STATE OF NEW YORK
PUBLIC SERVICE COMMISSION

OPINION NO. 97-14

CASE 95-C-0657 - Joint Complaint of AT&T Communications of New York, Inc., MCI Telecommunications Corporation, WorldCom, Inc. d/b/a LDDS WorldCom and the Empire Association of Long Distance Telephone Companies, Inc. Against New York Telephone Company Concerning Wholesale Provisioning of Local Exchange Service by New York Telephone Company and Sections of New York Telephone's Tariff No. 900.

CASE 94-C-0095 - Proceeding on Motion of the Commission to Examine Issues Related to the Continuing Provision of Universal Service and to Develop a Regulatory Framework for the Transition to Competition in the Local Exchange Market.

CASE 91-C-1174 - Proceeding on Motion of the Commission Regarding Comparably Efficient Interconnection Arrangements for Residential and Business Links.

OPINION AND ORDER CONCERNING
PETITIONS FOR REHEARING OF OPINION NO. 97-2

Issued and Effective: September 22, 1997

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BY THE COMMISSION:

INTRODUCTION

On April 1, 1997, we issued Opinion No. 97-2, setting New York Telephone Company's (New York Telephone's) rates for a group of network elements comprising most of those that incumbent local exchange companies (ILECs[1]) are obligated to make available pursuant to the rules of the Federal Communications

[1] A list of acronyms used in this opinion appears as Attachment 1.

Commission (FCC)[1] implementing the Telecommunications Act of 1996 (the 1996 Act). Petitions for rehearing of various aspects of that decision have been filed by New York Telephone Company (New York Telephone), AT&T Communications of New York, Inc. (AT&T), MCI Telecommunications Corporation and MCImetro Access Transmission Services, Inc. (MCI), Sprint Communications Company, L.P. (Sprint), and MFS Intelenet of New York, Inc. (MFS). Replies have been filed by the foregoing parties except for MFS and by the New York Clearing House Association (NYCHA).[2]

The proceedings that culminated in Opinion No. 97-2 considered two competing views of New York Telephone's pertinent costs--one based on New York Telephone's own study, and another based on the Hatfield Model sponsored by AT&T and MCI. Both models were said by their proponents to be consistent with the Total Element Long-Run Incremental Cost (TELRIC) construct propounded by the FCC in the First Report and Order. We found that if the inputs to the competing studies were properly adjusted, the results produced by the studies tended to converge or even cross, and we therefore set rates at a point within the narrowed range that resulted from this convergence analysis. We then required that rates for unbundled loops be geographically deaveraged into two zones, and we expressed an interest in further deaveraging in the future.

New York Telephone's petition accepts the "basic framework" of the decision but contends that a wide range of specific errors resulted in element rates that are too low. The other petitions take a contrary position, asserting, for various reasons, that the decision is fundamentally flawed and that the

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[1] 47 C.F.R. §51.319, adopted in the FCC's CC Docket Nos. 96-98 and 95-105, First Report and Order (released August 8, 1996) (First Report and Order). This section of the rules remains in force, not being among those vacated by the Eighth Circuit Court of Appeals in Iowa Utilities Bd. et al. v. FCC.

[2] Though styled and submitted as a response, NYCHA's filing does not oppose any of the petitions for rehearing and simply reiterates, with some elaboration, several of AT&T's and MFS's points.

rates are so high as to seriously jeopardize the development of facilities-based competition in New York.

This opinion begins with a general discussion of method, first elaborating on the new TELRIC method and its implications for this proceeding and then providing additional explanation of the method we used in deciding the case. Next it takes up the predominant issue raised by the parties who believe the prices we set are too high: the decision to cost out New York Telephone's system on the premise that all loop[1] feeder would employ fiber optic, rather than copper, technology. Next discussed is deaveraging, an issue also raised by several parties. Thereafter, the remainder of the specific issues raised by the various petitions (primarily, New York Telephone's) are considered in sequence. Finally, we turn to the parties' general concerns about the effects of the decision on the development of competition in the local service market.

Overall, we are modifying our earlier decision in one minor respect, related to the pricing of digital loops; and we are taking the opportunity to correct some analytical errors that do not affect the ultimate result and to explain more fully some aspects of our method. In all other respects, Opinion No. 97-2 is being fully reaffirmed.

GENERAL ISSUES OF METHOD

TELRIC and Its Implications

The TELRIC costing method and its alternatives were discussed at pages 7-15 of Opinion No. 97-2. Briefly, TELRIC is the term coined by the FCC to describe its application of Total Service Long Run Incremental Cost (TSLRIC) analysis to network elements rather than services. TSLRIC, in turn, is defined in our Toll and Access Costing Manual as "the difference in the total costs of the company when it produces the service in

[1] The terms "loop" and "link" are often used interchangeably and sometimes confused. The distinction is that the link includes the network interface device (NID) while the loop does not.

question compared to when it does not produce any output of the service."

In Opinion No. 97-2, we saw no need to evaluate the various methods on theoretical grounds, other than to observe that embedded-cost pricing was likely to be inconsistent with prices determined by competitive markets. We regarded TELRIC as "a reasonable approach to use," though not exclusively so, and we saw no practical alternative to deciding the case on that basis, inasmuch as that was how it had been litigated. In view of the points raised in the rehearing petitions, we now take this opportunity to amplify or clarify some points about TELRIC made in the opinion.

First, as we explained,[1] TELRIC measures the costs of elements, not services. Services typically are provided over shared network facilities, and determining their costs requires allocating substantial amounts of joint and common costs. Determining the costs of elements should require fewer such allocations, for a single element may be used to provide a number of services, and some costs that were common or joint with respect to those services may be solely attributable to the single element. In this context, as we said, while it may be true that network elements largely correspond to distinct network facilities, the broadband or narrowband debate, discussed below, implies some limits on that correspondence and the allocation of joint and common costs among elements remains significant. Still, the prospect of various services being provided over a single network element does not, in general, require allocating the costs of the element among the services. Under a TELRIC construct, the purchaser of a loop should pay the costs of that loop (determined in accordance with the criteria described below), and if the loop happens to be capable of providing a variety of services, the price of the loop itself should not necessarily be affected. (These matters are discussed further below, in the context of the fiber feeder question.)

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[1] Opinion No. 97-2, mimeo p. 11

Second, the TELRIC method is forward-looking. That term, of course, lends itself to varied interpretations, and the FCC (not unreasonably) construed it as requiring that prices for network elements be based on "costs that assume that wire centers will be placed at the incumbent LEC's current wire center locations, but that the reconstructed local network will employ the most efficient technology for reasonably foreseeable capacity requirements."[1] We adopted that construction. In addition to contemplating forward-looking network design, a forward-looking analysis also requires that such costs as depreciation and return on capital be estimated in a manner that takes account of likely future developments.

This forward-looking approach differs more in degree than in kind from the long-standing practice in New York and elsewhere of setting rates in traditional cases on the basis of a forecast test year. One major difference is that in a TELRIC analysis, a least-cost, most efficient, network is hypothesized and is assumed to be "dropped into place." But that does not mean that the method requires consideration of "fantasy networks" or "speculative future innovations"[2]; it requires primarily that the hypothetical network design assume full deployment of the most efficient technology currently (or very soon to be) available.[3] Except for that important distinction, the forward-looking TELRIC analysis proceeds in a manner that resembles a forecast-test-year rate case analysis: historical data provide a useful starting point, but are evaluated and adjusted in accordance with anticipated future developments.

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[1] First Report and Order, ¶685. This is the so-called "scorched node" approach.

[2] New York Telephone's Initial Brief, p. 25.

[3] As discussed later, in the fiber feeder issue, that is why a TELRIC network that contemplates all-fiber feeder is proper even though New York Telephone's actual network still incorporates a fair amount of copper feeder.

The parties to the proceeding criticized each other's studies in many ways, and we found that many of the criticisms in each direction were valid. But the foregoing understanding of TELRIC suggests that New York Telephone's study is not vulnerable to AT&T's charge that its reliance on historical data disqualifies it as a proper TELRIC study. To be sure, as we found, aspects of that reliance are flawed; and in some instances, New York Telephone relies too heavily on historical data (though in others, such as depreciation and cost of capital, it goes too far in contemplating changed circumstances). But neither New York Telephone's use of historical data as a starting point, nor the Hatfield Model's incorporation of historical data in some aspects of its analysis (such as its use of Automated Reporting Management Information System (ARMIS) data in its Expense Module), in itself compromises the study's standing as a TELRIC analysis. Accordingly, we found, and continue to find, that both studies, corrected for their flaws, generally comport with the TELRIC method.

Convergence Analysis and
Relative Merits of the Studies

MCI objects to our having set rates at the midpoint of the narrowed range suggested by the parties' input-adjusted studies. Characterizing this approach as arbitrary, it contends that it fails to meet the 1996 Act's requirement of cost-based ratemaking and that it lacks a rational basis under general principles of administrative law. It contends that a decision such as this, "supported by no reason other than compromise,"[1] violates an agency's obligation to exercise its expertise and judgment and that in requiring that rates be set on the basis of costs, Congress did not intend this sort of compromise. It warns that this method, moreover, will encourage incumbent carriers to inflate their costs in the expectation that the Commission will settle on a midpoint value.

[1] MCI's Petition, p. 20.

Noting New York Telephone's burden of proof under the Public Service Law, MCI renews as well its argument that New York Telephone's study was a hasty effort, inadequately prepared and supported, that should have been rejected and that the study about which New York Telephone's witnesses were testifying was not the study first prepared by New York Telephone for submission in the proceeding. It asserts, among other things, that New York Telephone's witnesses had little command of the data underlying the study, and it renews the arguments, presented in the case-in-chief, that changes in New York Telephone's study undermined its credibility. It maintains that "by discounting these significant flaws in [New York Telephone's] evidence, the Commission freed [New York Telephone] from its burden of proof and thereby committed error."[1]

In response, New York Telephone distinguishes our method here from the arbitrary action found improper in the case cited by MCI.[2] There, New York Telephone explains, the court said it would be improper for a regulatory agency to decline to determine the proper approach to an issue and instead to average the results of two inconsistent theories, such as by determining rate base on an original cost and a reproduction cost basis and then averaging the results. Here, New York Telephone asserts, the Commission adopted TELRIC as the theoretical approach and then considered the convergent results of the different TELRIC studies as defining the range of reasonable outcomes. Selecting the midpoint of that range, New York Telephone says, was not arbitrary.

New York Telephone also defends its own study against the charge of haste and inadequacy, noting that it was done on a compressed timetable and subjected to an exhaustive review through discovery and hearings. Noting that the issues raised by

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[1] Ibid., p. 31.

[2] Consolidated Gas Co. of N.Y. v. Newton, 267 F. 231, 236-237 (S.D.N.Y. 1920), modified on other grounds, 258 U.S. 165 (1921).

MCI were pressed both by it and by AT&T in the case-in-chief, it contends that MCI has shown no basis here for reconsideration.

The criticisms of New York Telephone's study simply reiterate arguments previously made and fully considered in Opinion No. 97-2; they do not warrant rehearing. Nor is rehearing warranted by the criticisms of our method. We simply determined that the parties' different TELRIC studies, properly adjusted, produced results that differed far less than initially appeared to be the case, and we exercised our judgment to set rates within the resulting, record-based, narrowed range of reason. Because of that convergence in result, which suggested as a practical matter that the differences between the studies were largely in the inputs they used, there was no compelling need to evaluate their theoretical merits, and we in effect left both methods on the table for further refinement. We fully explained why we were deciding the case in the manner we did, and, contrary to MCI's claim, that mode of resolution is neither arbitrary nor irrational, nor does it shirk our obligation to set cost-based rates on the basis of the record.

At this point, nevertheless, some further comment is warranted. While both presentations suffered from serious weaknesses (many of which were discussed and corrected for in Opinion No. 97-2), the Hatfield Model is more flawed in concept than New York Telephone's study. It suffers from its tenuous link to the real world, the elaborate and cumbersome nature of its structure, the limited nature of the support for many of its assumptions, and the failure of its proponents to demonstrate that it ever accurately predicted the costs of any actual investment. All of these considerations, and others, together call into question its inherent credibility. This is not to say that New York Telephone's study lacked defects; for example, it examined facility investments at too high a degree of aggregation. Relying upon the overall average facility characteristics of each density zone (e.g. loop length or lines per switch) inhibited its examination of alternative deaveraging proposals and may have prevented a more detailed understanding of

the interrelationships among underlying cost drivers. Overall, however, it was the more conceptually sound of the presentations.

As described below, AT&T argues forcefully on rehearing that the only record evidence on the comparative costs of fiber and copper feeder is the Hatfield result assertedly showing copper to be cheaper, and that we therefore erred in setting costs on the basis of fiber. For reasons also described below, we regard that result as implausible, attributable to questionable inputs and a deficient model. AT&T's arguments, on rehearing, make it more important now for us to state that while both methods remain worthy of further refinement and consideration, (and of resubmission with suitable modifications in any future examination of these costs), on the basis of the record before us we regard the Hatfield Model and the results it produces as weaker in general than New York Telephone's study.

FIBER IN THE FEEDER

The Decision

Following what its proponents regarded as a cost-minimizing premise used in other jurisdictions, the Hatfield Model assumed that feeder lines shorter than 9,000 feet would use copper rather than optical fiber. New York Telephone, in contrast, contemplated all-fiber feeder. To state the argument in general terms, New York Telephone's adversaries contended that a more costly fiber technology was being installed to support New York Telephone's broadband system, which requires the use of fiber rather than copper, and that purchasers of narrowband network elements should not be required to bear its costs. New York Telephone, for its part, contended that fiber had become the technology of choice even for a narrowband, voice-only system and that a forward-looking construct (of the sort required by a TELRIC analysis) would use fiber even to determine the costs of narrowband.

We adopted New York Telephone's position and used, as an input, 100% fiber feeder. In doing so, we noted that this had been among the most highly contested issues in the proceeding and

acknowledged the "incontrovertible evidence"[1] that New York Telephone contemplated installing a broadband system and that fiber and associated equipment were needed for that system. We went on, however, to distinguish between that statement and the conclusion that New York Telephone was installing fiber solely or even primarily for the purpose of advancing its broadband plans. We also were unpersuaded by the Hatfield proponents' reference to a Bellcore Carrier Serving Area (CSA) standard suggesting that links shorter than 12,000 feet might be provisioned over copper without any disruption to narrowband voice and digital services; we credited New York Telephone's explanation of why that standard was not pertinent here and added that it pertained to long distribution lines, not feeder lines.

We went on to cite a 1991 analysis (the Network Study) presented by New York Telephone to the Communications Division in the Network Modernization Proceeding and showing benefits to the use of fiber technology for the remaining 25% of feeder relief jobs that were still using copper; those findings, we said, were reported in the ensuing staff report (the Staff Network Report or the Report) and reflected in the ultimate decision.[2] The Network Study and Staff Network Report found that investment costs associated with fiber exceeded those of copper but that the difference was more than offset by fiber's lower provisioning and maintenance costs and by fiber's ability to permit the construction of a self-healing Synchronous Optical Network (SONET), in which outages became much less likely. We saw no clear explanation for the Hatfield Model's contrary result, which showed higher costs for fiber, and we concluded as follows:

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[1] Opinion No. 97-2, mimeo p. 82.

