *First Report and Order*, (1996) ("Local Competition Order").

¶ 232 (footnote omitted). Thus, this aspect of the Commission's discussion of UNEs in the Local Competition Order accurately reflected both Congressional intent and sound economic learning. Whatever else the Commission may do in this proceeding, it should reaffirm the general principle that UNEs are a necessary precondition to facilities-based entry. Indeed, severely limiting the availability of UNEs, as the ILECs recommend, would render any facilities-based entry plan an "all or nothing" proposition. In almost every case, investors would choose "nothing." The Section 251(d)(2) standards must be construed to avoid this result.

III. LOOPS, DIRECTORY ASSISTANCE AND SIGNALING SYSTEM NETWORKS MUST CONTINUE TO BE AVAILABLE AS UNES FOR FACILITIES-BASED COMPETITION TO CONTINUE TO DEVELOP.

It has become clear to TWTC that facilities-based CLECs will be seriously impaired if loops, including extended loops, DA and SS7 networks are not available on a national basis at prices based on forward-looking costs. Self-provisioning these elements is often inefficient. Moreover, even where third-party alternatives are available, they are inadequate substitutes.[4]

A. Loops Must Be Provided As A UNE On A National Basis.

Several of the ILECs have argued that loops should not be UNEs when connected to large business customers. But this would be very difficult to enforce and would likely significantly impair CLECs' ability to compete for large business customers.

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[4] The Commission has already determined that loops, signaling and DA are not proprietary. See Local Competition Order ¶ 388 (concluding that loops are not proprietary); ¶ 481 (signaling systems do not "present proprietary concerns with respect to the incumbent LEC"), ¶¶ 539-540 (finding that incumbent LECs generally did not raise a concern with respect to DA and DA databases, therefore conducting its analysis under the "impair" standard applicable to non-proprietary elements). These conclusions were not overturned by the Supreme Court and therefore need not be reconsidered in this proceeding.

Wherever possible, TWTC serves customers using its own loops. Thus, TWTC generally extends its fiber SONET ring to a large customer location, completely bypassing the ILEC's outside plant. However, this is not a feasible option if a customer does not have enough traffic to justify the expense of extending facilities to its location. There is also no functioning wholesale market for loops (microwave is still not an adequate substitute in most cases). Thus, TWTC must often purchase an ILEC's existing loop connection to the end user as a UNE. If that loop is connected to the ILEC central office in which TWTC is collocated, then the customer's traffic will pass over the loop to the TWTC SONET ring. If however the loop in question does not connect to a central office in which TWTC is collocated, then TWTC may try to obtain combined loop and transport from the ILEC (extended loops) to connect the customer to the ILEC network. TWTC could certainly serve more customers, however, if the Commission established extended loops as a UNE on a national basis. TWTC urges the Commission to do just that in this proceeding. At the very least, however, there can be little doubt that for all but the largest business customers, local loops must remain as UNEs.

Moreover, while self-provisioned loops can be efficient for some large customers, the ILEC proposal that loops be removed from the list of UNEs when connected to large customers would only harm competition. As a preliminary matter, large customers often seek service connections in many locations, some accessible to TWTC's own local loops and some not. In these cases, TWTC must rely on UNE loops to serve even large customers' locations beyond the reach of TWTC's network. Furthermore, some large customers purchase their service from several different carriers. Thus, while a customer may in the aggregate have a large enough volume of traffic to justify CLEC self-provisioned loops, one service order from a particular

customer may not be large enough to justify self-provisioned loops. Accordingly, if loops were removed from the list of UNEs for large customers, CLECs would be precluded from providing partial service to many large customers. Nor would it make sense to try to eliminate unbundled loops for large service orders. It is far more sensible to simply retain loops as UNEs for all customers until more ubiquitous alternative loop options exist.

B. DA Must Be Provided As A UNE On A Nationwide Basis.

Virtually all of the ILECs claim that DA need not be provided as a UNE because there are many competitive wholesale providers of DA service and CLECs can in any case easily self-provision this service. But this is simply not the case.