[2] Case 91-C-0485, New York Telephone Company - Network Modernization, Staff Report Assessing Network Modernization Needs and New York Telephone's Plans (November 4, 1992)(the Staff Report), p. VII-10; Opinion No. 94-7 (Issued March 14, 1994). The Network Study, a confidential document provided to staff under trade secret protection, is formally titled "The Network of Tomorrow: Guidelines for Fiber Deployment in the Loop."

> In view of the prior staff analysis, which has not been compellingly refuted, we cannot conclude that New York Telephone, by reflecting in its study its actual forward-looking practice of installing 100% fiber feeder, has inflated the costs of its narrowband network or required purchasers of network elements to subsidize its broadband ventures. In addition, it should be borne in mind that competitors, in the future, may want to use purchased elements to provide enhanced services to their own customers, and that fiber may prove useful for those purposes.[1]

Before the parties' arguments are presented, some terminology, used primarily in New York Telephone's response, should be described. New York Telephone's study was premised on the use of Integrated Digital Loop Carrier (IDLC), which refers to one of two ways in which a Digital Loop Carrier (DLC) facility can be connected to central office equipment; the other is Universal DLC (UDLC). DLC itself is a loop technology that reduces the amount of feeder in the network by enabling large amounts of traffic to be multiplexed digitally onto a single facility; without it, multiple transmission facilities would be required. IDLC enables DLC traffic to be exchanged with a switch directly in digital format, without conversion to analog; it cannot be used in the few remaining analog central offices. UDLC exchanges traffic in analog format, requiring that the traffic be demultiplexed. In general, IDLC is considered to be more cost-effective than UDLC, for it requires less electronic equipment at the central office.

A DLC transmission facility, whether IDLC or UDLC, may in principle use either copper or fiber. On a going-forward basis, New York Telephone's practice is to use only fiber for IDLC; as of December 1996, 76% of its feeder was provided over fiber and 24% over copper. New York Telephone asserts that its study's premise of "the ubiquitous deployment of IDLC technology

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[1] Opinion No. 97-2, mimeo pp. 83-84.

. . . means that all of the feeder plant [except for a certain short connection] utilizes optical fiber rather than copper."[1]

Asserted Grounds For Rehearing

Characterizing this decision as our "largest error,"[2] AT&T contends that it accounts for nearly all of the difference between the loop rates we approved and the assertedly much lower loop rates that prevail around the nation. Maintaining that the cost difference between using fiber for all loops and using it only for loops exceeding 9,000 feet comes to approximately $3.00 per loop,[3] AT&T calculates a cost increase to New York consumers of nearly $400 million annually as a result of this decision. AT&T cites what it regards as a nearly universal consensus that copper is cheaper for shorter loops, and it sees no basis for distinguishing New York in this regard. It therefore asserts that the loop rates we approved violate various sections of the 1996 Act inasmuch as they are neither cost-based nor nondiscriminatory and permit New York Telephone to subsidize its broadband plans by imposing their costs on captive carriers and customers interested only in narrowband telephony.

More specifically, AT&T contends, first, that even though New York Telephone bears the burden of proof, it offered no record evidence in support of its 100% fiber network design. Asserting that as loop length decreases, the per-foot cost of fiber feeder inevitably increases (because of the significant fixed costs of the sophisticated electronics required at each end), AT&T maintains that its own study, which showed the resulting advantages of copper at shorter loop lengths, was the only quantitative analysis of the issue on the record. It argues that New York Telephone presented no quantitative evidence in

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[1] New York Telephone's Response, p. 9.

[2] AT&T's Petition, p. 8.

[3] We discuss below the adjustment to that estimate implied by the other adjustments we have made to the Hatfield inputs.

support of its view and that its qualitative opinion testimony about the advantages of fiber in no way refuted AT&T's showing.

AT&T goes on to challenge what it characterizes as our improper reliance on an extra-record cost study, adding that our having done so provides the best evidence that New York Telephone failed to carry its burden of proof. As a matter of procedure, AT&T objects that parties were not put on notice that we might rely on a 1991 New York Telephone cost analysis and thus were denied the opportunity to challenge it on the record. Compounding this denial of due process, AT&T says, was a reversal of the burden of proof, inasmuch as we cited the Hatfield proponents' failure to compellingly refute a study that they had not been informed would be relevant.

AT&T raises substantive objections as well. It contends that the Staff Network Report was filed in a proceeding whose objective was to define a network of the future, not to determine costs; that no formal evidentiary review of the 1991 Network Study had been undertaken; that the Network Study examined a network designed for both voice-grade service and broadband and thus was irrelevant to the issues raised here; that the Staff Network Report in fact criticized New York Telephone's cost estimates and declined to find that fiber was the least-cost feeder technology; and that a 1991 cost study cannot prove cost-effectiveness in 1997. Asserting that "staff appears simply to have abandoned its role as cost analyst, its job here, to resume the role of cheerleader for fiber technology, its role in 1991,"[1] AT&T says that one need not abandon affection for fiber technology in order to correctly analyze the cost efficiency of a network for voice grade services.

Because fiber is not the least-cost technology for narrowband feeder, AT&T continues, the use of an all-fiber premise violates various provisions of the 1996 Act. These include, according to AT&T, the 1996 Act's requirements that rates be cost-based (§§251(c)(3) and 252(d)(1)) and

[1] AT&T's Petition, p. 23.

nondiscriminatory (§§252(c)(3) and 252(d)(1)). With respect to the latter, AT&T alleges that the discrimination exists as a result of New York Telephone charging its potential competitors above-cost rates, thereby providing those competitors less favorable terms than it provides to itself. In addition, it claims the loop rates violate §254(k) of the Act, which provides that "a telecommunications carrier may not use services that are not competitive to subsidize services that are subject to competition." AT&T sees here "a textbook example"[1] of such cross subsidization, for the provision of network elements is not competitive, inasmuch as New York Telephone exercises monopoly control over them; the emerging broadband markets are competitive; narrowband services do not require fiber feeder at all feeder lengths; New York Telephone plans to install a broadband system for which fiber is needed; and the Commission has assigned all of the costs of fiber feeder to narrowband services. AT&T cites, in this regard, an admonition by Alfred Kahn, "whose writings [New York Telephone] claims form the intellectual basis for its position,"[2] that inasmuch as costs in excess of the narrowband stand-alone costs are attributable to broadband services, those costs must be recovered in revenues from unregulated broadband services.

More broadly, AT&T contends that the decision violates not only the plain language of the 1996 Act but its procompetitive structure and purposes. It explains how cross-subsidies can foreclose efficient competition and contends that diversified telephone companies have a natural incentive to shift costs to their monopoly services. While New York Telephone is free to build an all-fiber network, AT&T argues, it cannot require basic telephone carriers and customers to fund that initiative, as Opinion No. 97-2, in AT&T's view, permits it to do.

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[1] Ibid., p. 27.

[2] Id.

Finally, AT&T argues that even if all-fiber feeder could be justified on a cost basis for narrowband applications, assigning all of its costs to captive narrowband customers would violate the Commission's own policy "that narrowband customers should receive some of the benefit of the economy of scope between telephony and broadband services."[1] It might be reasonable, AT&T continues, to assign all of these costs to regulated services if New York Telephone's earnings were regulated and earnings from unregulated services could ultimately be applied to the benefit of purchasers of regulated services; but since that is not the case, a sharing of costs is needed. AT&T cites various staff and Commission statements to this effect and contends that the result reached in Opinion No. 97-2 is at odds with these policies. It concludes that "the Commission must either base loop rates on the least cost copper/fiber feeder mix supported by the record or on an appropriate allocation of an all fiber feeder network (that does not exceed the stand alone cost of a least cost copper/fiber mix)."[2]

MCI argues similarly, though with different emphases. It challenges, on due process grounds, the reliance on the Staff Network Report, stressing that parties had no reason to anticipate its use and were unable to refute it. It notes as well the exclusion of the report from the record of an earlier proceeding in which MCI itself had proffered it, and it cites trial staff's objection to its introduction there on the grounds that no sponsor could testify to its contents and that staff had never been notified that the report would be relied upon by one of the parties.[3] MCI adds that the report was never subjected to cross-examination in the Network Modernization Proceeding for

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[1] Ibid., p. 31.

[2] Ibid., p. 34.

[3] Case 92-C-0665, New York Telephone Company - Incentive Regulation - Track II, Tr. 7,793. MCI appends to its petition the complete on the record exchange among the parties and the Administrative Law Judges regarding introduction of the report.

which it was prepared and that its findings are based on information provided only by New York Telephone. Moreover, MCI continues, New York Telephone, as the proponent of basing costs on an all-fiber network, bore the burden of demonstrating the cost-effectiveness of that technology but never submitted testimony supporting its position.

After reviewing decisions in other jurisdictions in support of using copper for short loops, MCI contends it is implausible that engineering differences between New York and those jurisdictions warrant different results in this regard. It also suggests, as it did in the case-in-chief, that the evidence supports the premise that New York Telephone's use of all-fiber is intended to support its broadband network and adds that New York Telephone simply did not study a telephony-only network.

Finally, MCI maintains that the Staff Network Report itself is unpersuasive. It cites staff's reasons for objecting to introduction of the Report in Case 92-C-0665; these included contentions that the Report was preliminary, confusing, inconsistent with what the Commission had ruled in other proceedings, and too voluminous to introduce at the hearings without previous notice. It asserts that the Report was not a detailed or quantitative study but rather a broad-brush survey that sought to provide only a statement of principles relating to New York Telephone's modernization. According to MCI, "the Report did not even purport to consider the costs of provisioning a network designed to provide two-wire analog voice-grade service. To the contrary, it gathered qualitative information about the panoply of services offered by [New York Telephone] and it made recommendations regarding an entire mix of low-cost technologies that [New York Telephone] should develop in the future."[1] It cites as well the report's statement that "copper is still being used when the economics specifically warrant it

[1] MCI's Petition, p. 16.

(such as for jobs involving short distances)."[1] MCI concludes by characterizing the adoption of universal fiber feeder as particularly egregious because of its substantial difference in price; as already noted, AT&T calculated that difference at approximately $3 per month per loop.

MFS similarly criticizes the decision for relying on an extra-record document rather than the evidence in the proceeding. Stressing that parties had no opportunity to address themselves to the Staff Network Report, it notes that New York Telephone referred to it in its reply brief but not in its initial brief and suggests that staff, had it wanted to rely on the Report, could have asked parties to consider it together with other matters raised in the list of questions addressed by staff to the parties. MFS points to the different nature of the Network Modernization Proceeding, which did not consider costing, and to the age of the report and its reliance on technology assumptions different from those in the case.

Sprint, also objecting to costing on the basis of all-fiber feeder, suggests that doing so sends wrong signals that encourage inefficient overbuilding of facilities in dense areas and discourage efficient facilities deployment in rural areas.[2]

NYCHA's response echoes these views, asserting that fiber is the least-cost technology for short loops only where broadband is to be provided for.

New York Telephone's Response

New York Telephone responds to the foregoing arguments, asserting, in general, "that the Commission did not adopt the IDLC construct despite its high costs, it adopted that construct because it concluded that fiber-based IDLC is in fact the most

[1] Staff Network Report, p. VII-10, quoted at MCI's petition (emphasis added by MCI), p. 17.

[2] Sprint's Petition, pp. 3-4.

cost-effective technology available."[1] In support of that conclusion, it cites the record, defends the propriety of our partial reliance on the Staff Network Report, and disputes AT&T's arguments concerning the legality of the decision.

With regard to the record, New York Telephone points to the testimony of its witness Gansert that fiber feeder technology is more efficient than copper because of its smaller size and weight, the ease with which it can be rearranged (electronically rather than mechanically), its reduced maintenance costs, and the higher transmission quality it provides. It asserts we have acknowledged these factors not only in the Staff Network Report but also in the Incremental Loop Cost Study Manual. It cites as well a quantitative analysis of the cost savings achievable with DLC/fiber feeder technology set forth in the Network Study, which was provided in this proceeding as part of New York Telephone's response to an interrogatory.[2] It adds that its post-hearing analysis of costs in the major cities area, using its own cost model but assuming 100% deployment of copper cable, showed a cost increase of 65¢ per loop over the figure produced on the premise of 100% fiber.[3]

New York Telephone goes on to dispute the sensitivity analysis submitted by AT&T to show the $3.00 cost penalty allegedly associated with an all-fiber construct rather than a 9,000 foot cross-over point. It contends the analysis is based on a series of Hatfield runs that suffer from various flaws including incorrect modeling of the number of conduits for multiple copper cables in a single feeder route; underestimating the cost of structure;[4] failing to reflect the larger trench

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[1] New York Telephone's Response, p. 11, emphasis in original.

[2] New York Telephone's response to interrogatory ATT-NYT 245. The response was marked as Exhibit 135, though a copy of the report was not attached.

[3] AT&T vigorously challenged this result in its brief.

[4] Structure refers to the equipment housing or supporting the feeder lines.

size required with copper feeder; and failing to count the number of DLC lines correctly when all-fiber feeder is assumed. Noting, as it did in its reply brief, that assuming copper feeder below a cross-over point of 9,000 feet essentially replicates its existing plant in Manhattan, New York Telephone regards as preposterous the resulting Hatfield estimate of plant investment for Manhattan that is less than 20% of the actual figure. It alleges other flaws in AT&T's analysis and asserts that AT&T failed to recognize that by concentrating loop costs in the terminating electronics, DLC technology significantly reduces the costs of the frequent rearrangements required in a competitive environment.

Contending that inadequate citations prevented it from reviewing each of the out-of-state references offered by AT&T, New York Telephone suggests, as a general matter, that those practices, and their 9,000-12,000 foot cross-over points, may reflect embedded copper-driven investment and therefore be inapplicable to a fully forward-looking study unconstrained by embedded copper technology. It reiterates its many bases, set forth in its reply brief, for distinguishing the Southern New England Telephone Company study previously relied on by AT&T and notes that AT&T appears to have abandoned that reliance; New York Telephone suggests that example illustrates "the dangers of uncritically relying on studies from other states without understanding what facts and assumptions underlie [them]."[1] It suggests as well, again as it did in its reply brief, that some of the practices cited appear to be engineering-based ceilings on copper feeder length rather than economics-based floors. It questions AT&T's reliance on the more recent out-of-state studies reported in its petition, contending that they do not explicitly address the cross-over point issue, and asserts "that the Potemkin village of case citations that AT&T has erected cannot be taken at face value, and that in general statements about what other telephone companies are doing cannot be accepted in this

[1] New York Telephone's Response, p. 17.

proceeding without the benefit of evidence submitted to this Commission that explains the basis of those practices."[1]

New York Telephone next defends, both substantively and procedurally, our reliance on the Staff Network Report. It contends that Report's criticisms of New York Telephone's analyses, cited by AT&T, related to New York Telephone's plans for accelerated fiber deployment and pertained to their pace, not to the ultimate desirability of installing fiber. Turning to procedural matters, New York Telephone disputes the suggestion that we relied exclusively on the Network Study and Staff Network Report and cites the evidence here on these matters and the references to it in Opinion No. 97-2. It adds that New York Telephone's Network Study was, in fact, referred to on the record[2] and that while it was not itself introduced into the record, AT&T cross-examined New York Telephone witness Gansert about it. New York Telephone regards as "absurd on its face"[3] AT&T's claim that it was never put on notice that the Commission might rely on the 1991 cost analysis.

New York Telephone offers similar arguments with regard to the Staff Network Report and asserts that the petitions fail to recognize that the Commission, "as an expert agency, may properly rely on analyses prepared by its Staff, even if these analyses are not entered as evidence in a proceeding, and may also reasonably apply policy decisions made in one case to subsequent cases."[4] Pointing to the full opportunity given to parties in the Network Modernization Proceeding (including MCI and AT&T) to present their views, New York Telephone states that the Commission fully considered those views in deciding that there was no need "to intervene in New York Telephone's

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[1] Ibid., p. 18 (emphasis in original).

[2] New York Telephone's response to ATT-NYT 245, included in Exhibit 135, referred to above.

[3] New York Telephone's Response, p. 24.

[4] Ibid., p. 25.

investment program or require [it] to pursue a different course of action."[1] It distinguishes the exclusion of the Staff Network Report from the record in Track 2 of the Incentive Regulation Proceeding (noting that while the Judges there did not allow the entire document to be introduced in evidence, they were willing to allow its more limited use); and it cites numerous cases sustaining the Commission's authority to rely on staff analyses not part of the evidentiary record or to reach conclusions not urged by any party to a proceeding.

New York Telephone also disputes AT&T's claim that the decision violates the 1996 Act, contending that the resulting rates are, in fact, cost-based; that they are not discriminatory, inasmuch as New York Telephone derives no benefit from using a more expensive copper-based plant; and that the differences between TELRIC loop costs and embedded loop costs are an inevitable consequence of the TELRIC method. It also denies the existence of a cross-subsidy, inasmuch as the network studied by New York Telephone is not a broadband-capable network; it explains that while the network includes fiber feeder that could be used for broadband, such use could not be made without the installation of additional facilities at either end of the fiber. It asserts that the investments it studied for this case "provide no basis for offering broadband services other than some potential use of 'spare fiber.' In fact, the spare fiber is placed because it costs little on a marginal basis and provides cheap insurance against unanticipated growth in demand or damage and deterioration of the working fiber."[2] Accordingly, New York Telephone argues, there is no basis for concluding that competitors are being forced to pay for New York Telephone's future broadband services.

Finally, New York Telephone contends that even if IDLC could by itself support broadband services--something, again, it

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[1] Ibid., p. 27, citing Case 91-C-0485, supra, Opinion No. 94-7, mimeo p. 41.

[2] New York Telephone's Response, p. 35.

cannot do--the subsidy argument would still be incorrect. The TELRIC approach, it reasons, aims to determine the costs of particular network elements, such as local loops, without inquiring into how element costs should be allocated to particular services. It regards this as among the advantages of the TELRIC method cited by the FCC and, inasmuch as the inquiry is not into the cost of various services, "the question of whether loops are used for broadband as well as voice-grade transmission is thus irrelevant to the element costing issue."[1] In a similar vein, New York Telephone cites a March 8, 1995 staff memorandum to the Commission concerning the Loop Cost Study Manual, in which staff disputes the State Consumer Protection Board's contention that the cost of a basic loop should be the cost of a loop configured to provide only voice-grade service but not enhanced features such as video or high speed data transmission.

Discussion

The parties have directed considerable attention to the Network Study and the Staff Network Report, a consequence of the perhaps undue prominence we gave these documents in Opinion No. 97-2. But, as the opinion itself may not have made plain enough, our decision rested primarily on our evaluation of the record evidence and staff's expert advice in light of that evidence.

The evidence included New York Telephone's explanation of the advantages of fiber over copper for even short loop lengths, an explanation that emphasized the lower structure costs associated with fiber and the ease and economy with which fiber facilities could be rearranged to accommodate changing customer demands, thereby diminishing the risk of under-utilized investment.[2] And while New York Telephone's testimony did not

[1] Ibid., p. 36.

[2] Tr. 3,183-3,184.

itself set forth specific quantitative information on the relative economics of the two transmission media, that information was included in the Network Study (described by its witness as "a cost study that demonstrated our optical loop design"[1]) and, as noted, was made available to the parties. Meanwhile, we saw numerous weaknesses, described in Opinion No. 97-2, in the Hatfield proponents' treatment of the issue and found their 9,000-foot cross-over point less credible than the all-fiber construct offered by New York Telephone in this proceeding and confirmed by the result of the Network Modernization Proceeding. Far from relying solely on the Network Study and the Staff Network Report, we simply made use of those documents, properly, as we exercised our expertise in evaluating the record in this case.

The arguments offered on rehearing do nothing to undermine these conclusions and, to a great extent, reiterate those already considered. But because of the importance of the issue[2] and the vigor of the arguments on rehearing, we are taking this opportunity to elaborate on the rationale for the fiber decision, as follows.

While New York Telephone's embedded telephone plant incorporates substantial amounts of copper feeder, virtually none

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[1] Tr. 3,267.

[2] While the issue is clearly an important one, its dollar impact, even on the basis of the Hatfield analysis itself, does not appear to be quite so great as AT&T and MCI suggest. Accepting, for the sake of demonstration only, the Hatfield Model's method and making only our other adjustments to the Hatfield calculations (set forth at Opinion No. 97-2, Attachment C, Schedule 2, p. 1 of 3), the effect of changing the crossover point from 9,000 feet to zero turns out to be $1.60 per loop, not the $3.00 per loop calculated by AT&T. AT&T's calculation of a $400 million total cost to consumers (which also may be overstated on account of other questionable assumptions regarding market penetration by purchasers of network elements and the extent to which savings would be flowed through to end-users) would be correspondingly reduced. (These results, again, are per Hatfield; as explained in the text, we are persuaded that a proper analysis would show the all-fiber-feeder construct to be cheaper.)

is being installed on a going-forward basis, and fiber is clearly the forward-looking medium of choice.[1] This can be attributed to fiber's superiority with respect to its initial cost, its ongoing operation and maintenance expense, and its flexibility and reliability.

With respect, first, to initial costs (incorporating both material and installation), fiber's material costs are lower for the same capacity. Factoring in the cost of fiber's electronics (even those needed solely for narrowband) can, to be sure, reverse that advantage, making copper appear cheaper for short loops; but the comparison does not end there. For one thing, copper's greater weight and volume cause its installation to require heavier equipment and more labor, and the labor costs may further be increased by the greater number and shorter length of the individual copper conductors. Particularly in large metropolitan areas, both media are installed in conduit, a very costly process,[2] but the far smaller space taken up by fiber per unit of capacity means that these costs will be substantially less when fiber is deployed. The smaller amount of space taken up by fiber offers similar advantages, albeit to a lesser degree, when it is buried or placed overhead.

On an ongoing basis, fiber's maintenance costs have been substantially less on an historical basis than those of copper, by factors of roughly two for buried and underground plant and at least four for aerial plant. Those factors, fully

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[1] Tr. 3,182-3,183; see also New York Telephone's 1995 Depreciation Represcription Report, General Narrative Section, pp. 5 - 8. Among other noteworthy passages, that report states, at p. 5, that "Fiber optic cable is now the facility of choice in the feeder/distribution segment of the outside plant network. Individual cost/benefit studies are not required where fiber is chosen."

[2] As described in Opinion No. 97-2, mimeo pp. 80-81, 86, New York Telephone and AT&T disputed the cost of conduit in New York City. The best reading of the record is that while New York Telephone may have overstated these costs by failing to reflect maximum use of available duct space, AT&T's construction costs, reflected in the Hatfield Model, were unrealistically low.

reflected in the different maintenance carrying charge factors for copper and fiber,[1] may in fact be understated on a going-forward basis, inasmuch as maintenance encompasses repairs and rearrangements, and those activities tend to be increased when plant is first installed and "bugs" need to be worked out. Because there is more newly installed fiber than newly-installed copper, fiber's current maintenance costs, though already lower than copper's, may fall further in the future, particularly when one recognizes that fiber/DLC rearrangements can often be executed electronically, avoiding the cost of dispatching a technician to the site. And fiber's effectively unlimited capacity can produce further savings in customer provisioning, which can be accomplished by the addition of electronics rather than additional cabling or network reconfiguration. The historical savings, as noted, are already reflected in the CCFs; they may also be taken into account, in the Phase 2 decision, in setting the non-recurring charges (NRCs) associated with customer provisioning activities. And to the extent additional savings are realized in the future, the CCFs and NRCs can be further adjusted.[2]

Finally, fiber offers numerous operational advantages in comparison with copper. Its ability to have its performance monitored on a real-time basis permits faults to be detected and remedied more quickly. In addition, it permits the use of SONET ring networks, which route traffic around faults automatically. Fiber's added reliability is an important public good in a society whose safety and economic well-being depend heavily on

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[1] See Opinion No. 97-2, Attachment C, Schedule 2, p. 3 of 3, column B. The carrying charge factors show these differences even after the copper factors have been adjusted to remove the additional maintenance costs associated with deteriorated plant.

[2] It also stands to reason that there are savings to be realized by using a single medium for all feeder, obviating the maintenance of a dual-technology capability, such as having both fiber and copper frames at a central office. A forward-looking network, therefore, should be designed accordingly.

reliable telecommunications, and greater reliability tends to reduce costs as well.

In view of all these considerations, the Hatfield result showing copper to be cheaper is unpersuasive. (That, and not some improper reversal of the burden of proof, is what underlies the observation in Opinion No. 97-2 that the Hatfield result cannot be fully explained.) We suggested generally that Hatfield had failed "to recognize adequately the lower provisioning and maintenance costs of fiber"; more specifically, the flaw may lie in part in Hatfield's use of a single, "melded" maintenance CCF for both copper and fiber. The CCF is "hard-wired" into the model, making difficult any effort to determine the effects of modifying it. Nevertheless, analysis of the Model suggests that if the copper and fiber maintenance factors were properly distinguished, even Hatfield would show less of an advantage for copper.

For all these reasons, fiber is the technology of choice for narrowband as well as broadband applications. What TELRIC contemplates is the network that would actually be built, using the most cost-efficient, forward-looking technology available, which would certainly lead us to posit all-fiber feeder. These conclusions, based, on the analysis just described, were given added support by the results of the Network Modernization Proceeding and the documents there considered.

The arguments on rehearing offer nothing warranting a different conclusion. Turning first to procedural matters, the petitions for rehearing have shown no impropriety in our use of the Staff Network Report and New York Telephone's 1991 Network Study to provide confirmation of our conclusions. As New York Telephone argues in its response, the courts have sustained our authority to rely on analyses prepared by our expert staff even if they are not part of the evidentiary record and even if they are confidential. Our use of the documents at issue here is well within the scope of that authority, particularly since the Staff Network Report was not confidential and was the subject of litigation, involving some of the present parties, in the Network

Modernization Proceeding, and the Network Study, though claimed to be proprietary, was available to the parties under protection and was referred to in discovery and on the record.

Moreover, contrary to MCI's claim, the exclusion of the Staff Network Report from the record of the Incentive Regulation Proceeding does not call into question the limited use made of it here. Staff there objected to wholesale introduction of the document for the purpose of showing that New York Telephone had already undertaken to achieve some of the network improvements it had offered as part of the quid pro quo for the Performance Regulation Plan. Here, in contrast, we simply referred to a limited set of more objectively ascertainable facts: (1) the Report expressed staff's finding that New York Telephone's plans were reasonable; (2) those plans contemplated fiber in the feeder; and (3) the Commission, in turn, approved the Report. That approval constitutes a precedent shedding some light on an issue in this case.

Similarly, we did not reverse the burden of proof, as AT&T suggests; we merely considered, in evaluating the record in this case, the unexplained divergence between the Hatfield results and those reached in the Network Modernization Proceeding. Accordingly, we were free to take account of this material in reaching our decision.

As for the substantive arguments on rehearing, the extensive reliance on cross-over practice elsewhere is unpersuasive in the absence of additional information on pertinent circumstances (as evidenced, among other things, by New York Telephone's demonstration of the reasons why the Southern New England Telephone Company experience is inapposite), and it fails to take account of special needs in New York City, where fiber's additional reliability and flexibility may be even more important than they are elsewhere. The broadband capacity of fiber also remains largely irrelevant, since our evaluation has established fiber as the technology of choice for narrowband usages; and the additional costs of broadband flow from the additional electronics it requires, which are not taken into

account in costing narrowband loops. (They are taken into account in the higher prices of loops used to provide broadband capability.) New York Telephone's recalculation of Manhattan loop costs using 100% copper,[1] which shows a considerable cost penalty rather than any savings, is subject to challenge and adjustment; but one must also question the Hatfield implication that a new, 100% copper network in Manhattan would cost some 20% of the embedded cost of the existing network, which is 95% copper. Given that copper and labor costs are higher now than when the network was installed and that the embedded network is partially depreciated, it is counter-intuitive at least to suggest that a new, under-depreciated network would cost substantially less, even if constructed without the inefficiencies said to be reflected in the embedded costs.

Even on the view that TELRIC does require a hypothetical narrowband-only network, the conclusion that fiber is the technology of choice even for narrowband would resolve the charge that we have set rates that are not cost-based or that otherwise violate the 1996 Act. AT&T contends further that even if fiber is cost-justified for narrowband applications, its ability to be used for broadband as well suggests that its costs not be assigned entirely to narrowband customers and that they be allocated among narrowband and broadband uses. But since we have concluded that fiber is the technology of choice even for narrowband applications, no such allocation is warranted. A network element is not a service, to which the costs of needed facilities must be allocated; it is, rather, the facility itself. If a reasonable telephone company starting from scratch to build a narrowband system would install fiber, fiber then would be fairly used in calculating the cost of loops purchased by such a company in lieu of building its own facilities; and there is no need to adjust those costs to recognize fiber's incidental

[1] Although the Hatfield Model contemplates fiber for loops exceeding 9,000 feet, few if any loops in Manhattan are that long, and a 9,000-foot cross-over implies, for Manhattan, a 100% copper system.

ability to be used for broadband as well. (We must, of course, take care to exclude any electronics costs related solely to broadband applications, and that has been done here.)

In sum, we have reviewed the all-fiber decision in light of the arguments raised in the petitions for rehearing and see no legal, factual, or policy need to modify that decision. The petitions on this point are denied.