First, it is a measure of the fundamental dishonesty of the ILEC advocacy regarding UNEs that ILECs claim the DA market is competitive and yet the central reason why alternative DA providers cannot match the ILEC's UNE service is that the ILECs themselves withhold access to an essential input of production (subscriber list information) from their competitors. In this regard, third-party DA providers that are not "competing providers of telephone exchange service and telephone toll service" ("non-carrier third-party DA providers") are especially disadvantaged since they are unable to obtain database information pursuant to Section 251(b)(3). They must instead obtain the ILECs' information through other means, such as voluntary negotiation or via tariff. As INFONXX, one of the leading competitive DA providers,[5] explained in a recent *ex*

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[5] "INFONXX has 800 employees, operates four call centers, handles 75-100 million calls per year and provides service in 70 major markets around the country." See *Ex Parte* filing by INFONXX, "The Promise of Section 222(e): Full and Fair Competition for the Provision of Competitive Directory Assistance" at 1 (March 18, 1999) ("INFONXX *Ex Parte*").

parte filing, ILECs "continue to deny [non-discriminatory] access to INFONXX and seek avenues of delay when INFONXX presses for such access in state regulatory proceedings." INFONXX *Ex Parte* at 1. INFONXX has (to date unsuccessfully) asked the FCC to permit it to gain access under Section 251(b)(3). Without such access on non-discriminatory terms, INFONXX and other non-carrier third-party DA providers are forced to pay "well above the rates charged to [carriers obtaining DA services pursuant to section 251] and to rely on less accurate data." Id. at 4.

TelTrust further explains that "ILECs continue to hold the lion's share of local customers, which gives them a definite competitive advantage in the market for DA and operator services." TelTrust Comments at 7-8. While ILEC databases are updated daily or in real-time, non-carrier third-party DA providers' databases are updated less frequently even if the information is obtained directly from the ILEC. More often than not, however, third-party DA providers do not obtain their information from ILECs either because they are denied the information (and unable to demand it pursuant to Section 251) or because the asking price is too high. Third-party vendors instead rely upon various publicly available source materials (*e.g.*, white pages). These sources are not nearly as accurate or updated as frequently as ILEC databases.[6] As a result, when a subscriber to a CLEC that uses a competitive DA provider calls the CLEC's DA service, it is much more likely to receive inaccurate information.

In addition, ILECs are able to extract a premium for non-carrier third-party DA providers to obtain accurate database information. For instance, TelTrust explains that purchasing DA

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[6] Metro One explains that the primary source of database information is obtained by third-parties from printed LEC directories and scanned. These listings are out-of-date when published, and often more than a year old when scanned and compiled -- leading to severe inaccuracies. See Comments of Metro One at 3-4.

listings out of ILEC tariffs is prohibitively expensive, as per query rates are priced at levels that will compete in the retail market. See TelTrust Comments at 8. Alternatively, tariffed subscription services (available from some ILECs) charge an initial access fee of $25,000, plus additional query fees for each "dip," plus monthly update fees that frequently involve updates to information previously provided. See id. at 12. Electronic white pages are available from some ILECs, but again, costs can be as high as $.25 per listing. See *Ex Parte* Letter filed by INFONXX at n.3 (May 20, 1999) ("INFONXX Letter"). These exorbitant costs are passed on to CLECs such as TWTC, raising the cost for TWTC to provide its services.

In contrast to the non-carriers, carrier third-party DA providers (*e.g.*, AT&T, MCI and Metro One and Frontier) are supposed to be able to obtain "non-discriminatory access" to DA and telephone numbers and directory listings pursuant to Section 251(b)(3). USTA's UNE Fact Report cites these and other carriers as examples of carriers that are able to provision DA. See UNE Fact Report at IV 1-10. Contrary to these "fact" assertions, however, Section 251(b)(3) evidently has not afforded these carriers sufficient access to ILECs' DA services and databases at price or accuracy parity. Accordingly, AT&T, MCI and Metro One have all argued in this proceeding that they need access to DA pursuant to Section 251(c)(3) and 251(d)(2).

Carrier third-party DA providers suffer from the same or similar accuracy problems as do non-carrier third-party DA providers, rendering them an equally unacceptable substitute for the ILECs' cost-based forward-looking DA services. Most probative may be the fact that one of the very providers of competitive DA services that presumably would benefit from removing DA's UNE status -- Metro One -- concedes that "ILECs have a unique advantage in the DA business, because they have the *only* complete and reliable DA databases. . . . The DA listings area

presents an excellent example of a situation where *the existence of an alternative is inadequate and where the ILEC's network element is critical.*" Metro One Comments at 3, 15 (emphasis added) (explaining that ILEC data is approximately 95% accurate while third-party data is less than 80% accurate). As further explained by MCI, CLECs will always need unbundled access to ILECs' DA databases because of accuracy issues. See MCI WorldCom Comments at 72. Notwithstanding Section 251(b)(3), MCI has decided not to provide its own DA services to its customers until it can obtain access to these databases as cost-based UNEs.