DEAVERAGING

The FCC's rules required that network element rates be geographically deaveraged into at least three zones, and the studies submitted in the proceeding, prepared before those rules were stayed, all used at least four zones. Acting after the rules had been stayed, we deaveraged loop rates on a two-zone basis, specifying one zone identical to the "major cities" zone that New York Telephone had defined as one of its four proposed zones (accounting for approximately 70% of all loops in the state) and another comprising the remainder of the state. We were unpersuaded by New York Telephone's objection (pressed for the first time in brief) to any geographic deaveraging at this time; but we also declined to deaverage further, as most other parties had urged, citing, among other things, uncertainties regarding the data. We nevertheless undertook to pursue further deaveraging promptly and said:

> The major cities price is low enough to avoid discouraging competitive market entry in the denser urban markets where it is likely to develop soonest, and the price in other areas is not so high as to be disruptive to the development of competition there. (Indeed, it is still slightly below the current loop rate of $19.32.) As is often the case in rate design decisions, this gradualist approach represents movement in the right direction, but at a pace tempered by the need to avoid untoward side effects and by recognition of imperfections in the data. We anticipate continued movement in that direction, and we will allow the parties the opportunity to present additional information

> on deaveraging issues, including whether Manhattan's cost characteristics warrant regarding it as a separate zone. That inquiry should proceed promptly, in the context of a continuation of this proceeding.[1]

AT&T, MCI, MFS, Sprint, and (in its response) NYCHA challenge the deaveraging decision, raising various legal and policy arguments against it and urging, at least in principle, immediate further deaveraging and, in particular, establishment of a separate zone for Manhattan. (As a practical matter, AT&T, though supporting further deaveraging, would not favor it until our costing methods were modified, warning that further deaveraging on the basis of the costing decision would produce "meaningless" and "capricious" results.[2]) MCI, for example, contends that two-zone deaveraging violates the 1996 Act's requirement that rates be based on costs; it recognizes that the three-zone requirement of the FCC's implementing regulations has been stayed (as noted, it has since been vacated) but asserts that "so clear is the relationship between density [of access lines] and cost that the FCC envisioned the possibility of states deaveraging into [more] than three zones where cost differences so warranted."[3] MCI also charges that the rates are not just and reasonable as required by the 1996 Act, citing the view of two commentators that "rates based upon . . . rate averaging concepts are discriminatory in the economic sense because they do not correspond to the costs of supplying service to different customers."[4] MCI also notes that it, AT&T, and New York

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[1] Opinion No. 97-2, mimeo pp. 130-131.

[2] AT&T's Petition, p. 36.

[3] MCI's Petition, pp. 22-23.

[4] Ibid., p. 23, quoting Kaserman and Mayo, "Cross subsidies in Telecommunications: Roadblocks on the Road to More Intelligent Telephone Pricing," 11 Yale Journal on Regulation, 119, 130 (1994).

Telephone itself had all proposed a greater number of zones and suggests that the decision to use two-zone deaveraging was unfair in view of the case having been litigated on a different premise.[1]

Turning to policy matters, MCI asserts that despite the vigorous disagreements among parties, they agreed that differences in density generate dramatic differences in cost. It contends that two-zone deaveraging results in network element prices significantly above cost in New York City, a high-density, low-cost area, and that would-be market entrants who can pay these inflated prices will subsidize New York Telephone while those unable to pay the prices will not enter the market. It suggests that New York Telephone's monopoly will be prolonged by these arrangements, rather than eliminated. It adds that our concern for the effect of further deaveraging on rural areas is not really addressed by the two-zone conclusion, inasmuch as truly rural areas remain in a separate zone.

Notwithstanding its objection to further deaveraging before correction of our costing method, AT&T also maintains that two-zone deaveraging violates the 1996 Act's requirement of cost-based pricing, a requirement that, according to AT&T, tolerates no policy-based exceptions or gradualist approaches. Nor does it see any possible cost justification for the gradualist approach taken in Opinion No. 97-2, given the record evidence on the relationship between cost and density and New York Telephone's concession that density-based cost differences justify at least four zones. MFS argues similarly, welcoming the stated interest in pursuing further deaveraging but asserting that an all-fiber system seriously erodes the benefits of deaveraging (by smoothing out cost differences), and it calls into question the value of devoting additional resources to it.

Sprint calls for deaveraging into at least three zones in order to better track costs, avoid confusion in the event the FCC's three-zone requirement is reinstated by the courts, and

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[1] MCI's Petition, p. 22.

allow New York Telephone more time to carry out a three-zone requirement. At a minimum, it urges a separate zone for Manhattan, in view of its unique density characteristics.

In response, New York Telephone sees no need for further deaveraging now, noting the stay of the FCC's three-zone rule and arguing that the cost-based mandate of the 1996 Act does not require geographic deaveraging at all, much less to any particular degree. Disputing AT&T's suggestion that the statutory mandate of cost-based rates precludes consideration of policy issues, New York Telephone contends that policy issues must inevitably be considered in deciding how much deaveraging is the right amount. It notes our declared intention to pursue deaveraging further and observes that parties will have the opportunity to make their cases for additional deaveraging in that context.

Relatedly, New York Telephone disputes MFS's contention (raised by AT&T as well) that the decision on fiber-based feeder undermines geographic deaveraging by concentrating most of the costs in terminating electronics rather than cable and thereby reducing the sensitivity of cost to loop length. New York Telephone observes that geographic deaveraging is done not for its own sake but to reflect cost differences, and if a particular technology entails fewer cost differences, that simply means that less deaveraging is appropriate.

Consistent with the decision in Opinion No. 97-2, deaveraging will be considered further in the next phase of this proceeding, beginning in early fall.[1] No party has shown a need for further action at this time, and none will be taken. We note, however, that we deaveraged rates because doing so constitutes sound ratemaking policy. As in other rate design contexts, we enjoy the discretion to advance a sound policy goal at a pace that avoids outrunning the available data or imposing dislocations on companies or customers. Accordingly, we reject

[1] Cases 95-C-0657 et al., Order Determining Scope of Phase 3 (issued August 29, 1997).

AT&T's suggestion that the cost-based pricing mandate of the 1996 Act requires geographic deaveraging and precludes gradualism in moving toward it.

SWITCHING COSTS

Introduction

New York Telephone's study used an average total installed switch investment of $586 per line in service (total forward-looking investment of $6.0168 billion divided by 10.344 million access lines); the Hatfield Model used a figure of $125 per line (total investment of $1.414 billion divided by 11.238 million access lines). We expressed skepticism regarding both studies and used, as the comparable figure, a per-line cost of $286.51. That figure was produced by our analysis, using data provided by New York Telephone in connection with the 1995 depreciation represcription process, of 33 actual switch installations during 1993 and 1994. Those data showed actual investment of $303.89 per equipped line, but we reduced that figure by 5.72%, to recognize continuation through 1996 of the downward trend in switching costs.

The Hatfield Model requires, as an input, a per-line investment figure net of installation expenses and trunk port investment. The analysis we adopted therefore divided the $286.51 per-line cost by an installation factor of 1.373 and subtracted, consistent with Hatfield Model documentation, $16 per trunk port. The resulting input figure of $192.67 was used for each of the Hatfield switch-size data points, since staff's analysis showed, contrary to the Hatfield premise, no significant correlation between switch size and per-line investment.[1]

New York Telephone and MCI seek rehearing on this issue.

[1] The discussion of this issue appears at Opinion No. 97-2, mimeo pp. 84-86.

New York Telephone's Petition

In its petition, New York Telephone defends its own study, (which it comprehensively summarizes) against our criticisms and asserts our analysis is seriously flawed.

With respect to its own study, New York Telephone disputes the criticism that some of the key inputs into the switching cost information system (SCIS) were left obscure and contends they are set forth in its work papers or otherwise discussed. It justifies its having modeled only four central offices on the grounds that they represented one SCIS model office for each density zone and that using zone-specific model offices captured the typical features of switching costs in each zone. As for the concern that New York Telephone's study implied a switching investment significantly exceeding the 1995 embedded figure, New York Telephone notes the FCC's statement that TELRIC costs might be higher or lower than historical embedded costs and explains the difference on the grounds that the embedded switching investment reflects the higher discounts available for digital switches supplied to replace existing analog switches, a discount not expected to be continued and therefore properly excluded from a forward-looking study. It adds that while some elements of the costs of providing telecommunications services have decreased in recent years and may continue to decrease, others are less affected by technological innovation and may increase.

Turning to our analysis, New York Telephone asserts, first, that the 1995 depreciation represcription data used by staff as the source for the actual cost of switches installed in 1993 and 1994 do not provide a suitable sample for assessing forward-looking investment. Of the 40 installations listed in the report[1], it says, only 13 were complete central office local switches; the remainder were various types of remotes whose costs

[1] New York Telephone expresses uncertainty as to why Opinion No. 97-2 refers to only 33 such installations. In fact, the report refers to 42 switches.

per line, it says, can be expected to be much lower. Many of the switches were digital-for-analog replacements, available at a lower price than would be associated with the installation of a new digital switch. Using the depreciation represcription report as the source of information, New York Telephone continues, excludes pertinent costs not accounted for in a digital switch account and uses equipped lines, rather than the smaller number of lines in service, as the denominator in determining switching cost per line, thereby producing a smaller cost.

New York Telephone next challenges the use of a 5.72% cost reduction factor to bring 1993-1994 data forward to 1996. It requests a fuller explanation of the factor and asserts that Bureau of Labor Statistics (BLS) figures show that central office switch prices are increasing, not declining, over time and in fact increased by about 3.6% between 1994 and 1996. Finally, New York Telephone raises technical criticisms of the calculation of installation and power factors associated with switching costs, alleging inconsistency between our conclusion that installed costs would be lower than suggested in New York Telephone's study and the conclusion that installation and power loading factors also would be lower.

In response, AT&T asserts, generally, that much of New York Telephone's petition, on this and other issues, not only reiterates arguments made earlier in the case but does so by setting forth verbatim, but without citation, sections of its earlier briefs. Noting our practice of requiring a petition for rehearing to demonstrate some error of fact or law in the decision, AT&T asks us "to establish clearly that it is legally improper in a petition for rehearing simply to regurgitate arguments previously made and rejected."[1]

With specific reference to switching costs, AT&T first disputes the argument that we had no basis for rejecting New York Telephone's study. It denies that the needed inputs were set forth in work papers, noting New York Telephone's own recognition

[1] AT&T's Response, p. 4.

that some of the inputs were not included.[1] It sees New York Telephone's justification for modelling only four central offices as simply reiterating its rejected assertion that using a single model office for each density zone was reliable, and notes that New York Telephone's defense of a switching investment greater than historical embedded costs merely repeats arguments raised and rejected.

AT&T goes on to defend our analysis, contending, among other things, that New York Telephone has failed to show why we should not rely on the depreciation represcription data submitted by New York Telephone itself.[2] AT&T also defends the 5.72% cost reduction factor, citing evidence that the trend in switching costs over time is downward and arguing that the BLS figures submitted by New York Telephone are extra record and, in any event, do not present the cost data on the per-line basis we used. Finally, AT&T disputes New York Telephone's technical criticism of the calculation of installation and power factors. More broadly, it contends that these criticisms are irrelevant inasmuch as we were adjusting not only the New York Telephone study but also the Hatfield results and noted that its result was one within the range suggested by the record as a whole.

MCI's response is directed primarily to disputing New York Telephone's claim that future vendor discounts would likely

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[1] Those inputs are vendor prices and discounts; according to New York Telephone, the latest vendor list prices are built into the SCIS, and the discounts were discussed during cross-examination and were the subject of an on-the-record information request.

[2] AT&T takes pains at this point to distinguish the reliance on those depreciation data, which it regards as information of which we may take official notice, from reliance on the 1991 Network Study in connection with the fiber-in-the-feeder issue. The depreciation represcription data were provided by New York Telephone explicitly for the purpose of being relied on in adjudicating its depreciation rates and may be relied on, in AT&T's view, in deciding this case. The 1991 study, however, should not be used, in its view, as a basis for a decision adverse to parties who neither provided the information nor, in its view, had an adequate opportunity to scrutinize it.

not replicate their historical levels. It suggests that the discounts are not unique to the conversion from analog to digital switches and "reflect no more than the everyday workings of the competitive market among switch vendors."[1] It argues as well that the loading factors applied by New York Telephone to basic switching investment in order to develop overall switching costs are based entirely on New York Telephone's historical costs and are thereby inflated by New York Telephone's inefficiencies and by application of the historical loading factors to an investment base increased by elimination of the switch vendor discounts.

MCI's Petition

The issue of vendor discounts is raised by MCI in its own petition for rehearing as well, where it contends that we failed to take adequate account of the ongoing reduction in switching costs and that the 5.72% factor used to estimate continuation through 1996 of the downward trend did not recognize the vendor discounts likely to be available to New York Telephone. It disputes New York Telephone's assertion, which it claims we accepted, that the vendor discounts actually achieved by New York Telephone in the past could not be replicated on a going forward basis and it charges that we "set rates in which the incremental switching investment price actually exceeds the embedded value of New York Telephone's switching costs."[2] It sees no basis for arguing that a model network would not achieve reductions comparable to those New York Telephone received, and it adds that application of the installation loading factor to undiscounted switching costs inflates the expenses associated with switching as well.

In response, New York Telephone reiterates its view that the deep discounts were tied to the analog switch

[1] MCI's Response, p. 4.

[2] MCI's Petition, p. 26.

replacements, and it contends that MCI has offered no new evidence to the contrary.

Discussion

As AT&T points out in response, New York Telephone's defense of its own switching costs study largely reiterates arguments already made and rejected. It provides no basis for rehearing.

In its consideration of our analysis, however, New York Telephone has identified one error that ought to be corrected. By using depreciation represcription data, the analysis calculated a cost per equipped line (i.e., per line of installed capacity) of $303.89. New York Telephone's study, in contrast, calculated a cost per line in service of $586. To express our result in terms comparable to New York Telephone's, a smaller denominator would have to be used, making for a somewhat higher cost per line. But the effect of that change is small, increasing the cost per line only to about $322, nowhere near New York Telephone's figure of $586.

Moreover, as noted above, New York Telephone has questioned the use, in our analysis, of data relating only to 33 switches, rather than the 42 making up the entire sample. The results change little, however, if all 42 switches are included. Rerunning the analysis (as corrected above) with all 42 switches in the sample produces a cost per line of about $298.15, even closer to the initially calculated $303.89 than was the result of merely correcting for the oversight New York Telephone identified. And further analysis reveals the results vary little if seeming outliers are excluded, with per line cost estimates falling in a narrow range of approximately $300 to $330 utilizing

any reasonable permutation of the total sample of 42 switches.[1] These various factors suggest correction of the oversight regarding equipped lines would not improve the overall accuracy of the cost estimate, which remains reasonable and well within the narrowed range suggested by the record. No change, therefore, need be made.

New York Telephone's other criticisms of our analysis fail to identify errors or raise arguments warranting rehearing. Its allegation that the represcription data omit various costs is unsubstantiated and includes no reference to the possible magnitude of the concern. That some of the switches studied were remotes rather than hosts has not been shown to have a bearing on the associated per-line costs; importantly, there was no statistically significant relationship between switch size and per-line costs.

The 5.72% price reduction factor was calculated on the basis of annual per line switching costs for all regional Bell holding companies; its development is shown in Attachment 3. The BLS data cited by New York Telephone cannot be said to undermine that conclusion, for they require considerable analysis to determine their pertinence to this inquiry. As AT&T suggests, for example, they may not be stated on a per-line basis. Similarly, the BLS data may differ from the McGraw Hill study used in the staff analysis with respect to how they incorporate additional features and software not needed for simple voice-grade service, and the implications, if any, of those differences for the BLS study's increasing prices would have to be analyzed. In addition, the BLS data encompass all users of switching equipment, not only the regional Bell holding companies examined by staff, and the significance of that difference, if any,

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[1] For example, four of the 42 switches installed in 1993 and 1994 have per line costs significantly below the sample average. If Yonkers (the largest of these four in line size) is excluded, the cost per line increases only to $325.90. If all four of these switches are excluded, the result is $328.35. These revised calculations are shown in Attachment 2.

requires examination. These questions, and others, would have to be examined before the BLS data could be taken into account.

On the other hand, MCI has not shown the price reduction factor to be too small, and has offered no new reason for rejecting the fully explained premise that the unusually large discounts associated with analog to digital conversion would not be replicated. (MCI also errs in its allegation that we accepted New York Telephone's reasoning and acquiesced in an incremental switching cost level that exceeded embedded switching costs. In fact, that anomaly was one of the factors that led to concern about New York Telephone's study, and our adjustment to that study results in estimated incremental switching costs well below the embedded level.)

Finally, New York Telephone's criticisms of the calculation of installation and power factors are misplaced. New York Telephone suggests that because the installation factor (IF) is defined as the ratio of material costs plus installation costs to material costs alone, i.e., (I+M)/M, IF by definition increases as material costs decline, even if installation costs remain stable. But the installation factor at issue here, like all of New York Telephone's carrying charge factors (CCFs, discussed below), is historical, reflecting 1995 installation expenses and material investments, including the unusually large switching vendor discounts. The smaller discount now available means, assuming constant installation costs, that M increases in relation to I, causing IF to fall. This takes place even though overall switching costs also decline, resolving the inconsistency New York Telephone claims to have identified. Moreover, AT&T makes a telling point in noting the limited use made of the installation factor, which was applied to adjust the Hatfield Model as well as the New York Telephone study, thereby narrowing the range of reasonable outcomes but not directly determining the cost at issue.

All told, the petitions for rehearing show no basis for modifying the switching cost input we adopted, which remains within the range of reason as established by the record.[1]

FILL FACTORS

To determine the TELRIC of a network element, it is necessary to make assumptions about the extent to which facilities needed to provide the element will actually be used; that proportion is referred to as the "utilization factor" or "fill factor." (In general, higher fill factors result in lower unit costs.) The parties devoted considerable effort to these factors and we reached a series of conclusions with regard to them.[2] New York Telephone and MFS challenge, from opposite perspectives, the fill factor used for copper distribution plant; in addition, New York Telephone challenges the factor for fiber feeder and MFS challenges the factor for channel units.

Distribution Cable

We noted that New York Telephone's 1996 construction budget showed actual utilization for distribution cable of about 60%, in contrast to New York Telephone's proposed factor of only 40%. We adopted a factor of 50%, recognizing that some of the cable pairs in the budget are carrier derived pairs[3] and that the 50% figure gained added support from the approximately 52%

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[1] The FCC's Notice of Proposed Rulemaking in its Universal Service Proceeding contemplates lower switching costs, calculated on a nation-wide basis for Regional Bell Operating Companies, than those we have calculated. Our staff is continuing its examination of the FCC's calculations, in an effort to identify the bases for the difference. There is no need, however, to modify our decision here in light of the FCC's figures.

[2] Opinion No. 97-2, mimeo pp. 64-65.

[3] A carrier derived pair is a subscriber loop that is created by electronics (subscriber carrier equipment) rather than by using a traditional, physical copper pair per loop. (Typically, subscriber carrier equipment can provide up to 96 subscriber loops using electronics and only a few copper pairs.)

effective fill factor used in the Hatfield Model.[1] In its petition, New York Telephone argues for the use of the 40% factor, contending that the lower factor is consistent with the "serving area concept," under which plant is installed in contemplation of the number of residential or business units ultimately anticipated in the serving area, a procedure that reduces costs by avoiding expensive readjustments to distribution plant but depresses the fill factor. It offers an analysis suggesting that even its 40% figure may be overstated.[2]

New York Telephone questions as well the basis for our determination, noting that the construction budget we relied on does not refer explicitly to the distribution fill factor. In the absence of work papers, it continues, it cannot determine how we reached our result but it offers one possible ratio that might have been computed and suggests it is misplaced, inasmuch as it reflects feeder fill, not distribution fill. Numerous distribution pairs, it explains, are not connected to feeder, and there normally are 1.5 to 3.0 times as many distribution pairs as feeder pairs. Using the low end of that range and adjusting what it takes to have been our calculation on that basis, New York Telephone computes a utilization ratio of 39.5%, which it regards as remarkably close to the 40% it proposed.

AT&T responds that New York Telephone has offered nothing new in its petition for rehearing nor shown any error of law or fact in the decision. It notes as well that New York Telephone refers only to our reliance on the construction budget, offering a flawed critique of that reliance, and makes no mention of the reference to the Hatfield Model's 52% utilization factor, which we also took into account.

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[1] These figures apply to all zones in New York Telephone's study except the rural, with respect to which New York Telephone proposed, and we adopted, a 65% factor. (Opinion No. 96-2, Attachment C, Schedule 2, p. 1 of 3.)

[2] New York Telephone's Petition, pp. 14-16.

MFS, meanwhile, asserts the 50% fill factor is understated. It challenges on due process grounds our reliance on the extra-record 1996 construction budget and sees no basis for the ten-percentage-point reduction in recognition of the carrier derived pairs. It also asserts that the "effective fill" factor of 52% in the Hatfield Model is not comparable to the fill factors used in the New York Telephone study, and that the weighted average of the Hatfield target fill factors for distribution cable in all zones is approximately 72%. Finally, MFS maintains we failed to explain why we rejected the evidence favoring a 65% distribution fill factor, such as the information provided by New York Telephone's field managers and the initial judgment of its central engineering staff. MFS urges adoption on rehearing of a 65% fill factor for distribution cable.

New York Telephone does not specifically respond but refers to its own petition for rehearing.

New York Telephone is correct to note that the ratio calculated from the construction budget data used, as its denominator, a figure applicable to feeder facilities rather than the corresponding, larger, figure for distribution facilities and that correcting for that oversight could reduce the fill factor to 39.5% or less. But the review of the staff calculations occasioned by that observation disclosed a need for an additional refinement offsetting that correction.

The numerator in the calculation was the construction program figure for "total subscriber loop channels assigned" (budget line 2252), representing only electronically derived channels. In fact, it should have included not only derived channels but also copper pairs, as did the figure in the denominator for available facilities. Increasing the numerator by a reasonable estimate of the number of assigned copper pairs[1]

[1] The estimate is derived by first subtracting the number of available loop channels (line 2236) from the total number of subscriber pairs available (line 2234). The resulting estimate of available copper pairs is assumed to be assigned in the same proportion as available channels are assigned.

suggests a fill factor of 59%, if it is assumed there are 1.5 times as many distribution pairs as feeder pairs. If it is assumed that there are 3.0 times as many distribution pairs as feeder pairs, the estimated fill factor is 29.55%. In view of, among other things, the increased use of "connected through" pairs, which are left in place when an occupant vacates a premises in order to enable a new occupant to call 911 or the business office without awaiting the installation of service,[1] the actual relationship of distribution to feeder lines likely will be closer to 1.5 times than to 3.0 times. Accordingly, the fill factor of 50% is conservatively within the corrected range.

More broadly, given the current average usage of 1.2 lines per household, New York Telephone's proposed 40% fill factor implies installation of three lines per household, a questionably high figure. But even if three lines were installed per household, the 40% fill factor would obtain only on the day of installation. In other contexts, however, New York Telephone quite properly has estimated <u>average</u> fill factors over the entire installation-to-augmentation period, and that approach is logical here as well, notwithstanding the interest in initially installing enough excess capacity to avoid for as long as possible the expense and dislocations associated with augmenting a distribution system. Application of that averaging concept here suggests the fill factor would rise from 40%, again confirming, at least on a qualitative basis, the reasonableness of the 50% figure.

MFS, meanwhile, has shown no need for a fill factor greater than 50%. It challenges our reliance on the construction budget, but the budget embodies data routinely filed with the Commission, which we are free to take into account, and, in any event, the foregoing discussion shows the budget is by no means the sole basis for our decision. And while it asserts that the Hatfield fill factor comparable to those in New York Telephone's study is the target fill of 72% rather than the effective fill of

[1] See New York Telephone's Petition, p. 16, n. 21.

52% that we cited, target fills are not pertinent to our analysis, which, as just noted, has generally credited New York Telephone's approach of using average fill factors. Finally, New York Telephone adequately explained why the 65% figure cited by its field staff, who generally fail to take account of cable modularity and non-terminated links, is not dispositive for TELRIC purposes.

Taking account of all these factors, the 50% fill factor remains comfortably within the range of reason. Both petitions for rehearing on this point are denied.

Channel Units

We adopted New York Telephone's 80% utilization factor for channel units,[1] rejecting arguments by other parties that New York Telephone's personnel had initially selected 95% as the appropriate factor and that that figure should be adopted. We relied on testimony by New York Telephone witness Gansert that a network cannot be run efficiently with 95% utilization and noted that the 1996 construction budget showed a utilization factor of only 60%.

MFS disputes both bases for decision, renewing its arguments that Mr. Gansert's testimony is not credible, particularly with regard to fill factors, and that the construction budget is not in the record and has not been subjected to the degree of scrutiny applied to New York Telephone's cost studies. In its view, moreover, "a 60% utilization factor for channel units is so out of line with contemporary network planning that it should raise serious questions of the validity of [New York Telephone's] 1996 construction budget."[2] MFS goes on to reiterate what it regards as the evidence supporting a 95% fill factor, including the data

[1] A channel unit is an electronic plug-in card that allows up to four voice-grade loop circuits to interface with fiber feeder facilities.

[2] MFS's Petition, p. 15.

initially provided by New York Telephone's personnel, the 100% fill factor used in Rochester Telephone's study, and the ten years of growth allowed for by an 80% fill factor, which it contrasts with the statement in the loop cost manual that spare channel units may be provided for, at most, 24 months of growth. MFS sees no basis for our having rejected this evidence in favor of Mr. Gansert's suspect testimony and the extra record construction budget.

In response, New York Telephone reiterates its explanation and justification, offered in brief, for its having adjusted the field engineers' original recommendation of 95% downward to 80%. It describes the potential ambiguity of the concept of channel unit utilization and suggests the field engineers who proposed a 95% factor were using the term in an engineering sense different from the TELRIC sense.[1]

MFS's petition raises two distinct though closely related issues: the adequacy of New York Telephone's explanation of why it overrode its field engineers' estimated fill factor of 95%, and the reasonableness of the 80% factor it used instead. On the first issue, we found acceptable New York Telephone's explanation of how and why its field engineers understood fill factors in a sense different from that pertinent here. MFS has presented no basis for changing that determination.

Aspects of MFS's challenge to the 80% factor require more detailed consideration but, when all is said and done, do not warrant reconsideration. MFS's reference to Rochester Telephone's alleged 100% factor is suspect on its face, for the figure is inherently unreasonable, making no allowance for any growth, and would require probing before it could be taken into account. MFS makes a more telling point in criticizing the 60% factor associated in Opinion No. 97-2 with the 1996 construction

[1] New York Telephone's Response, pp. 43-44.

budget, and the figure indeed appears to have been an error; the construction budget data in fact imply a fill factor of 82.1%.[1]

Most noteworthy is MFS's observation that the 80% fill factor provides for 10 years of growth, in contrast to the Loop Cost Manual's guideline of two years; that guideline, it points out, is consistent with the fill factor of 95% that was rejected. Growth, however, is not the only consideration that bears on the fill factor, which has to allow as well for the effects of "churn," i.e., of customers leaving and coming on the system. As a result of churn, some channel unit derived pairs remain connected after a customer departs and are temporarily unavailable for reassignment. New York Telephone has estimated churn at 30% annually[2] and generally tries to avoid physically rearranging channel units more frequently than about once every six months.[3] These figures, taken together, imply that an additional 15% of channel unit capacity will be unused at any time, suggesting that an 80% fill factor is reasonable. A factor as high as 85% might also be reasonable if some of the unused capacity could simultaneously satisfy the needs created by growth and by churn, but the record is silent on that possibility. In any event, MFS has shown no reason to reject the 80% figure as outside the reasonable range and no need to grant rehearing on this issue.

Fiber Feeder Plant

Noting that "the capacity of fiber in general is limited only by the capacity of the electronics that derive communications channels from it,"[4] we used the channel unit fill as a surrogate for fiber feeder fill and adopted an 80% factor rather than the 56% to 68% factors proposed by New York

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[1] Equal to the ratio of line 2252 to line 2236.

[2] Tr. 3,415.

[3] Tr, 3,290.

[4] Opinion No. 97-2, mimeo p. 64.

Telephone. In its petition, New York Telephone claims that its fiber feeder utilization factors were based on the judgment of its subject matter experts and that no basis had been shown for overriding that judgment. It emphasizes that investments in feeder cable and terminating electronics are calculated separately and argues that there is no logical or engineering connection between the two.

AT&T responds that New York Telephone has shown no reason to question the assumption that feeder cable and electronic utilization rates should be comparable nor has it supported its model's premise that they are not the same. It adds that New York Telephone's assertion that there is no reason for the two factors to be the same does not mean they may not in fact be the same and argues that New York Telephone has shown no error in our substitution of our own judgment for New York Telephone's, particularly given that, according to AT&T, "the least credible aspect of [New York Telephone's] entire cost presentation in this case was its 'evidence' on engineering judgment issues."[1]

In deciding this issue, we reasoned that the almost limitless capacity of fiber made traditional fill factors nearly meaningless in its context. We therefore used, as a surrogate, the fill factors for the associated channels. New York Telephone reasonably questions the engineering connection between the two, but the fact remains that the vast capacity of fiber makes traditional fill factor concepts largely inapplicable. The utilized capacity of fiber is highly elastic, and ultimately is a function of the electronics attached to it at either end. While the implications of this phenomenon may deserve further study, for present purposes, New York Telephone has shown no error in

[1] AT&T's Response, p. 19, n. 9. AT&T goes on to cite our acknowledgement, at Opinion No. 97-2, mimeo p. 118, that inconsistencies between New York Telephone's cost study and the underlying engineering documentation damaged New York Telephone's cost case.

the 80% fill factor used in Opinion No. 97-2, and its petition on this point is denied.

CARRYING CHARGE FACTORS

In General

To convert estimated investments into recurring expense levels, New York Telephone's study applied carrying charge factors (CCFs), defined as a ratio between the expenses associated with a given network element and the corresponding plant investments.[1] In determining the CCFs to be used as inputs, we applied three adjustments that New York Telephone here challenges: we raised the Hatfield Model's 10% variable overhead factor to 15% but not higher; we applied a 10% productivity adjustment to New York Telephone's directly attributable joint and common CCF; and we applied a 2% labor productivity adjustment to New York Telephone's maintenance CCF.[2] New York Telephone maintains generally that its CCFs already reflect substantial forward-looking expense savings and that further adjustments on account of additional productivity are unwarranted. It maintains these savings are captured by the application of the CCFs to the substantially reduced investment base associated with the TELRIC analysis and to the fact that they reflect 1995 expense levels, unadjusted for either general inflation or known increases in such expenses as labor costs. In addition, New York Telephone maintains, it made several specific downward adjustments to certain CCFs. It sees no basis for recognizing the additional savings advocated by some parties, noting as well that we made no allowance for the resources that might have to be expended in order to achieve additional productivity improvements.

AT&T responds that New York Telephone has shown no reason for further consideration of its previously offered

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[1] See Opinion No. 97-2, mimeo pp. 87-88 for additional description of the carrying charge factors.