The cost to CLECs of obtaining DA services from a third-party DA provider (carrier or non-carrier) is also much higher than the cost of obtaining services from an ILEC. This is primarily due to the increased costs associated with leasing trunk lines to the call center of the third-party. Whereas a T-1 or similar trunk from each TWTC switch to an ILEC's nearby call center generally costs in the neighborhood of $200 per month, the same trunk to a non-carrier third-party DA provider may cost as much as several thousand dollars per month since third-party DAs have only a few call centers, each located hundreds or thousands of miles away. This can result in a difference of several thousand dollars per month per trunk, and an aggregate company-wide difference of hundreds of thousands of dollars per month. Moreover, trunking is considerably more expensive even for those third-party DA providers that have call centers in each BOC region than is the case to connect to the ILEC local service operator platform.

Finally, self-provisioning DA is simply not an option for TWTC. TWTC would have the same problem experienced by other competitive providers of DA services in obtaining accurate directory listing information on non-discriminatory terms and forward-looking prices. In addition, TWTC does not have the capital to invest in the necessary real estate, buildings, switch facilities,

personnel, training, trunking and other inputs necessary to self-provision DA services. Even if capital were available, such an investment would tie-up scarce resources better spent on parts of the network (including switching transport and in some cases loops) for which TWTC believes it can compete efficiently with the ILECs without having comparable economies of scale and scope. Alternatively, TWTC would be forced to attempt to achieve the scale and scope necessary for DA services to pay for themselves by becoming a wholesaler of DA services, a business with which TWTC has no experience and that is already serviced by competitors facing difficulties working with and competing against the ILECs.

The higher cost and lower quality of alternative DA service combined with TWTC's inability to justify self-provisioning has caused TWTC to terminate its contract with a carrier third-party DA provider and to replace it with ILEC DA service. Moreover, other CLECs have apparently had similar experiences. Facilities-based carriers similar to TWTC continue to seek to obtain DA as an ILEC UNE. For instance, Cox states that it does not need the full-range of UNEs since it is a facilities-based carrier, but the alternatives for DA services are so inferior that Cox must depend upon ILECs for these services. See Cox Comments at 2, 32; see also MediaOne Comments at 12. Cox's comments are especially probative of the inadequacy of third-party providers, as USTA's UNE Fact Report identified Cox (among others, including commenters that are seeking DA services as UNEs -- McLeodUSA, AT&T, MCI Worldcom, and GST Telecom)[7] as a customer of a third-party provider in an attempt to demonstrate the adequacy

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[7] See Comments of McLeodUSA at 6; Comments of AT&T at 110, 126; Comments of MCI Worldcom at 58; and Comments of GST Telecom at 20.

of third-party vendors as substitutes. See UNE Fact Report at IV-2 (citing Cox as a customer of TelTrust for DA services).

C. ILEC Signaling Systems Must Be Provided As A UNE On A National Basis.

As with DA, the ILECs claim that signaling networks and related databases are widely available from third-parties and can in any case be efficiently self provisioned by CLECs. But again, the marketplace reality is that many facilities-based CLECs, even those with their own switches such as TWTC, must rely on ILEC signaling networks and related databases. TWTC's experience has been that the third-party SS7 vendors do not offer anything close to an adequate substitute for ILEC SS7.

Signaling systems are integral to the functioning of any telephone network, as they instruct tandem and end-office switches and control the flow of voice traffic (among many other functions). Signaling systems typically aggregate their traffic from each STP pair to a regional STP pair, where additional information is stored in a call-related database. The messages traveling between STP pairs are carried over signaling links. These signaling links are crucial to the signal system networks, and signaling links must travel over diverse paths in order to be considered properly redundant, and therefore reliable. ILEC signaling links are sufficiently diverse to prevent frequent outages, whereas this is not the case in TWTC's experience with third-party providers' signaling links. To the extent a CLEC must use less reliable third-party signaling systems, the CLEC's network will be less reliable and subject to periodic outages, seriously impairing its ability to compete with the more robust ILEC networks.

In addition to the fact that third-party signaling networks are less reliable, the consequences of system failures are more serious than is the case with an ILEC signaling network.