[2] These adjustments, and others, are described at pp. 96-99 of Opinion No. 97-2.

arguments. MCI contends that New York Telephone's approach is one wedded to the anticompetitive concept of embedded costs and that New York Telephone continues to operate with inflated expenses. It cites, for example, what it characterizes as "a matter of public record that [New York Telephone] has 35 employees per 10,000 lines as compared with the Bell average of 30."[1] It asserts that New York Telephone's CCFs are based on these bloated operating expenses and that, accordingly, embedded costs should not be the measure of those CCFs.

The general arguments on both sides offer nothing new and provide no basis for reconsideration.

Specific Adjustments

1. Variable Overhead

AT&T advocated a 10% variable overhead allowance, said to reflect its own 1994 experience and to impute a degree of productivity on top of the 13% suggested by a regression analysis relating a firm's overhead expense to its size. Citing various New York-specific figures, however, we found the 10% figure unrealistically low and adopted, for purposes of a Hatfield Model input, a 15% overhead factor.

In its petition, New York Telephone objects to the use of any overhead factor, regarding it as an artificial construct that limits cost recovery and imputes additional savings beyond those reflected in New York Telephone's CCFs.

AT&T characterizes New York Telephone's argument as "mystifying,"[2] suggesting that it would preclude recognition of any overhead costs in the final cost calculation pursuant to the Hatfield Model. If the point of New York Telephone's argument is that the Hatfield Model should be totally ignored, AT&T continues, New York Telephone has not made that argument clear

[1] MCI's Response, pp. 10-11.

[2] AT&T's Response, p. 22.

and, in any event, the decision explicitly took into account both the New York Telephone study and the Hatfield Model.

New York Telephone's argument is indeed surprising, suggesting that it should be allowed to recover no variable overheads at all if prices are based on Hatfield-determined costs. Perhaps New York Telephone is concerned that in accepting a 15% factor (or even, as one would expect it to do, arguing for a higher factor), it might be taken to imply acquiescence in the Hatfield analysis, something it is unwilling to do even for the sake of argument. In any event, no reason has been shown to modify the figure we adopted.

2. Productivity Adjustment

Rejecting as inadequately supported the 30% productivity factor applied in the Hatfield Model's estimate of forward-looking network operations, we cited studies submitted in the incentive regulation proceeding[1] suggesting annual productivity of 4.6% and 4.33%, "along with the prospect of additional productivity gains that can reasonably be expected to ensue from the development of competition,"[2] and applied a productivity offset of 10% for purposes of its Hatfield run. New York Telephone objects to this adjustment as unsupported by data in the record, and it argues that reasonably anticipated productivity gains are more than adequately reflected in its CCFs. It adds that the productivity figures referred to in the incentive regulation proceeding capture the same phenomenon reflected in the CCFs, that is, absorption by New York Telephone of all of the effects of inflation that, under traditional rate of return regulation, would be reflected in rate increases. In addition, New York Telephone sees the productivity offset as

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[1] Case 92-C-0665 - New York Telephone Company - Track II - Incentive Regulation, Opinion No. 95-13 (issued August 16, 1995). In that proceeding, we approved a Performance Regulatory Plan (PRP) for New York Telephone.

[2] Opinion No. 97-2, mimeo p. 97.

further limiting the excessively low 15% overhead factor that we determined, in the adjustment described above, to be the correct level.

AT&T responds, contrary to New York Telephone's claim that the record lacks evidence for a 10% productivity factor, that the Hatfield Model, part of the record and not to be ignored, supported a 30% productivity adjustment. It distinguishes the scope of this productivity factor from that of the Hatfield Model's variable overhead factor, contending that the productivity gain reflected in the latter pertains to general overhead expenses and the operations underlying them, while the 10% productivity factor is applicable to all aspects of the company's operations and is therefore properly taken into account separately. It asserts as well that the cost saving efforts needed to achieve the productivity offset have been identified; they include process reengineering and the results of the Bell Atlantic merger.

AT&T has correctly explained why this adjustment does not entail a double count with productivity already captured in the variable overhead factor. The adjustment was needed because New York Telephone's CCF had been calculated on the basis of historical 1995 costs, and potential productivity and efficiency gains were not adequately captured, as New York Telephone maintained, by applying that historical CCF to a reduced base. The 10% level, properly ambitious, was selected, as explained in Opinion No. 97-2, in view of the likelihood that the development of competition would lead to productivity gains, and to ensure that all resulting savings were anticipated. The productivity factor is applied to expenses and is generally consistent with the annual total factor productivity (TFP) gain of slightly over

5% contemplated by the PRP decision.[1] To the extent it is slightly higher, it properly recognizes the additional savings that may be attributed to developments singe the PRP, including enactment of the 1996 Act. New York Telephone has shown no basis for reducing that factor, and its petition on this point is denied.

3. Adjustment to the Maintenance CCF

Having found that New York Telephone's maintenance CCF lacked any recognition of productivity improvement in maintenance operations, and again "taking account of the potential sources of productivity gain,"[2] we reduced the maintenance CCF by a 2% labor productivity adjustment, "consistent with that applied in some rate cases."[3] New York Telephone challenges this adjustment on the same grounds cited against the overall 10% productivity adjustment. In addition, it argues, apparently misunderstanding the adjustment, that we erred in stating that the maintenance CCF has been adjusted only for labor cost savings and that additional operational savings should be reflected as well; it contends those additional operational savings already are reflected. It adds that the precedent we cited deals only with possible labor savings, providing no support for an adjustment "to capture other-than-labor savings."[4] Finally, New York Telephone contends that in those cases where a 2% labor

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[1] The 10% productivity factor is applied to expenses and, generally speaking, reduces overall TELRIC-based rates by about 2%. Assuming inflation at about 3% a year, that implies a price-cap-plan productivity offset of 5% and suggests, if national TFP is roughly 1%, annual NYNEX TFP of 6%. The PRP, by similar analysis, contemplated annual NYNEX TFP in a range of 5.3% to 5.5%.

[2] Opinion No. 97-2, mimeo p. 98.

[3] Ibid., mimeo p. 99.

[4] New York Telephone's Petition, p. 25. It is not clear what New York Telephone means here. We nowhere described the purpose of the adjustment as capturing "other than labor savings"; on the contrary, it is intended to capture labor savings.

productivity adjustment was adopted, we allowed a rate increase that captured anticipated cost increases, including general inflation and increased labor costs. No such increases are being allowed here, inasmuch as the CCFs are based on 1995 expense levels without adjustment for cost increases.

Here, too, AT&T responds that New York Telephone has shown no new reason to credit its assertion that the application of historical CCFs to TELRIC investment amounts adequately captures available savings. It sees no basis for assuming we were unaware that the accounts being adjusted might include some non-direct labor expenses and dismisses as "quibbles" New York Telephone's arguments over the significance of the productivity precedents we cited, asserting that the Commission needs no guidance from the parties on how to construe its past decisions.

Because of the adjustments New York Telephone itself had made to the maintenance CCF, as described in Opinion No. 97-2, we were satisfied that the factor was sufficiently forward-looking to obviate application of the general 10% productivity factor. Nevertheless, we saw a need, also described in Opinion No. 97-2, for a labor productivity offset, and we chose a 2% figure in light of rate case precedent. (That no rate increases are being allowed here provides no basis for distinguishing those cases, which were cited only in connection with the proper magnitude of a labor productivity offset and not with respect to the circumstances under which such an offset might be warranted.) New York Telephone's petition offers no basis for modifying this result and is denied on this point.

Deaveraging of Carrying Charge Factors

New York Telephone contends that the decision to geographically deaverage link rates fails to reflect the differences among the zones with regard to expense relationships. As a result, it says, we have deaveraged investment but not expenses, and rates do not track geographically deaveraged costs as much as they might. It asserts we must correct this omission, especially if rates are deaveraged further.

In response, AT&T emphasizes that we deaveraged only loop rates and not rates for other elements, and it suggests that our gradualist approach may have led us to use statewide average CCF factors applicable not only to loop investments but to the investment underlying all other network elements as well. It notes that New York Telephone will be able to address itself to this issue in the forthcoming further consideration of deaveraging and sees no basis for taking any action on it now.

Sprint's response supports New York Telephone on this point.

The decision not to deaverage CCFs grew out of concerns that the record was weaker with regard to deaveraged expenses than with regard to deaveraged investment. For example, in allocating expenses among the four zones, New York Telephone employed internal reports that provided incomplete data. As AT&T suggests, this issue may be addressed in the next phase; no action is needed now.

DEPRECIATION LIVES

We determined that the depreciation lives to be used in estimating the cost of providing network elements should be those most recently set for New York Telephone in the triennial represcription process overseen by the FCC. We rejected New York Telephone's proposal to use shorter depreciation lives (and correspondingly greater depreciation costs) based on Generally Accepted Accounting Principles (GAAP). We agreed with the proponents of the Hatfield Model that the prescribed depreciation lives used in traditional regulation were the correct ones to be used here inasmuch as recent FCC represcriptions have become more forward-looking. But while the Hatfield proponents had used the depreciation lives prescribed by the FCC for Bell Atlantic's Maryland subsidiary, we agreed with New York Telephone that if prescribed lives are used, they should be those recommended by

this Commission for New York Telephone, consistent with the FCC's mandate, for intrastate purposes.[1]

In its petition for rehearing, New York Telephone reargues at great length its case in support of using the shorter GAAP depreciation lives rather than the traditional prescribed lives. It argues, among other things, that because prescribed lives are an incident of traditional cost-of-service regulation, they are inconsistent with the FCC's determination that the 1996 Act precludes the use of traditional cost-of-service regulation as well as with our own rejection of all other incidents of traditional cost-of-service regulation in favor of a forward-looking approach. Accordingly, it contends, the decision "results in a mismatch between a least-cost, forward-looking network and regulatorily prescribed depreciation rates that do not reflect the TELRIC network, but rather are overwhelmingly based upon historic[al] data going back decades."[2]

New York Telephone goes on to cite the FCC's observation that a TELRIC calculation requires treating depreciation in a manner that reflects the expected change in the economic or market value of the carrier's assets and that these considerations are not reflected in the represcription process, which postulates a regulated monopoly environment without competition. It cites as well, in this regard, a decision of the California Public Utilities Commission endorsing the use of GAAP lives for these purposes as well as a statement by the FCC, promulgated after the close of the record in this case, suggesting that incumbent LEC assets may be under-depreciated if

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[1] See, generally, Opinion No. 97-2, mimeo pp. 47-48. In reaching our decision, we acknowledged that New York Telephone was correct that if prescribed rates are used, they should be those for New York Telephone itself and not for Bell Atlantic's Maryland subsidiary. (Opinion No. 97-2, mimeo p. 48.) In its Petition for Rehearing, New York Telephone suggests that that change worked to its detriment inasmuch as it produced a level of depreciation generally even lower than that urged by the Hatfield proponents. (New York Telephone's Petition, p. 27.)

[2] New York Telephone's Petition, p. 28.

their prescribed useful lives exceed their economic lives and that prescribed lives are an inappropriate measure of the expected changes in the economic value of a carrier's investment. Pointing to a January 1997 statement by the FCC staff that "the depreciation schedules specified in a proxy model should be based on forward-looking costing principles and should reflect projected economic lives of investments rather than physical plant lives,"[1] it adds that our own cost manuals recognize that economic lives capture changes in economic value while prescribed depreciation lives do not.

Recognizing that the First Report and Order stated that prescribed rates were a reasonable starting point for a TELRIC analysis, New York Telephone suggests we mischaracterized that statement as a presumption in favor of using prescribed lives and contends, in any event, that it met its burden of showing why business risks justify departing from the prescribed lives. It argues, among other things, that prescribed lives do not attempt to estimate the lives of a new "reconstructed" network that must be assumed in a TELRIC study; that prescribed lives often are unrealistically long, as shown by the frequency with which regulators have to deal with depreciation reserve deficiencies; and that even though the FCC and state regulators have made asset lives shorter in an effort to reflect technological and competitive changes (the factor we cited in reaching the conclusion that the process had become sufficiently forward-looking to be used here), their primary emphasis continues to be on past retirement practices and historical data and mortality analyses. And the FCC's simplification of its represcription process, New York Telephone insists, was intended to reduce regulatory burdens but not to change the depreciation methods applied, which continue to rely on historical booked data. Noting that the FCC has announced its intention to

[1] New York Telephone's Petition, p. 31, citing a document by the FCC staff entitled "The Use Of Computer Models For Estimating Forward-Looking Economic Costs: A Staff Analysis" (released January 9, 1997) ¶61.

institute a further proceeding to explore such issues as the degree to which increased competition and technological change warrant modifying depreciation policies, New York Telephone points out that that proceeding has not yet been instituted and that the represcription process remains largely unchanged.

New York Telephone contends as well that the 1995 New York represcription also was grounded in historical data and made only a very limited attempt to reflect changes to those data. As a result, it takes account of a network that is "not the newly constructed network that the TELRIC construct calls for."[1] It notes that at the time of the represcription, there was no way for staff to anticipate the 1996 Act, the FCC's rules thereunder, and our actions since 1995 to encourage competition. New York Telephone notes that each succeeding represcription has adopted lives shorter than its predecessor and takes this, as well, as evidence that the represcription process has been a poor predictor of the future.

Finally, New York Telephone renews its argument that GAAP-based lives are the ones properly used and disputes the opinion's statement that adopting them here would unduly inflate the cost of network elements. It contends that the GAAP lives were developed after an examination of technology trends and of New York Telephone's infrastructure deployment strategies and that they are the lives it has used for financial reporting purposes since it discontinued the use of the traditional regulatory accounting practices prescribed by Financial Accounting Standards Board (FASB) Statement No. 71. Further, it contends, a thoroughgoing TELRIC analysis would have used lives even shorter than those based on GAAP inasmuch as it would be the assumed TELRIC network that was being depreciated and not the entire embedded base of New York Telephone investments. It therefore regards its proposed depreciation lives as conservative; points to the FCC staff's suggestion, in the analysis previously quoted, that depreciation rates filed by

[1] New York Telephone's Petition, p. 35.

incumbent LECs for financial purposes may be appropriate for costing; and asserts that the New York Commission and its staff also "have consistently recognized the appropriateness of GAAP-based accounting as the telecommunications market becomes increasingly competitive."[1]

Citing various observations in Opinion No. 97-2, MCI responds that New York Telephone has simply failed to rebut what MCI characterizes as the "strong" presumption in favor of using prescribed depreciation rates in the TELRIC analysis.[2] It adds that New York Telephone departs from its use of historical costs only where, as here, the effect of the departure would be to have New York Telephone's competitors subsidize its other business goals.[3]

AT&T responds in greater length and specificity. It contends generally that New York Telephone has simply repeated its earlier arguments and offered, as its only new assertion, a misrepresentation of the FCC's current position on depreciation. More specifically, it insists that the prescribed lives are sufficiently forward-looking to be used for TELRIC purposes. It contends that the FCC's statement on under-depreciation cited by New York Telephone merely describes the circumstances in which under-depreciation could occur and invites comments on whether under-depreciation in fact has occurred; AT&T has submitted comments in that FCC proceeding purporting to demonstrate that the represcription process has not resulted in underdepreciation.[4] AT&T contends as well that the past reserve

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[1] New York Telephone's Petition, p. 38.

[2] As we found, there is a presumption in favor of using prescribed rates and New York Telephone has not rebutted it. Nevertheless, MCI may overstate the FCC's position in the First Report and Order by characterizing it as a strong presumption.

[3] MCI's Response, p. 12.

[4] It cites, among other things, Bell Atlantic having paid $33.3 billion for NYNEX assets having a net book value of only $19.8 billion, suggesting over-depreciation, not under-depreciation. (AT&T's Response, p. 33.)

deficiencies cited by New York Telephone were created before the FCC began to use forward-looking projection life prescription; that New York Telephone's focus on plant retirements is inappropriate and suggests a misunderstanding of the real world; and that the claim that prescribed lives rely unduly on the past is a criticism previously voiced and rejected. Characterizing as wishful thinking New York Telephone's suggestion that a new prescription now would result in shorter lives than those set in 1995, AT&T notes that New York Telephone did not file for an annual update in 1996 or 1997; that by 1995, we had already recognized the potential effects of competition; and that the 1996 Act's emphasis on resale and use of unbundled network elements by New York Telephone's competitors, along with various other factors, could result in newly represcribed rates being, if anything, longer than those prescribed in 1995.

Finally, AT&T sees no basis for reconsidering New York Telephone's claim that GAAP-based lives should be used for a TELRIC study. It emphasizes the tentative nature of the "isolated viewpoint"[1] in the FCC staff report cited by New York Telephone. It adds that at the time of the hearings, no jurisdiction had adopted New York Telephone's witness' proposed depreciation approach for a TELRIC study and that, since then, several have specifically rejected it.

Although New York Telephone has treated this issue at length, it has offered little new and shown no error in our fully explained decision to use prescribed lives. Its petition on this point is denied.

COST OF CAPITAL

Introduction

We used as a modeling input an overall cost of capital of 10.2%, reflecting a cost of equity of 12.1% and a debt/equity

[1] AT&T's Response, p. 38.

ratio of 40%/60%.[1] We reached that result largely on the basis of an analysis of the proxy group of telecommunications firms advocated by AT&T, but with an adjustment of those firms' historical debt/equity ratio from 45%/55% to 40%/60% "in order to bring it, and the resulting overall cost of capital, within the range of those that might characterize a communications firm such as NYNEX operating in the competitive environment we are endeavoring to promote."[2] We also modified AT&T's analysis by rejecting its use of a multi-stage growth model for purposes of its discounted cash flow (DCF) analysis, seeing no need to depart from our traditional use of a single growth model. New York Telephone takes issue with various aspects of this decision.

As in the case of depreciation lives, New York Telephone asserts in general that our analysis here departed little from traditional rate case methods and thus fails to be adequately forward-looking for a TELRIC analysis. More specifically, it contends that the cost of capital takes inadequate account of increased risk and thus cannot be said to satisfy the FCC's mandate that the cost of capital to be used for TELRIC purposes be "risk-adjusted."[3] AT&T responds generally that New York Telephone, for the most part, simply reiterates old arguments and that its one novel point (noted below) lacks any basis.

Proxy Group

Turning first to the question of which comparable companies should be studied, New York Telephone renews its arguments in favor of its own proxy group, comprising the Standard and Poor's (S&P) Industrials. Acknowledging that many of those firms operate in markets that are more competitive than

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[1] See generally Opinion No. 97-2, mimeo pp. 38-40. Page 40 erroneously states the overall cost of capital to be 12.1%; an errata notice corrected that to 10.2%.

[2] Opinion No. 97-2, mimeo p. 39.

[3] First Report and Order, ¶702.

those in which it now operates, New York Telephone nevertheless contends that they represent a proper proxy group because the FCC has said that a TELRIC analysis "simulates the price for network elements in a competitive market,"[1] and it maintains that "for purposes of a TELRIC analysis, all costs that go into the analysis should be the costs that would prevail in a competitive market."[2] New York Telephone notes that the Massachusetts commission has adopted this view.

New York Telephone reiterates as well its view that the AT&T proxy group, comprising the regional Bell holding companies and four other telephone holding companies, improperly carries forward into a TELRIC analysis an approach to cost of capital that may have been proper under traditional regulation but that is inappropriate for TELRIC purposes. Moreover, it contends, even if the proxy group were reasonable, it would have been necessary to adjust the data to recognize the assertedly higher level of competition faced by New York Telephone.

New York Telephone goes on to suggest, for the first time, that if we are unwilling to use the S&P Industrials as the proxy group, we at least base our decision on a wider group of telecommunications companies than only the parents of ILECs, in order to truly mirror telecommunications competition and provide a proper price signal to competitors trying to decide between building their own systems and renting network elements. Noting that AT&T's rebuttal testimony included in the proxy group the three largest interexchange telecommunications companies (AT&T, MCI, and Sprint), New York Telephone suggests that they be included in the analysis in order to make it more representative and truer to the purpose of TELRIC. It calculates that making this change, and leaving in place all other aspects of our analysis, would increase the cost of equity from 12.1% to 12.4% and the overall cost of capital from 10.2% to 10.4%. It

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[1] Ibid., ¶635.

[2] New York Telephone's Petition, p. 40.

calculates as well that applying our DCF method to updated data results in a cost of equity of 12.8%, for both our proxy group and New York Telephone's newly-proposed enlarged proxy group.

In response, AT&T maintains that New York Telephone has shown no reason to depart from the conclusions that financial markets consider the average company in the S&P Industrials to be riskier than telephone companies and that the proper measure of comparable risk is provided by other telephone companies, such as those included in AT&T's proxy group. It adds that New York Telephone's witness made no attempt to show how any of the S&P Industrials are comparable to New York Telephone, nor has it been shown that New York Telephone faces a higher level of competition and a correspondingly greater risk than the other local exchange companies included in the proxy group.

As for New York Telephone's new suggestion to expand the proxy group to include AT&T, MCI, and Sprint, AT&T sees no record evidence to support the claim that doing so would send the proper price signal with regard to building versus renting. It suggests as well--more importantly in its view--that doing so might unlawfully discriminate among the types of potential entry into the local exchange market, contrary to the 1996 Act's prohibition on such discrimination. Nor does AT&T see any evidence supporting the assertion that an expanded proxy group would be truer to the purposes of TELRIC. Asserting that the proxy group we adopted explicitly includes other local exchange carriers subject to the same market opening rules as New York Telephone, AT&T notes that its witness included the major long distance carriers in his rebuttal testimony proxy group only as an experiment that illustrated the invalidity of New York Telephone's proposed reliance on the S&P Industrials.

MCI similarly acknowledges that New York Telephone no longer operates in a totally risk-free environment but sees no basis for regarding it as subject as the same risks as the S&P Industrials. It adds that insofar as New York Telephone's cost of capital is higher than it was in the past, the increase flows from the risks New York Telephone has assumed in providing

advanced technology services and that New York Telephone's shareholders, not its competitors, should bear the risk of that expansion. It suggests, finally, that the Bell Atlantic merger could be expected to reduce New York Telephone's risks and cost of capital.

The arguments here for the most part reiterate those presented in the case-in-chief and establish no basis for concluding that the proxy group we used failed to produce an overall return within the range of reason or was otherwise improper. The new suggestion to include three long-distance companies in the proxy group has not been shown so likely to produce a more reasonable result as to warrant rehearing on its account. Moreover, the 20-basis point increase in cost of capital that New York Telephone calculates to flow from that change would increase the loop price by only about ten cents; and, as noted, recalculation of the rate of return on the basis of updated data as of May 7, 1997 shows the change in proxy group to produce no difference at all.[1] In sum, there is no need to grant rehearing on this point.

Capital Structure

With regard to the capital structure, New York Telephone similarly asserts that the 40%/60% debt/equity ratio, while better than the historical 45%/55% ratio urged by AT&T, fails to reflect market values in the coming competitive environment. It characterizes the ratio as "a backward-looking, accounting concept that measures the book values of debt and equity on [New York Telephone's] historical financial records" and thus violates the FCC's mandate that network element prices

[1] More precisely, the change in proxy group produces a change in return so small as to be lost in rounding. This reference to updated data, it should be noted, is intended only to demonstrate the minimal effect of the change in proxy group. It does not imply any need to update; as in traditional rate cases, the return is set as of the time of the decision and should not be updated at the time requests for rehearing are considered.

not be based on booked accounting costs.[1] It renews its argument in favor of a debt/equity ratio of 25%/75%, which it regards as reflecting market values with respect to both the Commission's proxy group and the more comprehensive one New York Telephone now suggests.

New York Telephone calculates that applying that capital structure to its recalculated equity cost of 12.8% and an updated cost of debt (next discussed) results in an overall cost of capital of 11.6%. Using those data and applying New York Telephone's DCF method rather than ours, it says, produces a cost of equity of 13.1% and a cost of capital of 12.0%.

Here, too, AT&T responds that New York Telephone simply reiterates rejected arguments. It notes our explicit statement that we were adopting a 40%/60% debt equity ratio not as a backward-looking exercise but as an effort to reflect the forward-looking, real-world capital structure. It adds that New York Telephone's witness failed to show that the average S&P Industrials capital structure reflects what New York Telephone's financial managers would attempt to achieve on a going-forward basis and that a supplier of unbundled network elements should be significantly less risky, and consequently more leveraged, than the average telephone holding company and certainly than the average S&P Industrials company.

AT&T is correct; New York Telephone has offered no new arguments warranting rehearing.

Cost of Debt

We used a cost of debt of 7.3%, representing the average (as of December 31, 1996) of Moody's composite rate for Aa rated debt and S&P's composite rate for A rated debt. Noting that this figure is below both New York Telephone's proposed 7.9% cost and AT&T's proposed 7.7%, New York Telephone contends it has no support in the record and suggests it reflects the aberrational effects of a short-term phenomenon inasmuch as the

[1] New York Telephone's Petition, p. 43.

bond market at the end of 1996 was at its lowest point in the last 12 months. Averaging the figures as of April 1997, the latest month available, produces a cost of debt of 7.8%, and New York Telephone urges use of that figure.

AT&T responds that the cost of debt must be determined as of some date certain and that New York Telephone has shown no basis for changing the data points we used. It charges New York Telephone with attempting to pick selectively from post-record market data in order to use a data point that would increase the cost of capital.

AT&T is correct; there is no need to update the cost of debt, which must be determined as of some time certain. In any case, increasing the cost of debt from 7.3% to 7.8%, as New York Telephone proposes, would increase the link rate by only about five cents.

DCF Method

We rejected, as unnecessary and contrary to precedent, proposed adjustments by New York Telephone to reflect quarterly dividends and flotation costs. In its petition, New York Telephone contends that the precedents, more than a decade old, reflect traditional approaches and that the adjustments are now needed inasmuch as they reflect factors that investors consider in assessing competitive firms. It maintains that competitive firms must consider the cost of quarterly payment of dividends and of floating capital, particularly equity, and that to set network element rates that omit the cost of floating capital is to favor firms that choose to rent those elements from New York Telephone as against firms that must float capital in order to build their own facilities. It asserts that "including these costs, both flotation costs and the costs of quarterly payment of dividends, fulfills the aim of emulating the cost of a competitively provided network, under TELRIC."[1]

[1] New York Telephone's Petition, p. 47.

AT&T responds that New York Telephone's claims have already been rejected and that its new arguments are extra record. It sees no relevance in what it characterizes as New York Telephone's speculation about flotation costs for potential competitors.

Once again New York Telephone has shown no error of fact or law, nor has it presented any new arguments warranting rehearing.

FORWARD-LOOKING COST SAVINGS

MCI and MFS contend that we failed to give adequate recognition to anticipated future efficiency gains. MCI asserts that "the Commission has repeatedly determined, in service quality reviews and otherwise, that [New York Telephone] is not operating in an efficient manner."[1] Citing New York Telephone's claims at the hearings that there were no further efficiency gains to be reflected in a TELRIC study, MCI contends that Opinion No. 97-2 noted the parties' opposing positions on this matter but did not rule on it. Pointing in particular to recent press coverage of possible efficiency gains resulting from the Bell Atlantic-NYNEX Merger, it asks that the record be opened on this point and that an informed decision be made.

MFS similarly complains that we did not adequately address the issue of whether merger savings, which New York Telephone characterized as speculative, should be reflected. Noting that the merger is now on the verge of being consummated, it contends that the consolidated operations resulting from the merger will diminish duplicative common costs and that steps must be taken to insure that the resulting efficiencies are passed on to purchasers of unbundled loops. It urges that the matter be considered in the continued phase of the proceeding now contemplated for deaveraging.

New York Telephone responds that the extent and nature of merger-related savings remain uncertain and that any such

[1] MCI's Petition p. 27.

savings that may materialize are better taken into account through a revised TELRIC analysis later than through speculation now. It also reiterates its claim, raised in its own petition for rehearing, that Opinion No. 97-2 reflects speculative productivity savings lacking any basis in the record and that it would be wrong to compound that error by reflecting additional productivity here.

The parties seeking rehearing have shown no basis for changing our treatment of forward-looking cost savings. They have been reflected to a degree in the productivity adjustments, and may be considered further, in future proceedings, as and if they develop.

DIGITAL LOOPS

During the proceeding, MFS had requested that we set rates for two types of digital lines, referred to as asymmetrical digital subscriber lines (ADSL) and high-bit-rate digital subscriber lines (HDSL). We determined that ADSL and HDSL were not among the elements under review here and added that "MFS, if it wishes to raise issues relating to them, may do so, in the first instance, through renewed negotiations with New York Telephone regarding its interconnection agreement. If those negotiations do not resolve the issue promptly, MFS may apprise us, and we will consider what further action may be needed."[1]

In its petition, MFS contends that this approach allows New York Telephone to evade the terms of its interconnection agreement with MFS, in which, MFS says, New York Telephone contractually bound itself to provide cost support for ADSL and HDSL so that rates could be set in this proceeding. New York Telephone failed to produce that support, and MFS contends that it can now prolong negotiations and leave the matter unresolved. It asks that we apply the rates for the digital loops that were considered (referred to as "two-wire conditioned" and "four-wire conditioned" loops, both of them components of the Integrated

[1] Opinion No. 97-2, mimeo p. 82.

Services Digital Network (ISDN)) to ADSL and HDSL on an interim basis and that we direct New York Telephone to submit cost support for permanent ADSL and HDSL rates in the continued phase of this proceeding.

MFS also challenges what it sees as the tacit decision to set the rates for digital (ISDN) loops on the basis of an all-fiber-feeder construct that results in digital loop rates that are nearly double the voice-grade loop rates. Renewing its claim that the use of fiber for digital loops is particularly inefficient, it asserts that we failed to address its evidence to that effect. It contends that the resulting rates also are discriminatory, inasmuch as New York Telephone continues to provide the majority of its own digital loops over copper and will go on doing so at the same time as it charges competitors the assertedly inflated costs of a fiber-based digital loop. It asks that we declare the two-wire conditioned and four-wire conditioned loop rates to be interim, that we examine digital loop rate issues further in the continued phase of the proceeding, and that we allow parties to supplement the record and brief these issues again.