ILEC signaling systems contain many STP pairs (typically one pair per LATA), whereas third-party signaling systems typically rely on a very few or even a single STP pair as a gateway to its signaling system. Thus, a smaller number of CLEC switches are connected to an STP pair when the CLEC uses ILEC signaling than is the case when a CLEC uses a third-party signaling service. It follows that a smaller portion of a CLEC's network is affected when an ILEC STP pair experiences problems than is the case when a third-party vendor's STP pair experiences problems.

TWTC experienced first-hand these weaknesses in third-party signaling offerings. TWTC relied upon the signaling system of a third-party vendor between 1996 and 1998. During this period, TWTC experienced numerous serious system failures that crippled large portions of its local exchange network. For instance, in November 1996, TWTC's third-party provider informed TWTC that it had experienced a fiber cut in a signaling link used to connect two sets of STP pairs in Missouri that supported TWTC's local exchange network. Since sufficient route diversity had not been built into the system and a large portion of TWTC's network was served by the affected STP pair, 132 DS3's were immediately affected in TWTC's network and the signaling network did not function properly again for nearly seven hours.

TWTC experienced more problems in October 1997, when TWTC's signaling system vendor suffered a partial SS7 outage that affected several regional STP pairs. The vendor attributed the problem to a combination of a facility failure, a higher than usual amount of traffic on its SS7 network due to external events, and an incorrect response from the system's software that resulted in several active links being taken out of service. This outage disrupted TWTC's service to 800 customers, isolated four pairs of STPs serving four TWTC markets from the rest of the SS7 network, and intermittently disrupted signaling to regional STPs.

Despite TWTC's concerns and its repeated attempts to work with the vendor to address the problems, the vendor continued to experience significant and ongoing problems, including difficulties interconnecting with the signaling systems of various ILECs. TWTC ultimately had no other choice but to establish new signaling arrangements. Unfortunately, TWTC's research revealed that *none* of the third-party signaling vendors offers anything close to the reliability of the ILECs' redundant SS7 networks.

Furthermore, self-provisioning is also not an option for TWTC. Many of the same difficulties associated with self-provisioning DA services apply to self-provisioning SS7. TWTC does not have the scale necessary to justify such an investment. It would be very costly to replicate the diversity of the ILECs' signaling links, and the sheer number of STPs throughout the ILECs' signaling network. These robust ILEC signaling systems are a legacy of the ILECs' former monopoly status (and regulation), and will not be replicated by any national signaling system provider, let alone a single competitive carrier. As a result of the problems it experienced with third-party vendors and its inability to self-provision signaling, TWTC had little choice but to begin purchasing SS7 as a UNE.

Moreover, other CLECs have apparently encountered similar difficulties relying on third-party providers of signaling. Though the UNE Fact Report itself cites several "competitive signaling and database providers" that self-provision signaling systems,[8] many of these and other similar carriers have filed their own comments requesting that signaling systems be made available

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[8] See UNE Fact Report at V-3 (identifying GST Telecom, Intermedia, and MCI Worldcom).

as UNEs pursuant to Section 251(c)(3).[9] For example, Cox and McLeodUSA, like TWTC, have deployed their own switches but seek SS7 as a UNE. These requests demonstrate that these carriers understand the difficulty in self-provisioning signaling systems at par with that obtained from ILECs without having the necessary scale.

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9 See Comments of Cox at 32, 34; Joint Comments of GST Telecom et al. 18; Joint Intermedia Comments at 26; Comments of McLeodUSA at 6; MCI Worldcom Comments at 58.

IV. CONCLUSION

The Commission should establish rules implementing Section 251(d)(2) in accordance with these reply comments.

Respectfully submitted,

/s/ Brian Conboy

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TELECOM HOLDINGS INC.
d/b/a TIME WARNER TELECOM

June 10, 1999

CERTIFICATE OF SERVICE

I, Jay T. Angelo, hereby certify that I have on the 10th day of June, 1999, served copies of the foregoing Reply Comments of Time Warner Telecom in CC Docket Nos. 96-98 and 95-185, on the following via electronic delivery unless otherwise indicated:

Magalie Roman Salas*
Secretary
Federal Communications Commission
445 12th Street, S.W.
Washington, DC 20554

Janice Myles **
Federal Communications Commission
445 12th Street, S.W.
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/s/ Jay Angelo

* 1 electronic version filed June 10; 12 copies via hand delivery on June 11.
** 1 copy via hand delivery on June 11.