In response, New York Telephone sets forth what it characterizes as the relevant portion of its interconnection agreement with MFS and asserts, on that basis, that it has no contractual obligation to provide cost support for ADSL or HDSL. It notes that even the offering of ADSL is made contingent on successful completion of a technical trial and resolution of various other issues and that consideration of costs and rates for ADSL and HDSL would be premature. Rejecting MFS' suggestion that it is evading the terms of the agreement, New York Telephone contends that it is in fact MFS "that is attempting an end run around the provisions of the interconnection agreement."[1]

With respect to ISDN costs, New York Telephone acknowledges that copper loops can reduce costs for what is

[1] New York Telephone's Response, p. 40.

termed basic rate ISDN.[1] But it contends that introducing copper loops into the forward-looking network to reduce costs for ISDN customers would increase costs for non-ISDN customers, contrary to the overall forward-looking efficiency required by a TELRIC analysis. It asserts that requiring all customers to bear increased costs to support lower rates for a much smaller number of ISDN customers is consistent neither with the FCC's First Report and Order nor with what it considers to be sound regulatory policy.[2] Turning to MFS' allegation of unfair discrimination (in that New York Telephone will continue to provide the majority of its own digital loops over less expensive copper), New York Telephone states that this is not the only instance of a disparity between forward-looking TELRIC costs and actual provisioning practices and that in most instances, New York Telephone's continued use of its embedded plant requires it to bear higher costs than those reflected in the TELRIC analysis. It maintains that MFS and the Hatfield sponsors should not be allowed to pick and choose, in effect requiring New York Telephone to base prices on forward-looking technology when it is cheaper and on embedded technology when it is cheaper.

With respect to ADSL and HDSL, New York Telephone has responded persuasively to MFS's petition. Consideration of costs and rates for services provided using these technologies is not now necessary, and the applicability of these technologies in the forecast network is unproven. If and when ADSL and HDSL are about to be deployed commercially, New York Telephone will of

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[1] ISDN exists in two principal transmission formats: basic rate and primary rate. Basic rate permits the transmission of two standard 64 kilobyte per second (kbps) voice or data channels and a 16 kbps data channel. Primary rate ISDN permits the transmission of 23 standard 64 kbps channels and one 16 kbps channel. Primary rate ISDN links can be connected with digital switches through a standard IDLC connection. Basic rate ISDN presents various technical considerations that render the use of a copper interface more efficient.

[2] New York Telephone's Response, p. 42.

course be expected to fulfill its obligations to offer such services on a wholesale basis.

As for ISDN costs, New York Telephone is correct that MFS's proposal, considered alone, would unfairly increase costs for the majority of customers in order to benefit a minority. But that does not end the inquiry. New York Telephone's study assumed that in the context of a forward-looking fiber network, basic rate ISDN links and ports could be offered only via costly UDLC connections and set the price on that premise. Recent technological developments reported by New York Telephone itself[1] suggest, however, that before long, perhaps within a year, it will be feasible to provision basic ISDN via IDLC connections, thereby reducing its cost. Consistent with its forward-looking approach, New York Telephone will be required to price basic ISDN accordingly, thereby addressing, in part, MFS's legitimate concerns and simultaneously enhancing New York Telephone's incentive to pursue vigorously the development of IDLC connections for basic ISDN. Specifically, New York Telephone should recalculate on this basis, and submit for approval, the rates for (1) two-wire conditioned digital links; (2) the basic rate ISDN port; and (3) four-wire analog links. (Two-wire analog and four-wire conditioned links already are costed on the basis of IDLC; thus, the effect of this change would be to use IDLC for all links.) To that extent, MFS's petition is granted.

OVERALL PRICE LEVEL

Citing our observation that

> the major cities [loop] price is low enough to avoid discouraging competitive market entry in the denser urban markets where it is likely to develop soonest, and the price in other areas is not so high as to be

[1] See New York Telephone's Initial Brief, pp. 70-71.

> disruptive to the development of competition there[,][1]

AT&T asserts that these "are essentially words of prayer, not words of analysis of anything in the record of this proceeding"[2] and that the record supports the opposite conclusion, that the loop rates will foreclose facilities-based competition incorporating loop resale. AT&T complains that we have set the highest major cities loop rate in the country, higher than the statewide average rate in various states and far above the rates in assertedly comparable cities. The rural loop rate, meanwhile, is only eight cents below the existing rate, which has not permitted the development of competition.

AT&T sees this decision as part of a recent pattern, in which the Commission has combined "pro-competitive rulings establishing the operating arrangements, terms and conditions that would foster competition, with rates that preclude competitors from translating any of the structural arrangements into actual competitive alternatives for consumers."[3] It cites in this regard the Rochester Telephone Open Market Plan and New York Telephone's PRP, in both of which, it claims, we took the lead in adopting pro-competitive structural provisions but then compromised our own efforts by setting rates (in one instance a wholesale discount; in the other, access charges) that assertedly had the effect of precluding the very competition we sought to encourage.

AT&T sees the current decision as continuing that pattern. It praises the landmark pro-competitive structural changes but warns that the rates set here are even more anti-competitive than those set under the Rochester Telephone Open Market Plan. It charges that the rates are unlawful as

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[1] Opinion No. 97-2, mimeo p. 130.

[2] AT&T's Petition, p. 2.

[3] Ibid., p. 4.

well, and notes, ominously, that "the Commission still has time to correct these fundamental errors of both fact and law--which could cost New York consumers $400 million annually--before any federal court proceedings."[1]

MCI similarly alleges that the rates we set for links are among the highest in the country and that the major cities rate is "patently excessive" in comparison with loop rates in assertedly comparable cities. Sprint also compares the loop rate to those set in other jurisdictions and suggests the high loop rate may preclude it from offering local service in New York. NYCHA, in its response, endorses AT&T's observations regarding the alleged pattern in our decisions and asserts that New York Telephone, which faces no real competition, is charging prices so high as to jeopardize New York's business climate. It comments that since April 1, it has begun to see proposals to serve large business customers that "fix one rate for loops/lines in 24 of the 25 largest cities in the country--and a separate, higher rate for New York."[2]

In response, New York Telephone characterizes AT&T, MCI, and Sprint as offering self-serving, result-oriented arguments growing out of their interest, like that of all consumers, in securing the lowest possible prices for the products they must purchase. It sees no basis for assuming that loop prices in New York City should be lower than elsewhere, citing, among other things, the high costs of construction in New York City and the congestion costs that may offset economies of scale. It warns against artificially low element prices that would encourage uneconomic market entry and prevent New York Telephone from recovering its costs, thereby endangering the quality of the network, or that might discourage true facilities-based competition by reducing the incentive to invest in alternative structure. It characterizes the complaint that

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[1] Ibid., p. 7.

[2] NYCHA's Response, p. 2.

the approved rates are "just 'too high' [as] an affront to the substantial effort and attention devoted to this process by scores of individuals over many months."[1]

Notwithstanding the parties' arguments, we remain satisfied that we have fairly and reasonably resolved the issues in this case and that the rates we have set, which are fully consistent with the 1996 Act, suitably advance our goal of encouraging the development of local service competition. Insofar as further rate deaveraging may be warranted in pursuit of that goal, we have already noted our intention to consider it, along with other pertinent matters, in the ensuing phase of the proceeding.

CONCLUSION

For the reasons described above, the rate for digital elements should be modified to reflect the use of IDLC connections in providing basic ISDN. In all other respects, all petitions for rehearing are denied.

The Commission orders:

1. The petition for rehearing of MFS Intelenet of New York, Inc. is granted to the extent described in the foregoing opinion and is otherwise denied.

2. Within 30 days of the date of this opinion and order, New York Telephone Company shall submit tariff amendments consistent with the foregoing ordering clause.

3. All other petitions for rehearing of Opinion No. 97-2 are denied.

4. These proceedings are continued.

By the Commission

[1] New York Telephone's Response, p. 5.

(SIGNED) JOHN C. CRARY
Secretary

ACRONYMS USED IN THIS OPINION[1]

ADSL	Asymmetrical Digital Subscriber Line. It can provide voice and wideband applications to residences over a single copper pair.
ARMIS	Automated Reporting Management Information System. A financial report filed by ILECs with the FCC.
BLS	United States Bureau of Labor Statistics
CCF	Carrying Charge Factor. A device for converting investments into recurring expense levels.
CSA	Carrier Serving Area.
DLC	Digital Loop Carrier.
GAAP	Generally Accepted Accounting Principles.
HDSL	High-Bit-Rate Digital Subscriber Line. It can convert two copper pairs into a higher-capacity link.
IDLC	Integrated Digital Loop Carrier. One of two ways (the other is Universal DLC) by which DLC loops can interface with a digital switch.
ILEC	Incumbent Local Exchange Carrier. The LEC, formerly a monopoly, that has historically served in a particular area.
ISDN	Integrated Services Digital Network. An advanced technology that permits end-to-end transmission of signals in digital format.
LEC	Local Exchange Company.
NRC	Non-Recurring Charge.
PRP	Performance Regulatory Plan. The regulatory plan approved for New York Telephone in Case 92-C-0665.
SCIS	Switching Cost Information System. A model, maintained by Bellcore, for pricing switches.
SONET	Synchronous Optical Network. A system for deploying high capacity fiber optic systems.

[1] Omitted from this list are some commonly used acronyms representing the names of parties or government agencies.

TELRIC	Total Element Long Run Incremental Cost. A term coined by the FCC for its adaptation of the TSLRIC costing standard to the costing of network elements.
TFP	Total Factor Productivity.
TSLRIC	Total Service Long Run Incremental Cost. A costing construct that attempts to determine the cost of providing the entire increment of a service demanded by the firm’s customers.
UDLC	Universal Digital Loop Carrier

		Equipped Lines 12/31/94	Working Lines June 95	Book Amount 12/31/94	Working Line Calculation Investment Book Amount 12/31/94	Investment Per Equipped Line	Investment Per Working Line
77th St -- RSC	1	979	--	327,750	--	$334.78	--
Armonk -- RSC	2	5,600	5,817	420,365	420,365	$75.07	$72.26
Ballston Spa -- 5RSM	3	9,815	9,565	3,240,650	3,240,650	$330.17	$338.80
Chittenango -- SRSC	4	4,494	4,281	1,409,325	1,409,325	$313.60	$329.20
Clintondale -- 5RSM	5	3,111	3,025	1,027,250	1,027,250	$330.20	$339.59
Eden -- 5RSM	6	3,023	2,896	998,200	998,200	$330.20	$344.68
E 79th St. -- D100	7	39,389	43,460	11,775,885	11,775,885	$298.96	$270.96
Greenwich Co. -- 5RSM	8	8,480	--	2,800,000	--	$330.19	--
Greenwich Co. -- 5ES	9	39,077	37,062	11,851,700	11,851,700	$303.29	$319.78
Guilderland -- D100	10	28,776	26,895	8,602,920	8,602,920	$298.96	$319.87
Hauppauge -- 5ORM	11	765	--	262,500	--	$343.14	--
Holley -- RSC	12	3,325	3,383	1,113,660	1,113,660	$334.94	$329.19
Hunter -- SRSC	13	1,551	1,374	486,450	486,450	$313.64	$354.04
Jamaica -- RSC	14	1,251	--	419,175	--	$335.07	--
Jordan -- SRSC	15	4,252	3,947	1,333,425	1,333,425	$313.60	$337.83
Latham -- 5ES	16	21,951	20,012	6,657,700	6,657,700	$303.30	$332.69
Lewiston -- RSC	17	4,241	4,285	1,000,000	1,000,000	$235.79	$233.37
Maine -- RSC	18	1,629	1,575	545,790	545,790	$335.05	$346.53
Melville -- 5ORM	19	485	--	166,250	--	$342.78	--
Middleport -- 5RSM	20	2,320	2,349	766,150	766,150	$330.24	$326.16
Newfane -- 5RSM	21	3,547	3,544	1,171,100	1,171,100	$330.17	$330.45
North Collins -- 5RSM	22	2,121	2,074	700,350	700,350	$330.20	$337.68
Orchard Park -- 5RSM	23	9,982	10,079	3,295,950	3,295,950	$330.19	$327.01
Pittstown -- SRSC	24	1,199	1,129	376,050	376,050	$313.64	$333.08
Portchester -- D100	25	31,918	30,097	10,140,240	10,140,240	$317.70	$336.92
Springville -- 5RSM	26	4,882	4,755	1,612,100	1,612,100	$330.21	$339.03
Stanfordville -- 5RSM	27	1,319	1,328	435,400	435,400	$330.10	$327.86
Syra. S. Salina -- 5ES	28	17,078	14,636	5,179,650	5,179,650	$303.29	$353.90
Troy 4th St. -- D100	29	35,459	30,720	10,600,815	10,600,815	$298.96	$345.08
Utica -- 5ES	30	58,755	50,815	17,819,900	17,819,900	$303.29	$350.68
Wappingers Fls -- 5ES	31	15,109	13,899	4,582,550	4,582,550	$303.30	$329.70
Westerlo -- SRSC	32	1,183	1,097	370,875	370,875	$313.50	$338.08
Wingdale -- 5RSM	33	2,218	2,166	732,200	732,200	$330.12	$338.04
Alby Washington -- 5ES	34	51,234	44,001	15,538,950	15,538,950	$303.29	$353.15
Amherst -- 5ES	35	35,542	32,219	10,779,650	10,779,650	$303.29	$334.57
Clarksville -- SRSC	36	909	825	284,970	284,970	$313.50	$345.42
Fairview -- SRSC	37	590	--	184,920	--	$313.42	--
Kerhonkson -- 5RSM	38	3,891	3,845	1,284,850	1,284,850	$330.21	$334.16
Ticonderoga -- RSC	39	3,613	3,195	350,641	350,641	$97.05	$109.75
Tratman Ave -- 5ES	40	25,440	--	7,715,750	--	$303.29	--
Tuckahoe -- D100	41	41,500	35,504	10,600,000	10,600,000	$255.42	$298.56
Yonkers - D100	42	78,500	68,751	8,010,100	8,010,100	$102.04	$116.51
Total -- Original 33 Switches		369,284	336,265	112,222,325	108,246,650	$303.89	$321.91
Total -- All 42 Switches		603,924	518,788	166,224,041	154,675,446	$275.24	$298.15
Total -- 41 Switches (Excluding Yonkers)		525,424	450,037	158,213,941	146,665,346	$301.12	$325.90
Total -- 38 Switches (Excluding Yonkers, Armonk, Lewiston & Ticonderoga)		517,570	442,557	156,863,300	145,314,705	$303.08	$328.35

Note: Equipped Lines and Investment Amounts are from the 2/5/95 Depreciation Represcription Report.

Note: Working Lines are from the June 1995 NYNEX Access Service Planning Guide. Seven switches were dropped from the investment per working line calculations since working lines for those switches were not listed in the Planning Guide.

Explanation for the 5.72% Reduction in Switch Prices

* Staff relied upon the annual per line switch prices for RHCs from the McGraw Hill study (Exhibit 144) in order to develop the 5.72% factor.

* Table 3-37 in section 3.5 of the McGraw Hill study (exhibit 144) lists per line digital switch prices for the RHCs for 1994 through 1999.

* The RHC per line switch prices were $105, $102, $99 and $96 for 1994, 1995, 1996 and 1997, respectively.

* Staff estimated a $108.18 per line switch price for 1993, by increasing the 1994 per line figure of $105 by 2.9429%. 2.9429% was the average decrease in switch prices for the RHCs from 1994 through 1997.

* The decrease in RHC switch prices from $108.18 per line in 1993 to $102 per line in 1997 is 5.7159%.