Verizon had no need to specifically disprove AT&T's adjustment. He invited the parties to address the matter further on exceptions.

AT&T now asserts that the Judge "inexplicably forgives Verizon's entire failure of proof and improperly shifts the burden of proof to AT&T."[183] It contends that it submitted its adjustment to reflect fully the sharing of pole structures in Verizon's cost calculations and that the issue of multiple sheaths was raised only by Verizon in responding to the adjustment. It therefore sees no basis for the conclusion that AT&T bore the burden of proof on the issue.

Verizon responds that its rebuttal testimony reflected and explained its adjustment to correct the error in its original testimony that AT&T had identified. It contends that AT&T has not supported its challenge to Verizon's adjustment and that "Verizon's burden of proof does not 'kick in' with respect to specific challenges until the challenging party's burden of going forward is satisfied."[184]

AT&T's exception does not provide further substantive explanation of its adjustment, as the Judge invited, but simply disputes the Judge's treatment of the burden of proof issue. But that treatment was correct and consistent with longstanding practice, and AT&T's exception therefore is denied.

Item I. AT&T charged that Verizon in effect applied too low a fill factor to inner duct[185] by first assuming that each conduit carries three inner ducts, two of which are used and one of which serves as a spare, thereby establishing a tacit utilization factor of 66.7%; and then applying a 60% utilization factor, reducing the effective factor to only 40%. Verizon contended that the 60% utilization factor accounts for the spare ducts in a duct bank rather than the spare inner duct in a duct,

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[183] AT&T's Brief on Exceptions, pp. 38-39.

[184] Verizon's Reply Brief on Exceptions, p. 23.

[185] "Inner duct" refers to small pipes or tubes placed inside a conventional duct to allow the installation of multiple wires or cables.

but the Judge found that it had failed "to disprove the reasonable allegation that it overstates costs through overlapping fill factors that provide more excess capacity than is needed,"[186] and he adopted AT&T's adjustment.

Verizon excepts, arguing that the recommendation effectively assumes that only the number of conduits needed at any given time would be deployed in a trench. That, however, would require frequent costly and disruptive outside plant work to open trenches and add new conduits as demand grows. It argues that the third inner duct cannot be used to satisfy demand growth because it is there to provide contingency capacity, and cannot be used on a planned basis to support cable additions or emergency maintenance. In any event, it adds, inner duct would not be used at all in conduit containing copper distribution cable.

AT&T responds that Verizon has not shown any flaw in the Judge's conclusion that a 40% fill factor overstates the amount of needed excess capacity and it again charges that Verizon is seeking to have current users pay 100% of the cost for facilities that would be only 40% used.

Verizon's arguments explain why two types of fill factor need to be recognized here, but they fail to demonstrate the absence of overlap between them and the need for a cumulative fill factor as low as 40%. The Judge's resolution of the issue was reasonable, and Verizon's exception is denied.

Dark Fiber

"Dark fiber" refers to a fiber optic strand within an in-place fiber optic sheath that is "not connected to electronic equipment needed to power the line in order to transmit information."[187] It is offered only on an as-is, where-available basis, where spare facilities exist. Rhythms/Covad accordingly argued that Verizon incurs no capacity costs in connection with dark fiber and that CLECs purchasing it should not pay capacity

[186] R.D., p. 117.

[187] Verizon's Initial Brief, p. 155.

costs. The Judge agreed with Verizon, however, that "when all is said and done, the provision of a dark fiber cable would mean one less spare was available for other purposes, and the purchasing CLEC should bear the associated costs."[188] Noting, however, the possibility that Verizon might be able to recapture a dark fiber cable if it were needed--a possibility raised by Rhythms/Covad on the basis of information from a New Jersey proceeding--the Judge suggested that such a right of recapture might reduce or eliminate the capacity costs associated with dark fiber. The record was unclear with regard to the right of recapture, and he asked Verizon to clarify the matter on exceptions.

In its brief on exceptions, Verizon confirms that its New York dark fiber tariff provides no right of recapture. It adds that even if there were a right of recapture, the CLEC would be using and benefiting from a Verizon facility and should pay a capacity cost for the period in which it is used. Rhythms/Covad suggest that Verizon's offering of that argument--which they dispute--betokens an intention to recapture dark fiber despite its tariff provision, and they argue that Verizon's reference to a tariff provision that they regard as inconclusive fails to provide the clarification of the matter requested by the Judge. It seems clear, however, that the tariff provision precludes recapture and that capacity costs should be allowed, as the Judge recommends; we need not reach the hypothetical question of whether the existence of a right of recapture would warrant a different result.

Rhythms/Covad except to what they characterize as the Judge's failure to address himself to their separate argument that no fill factor should be applied to dark fiber. They assert that dark fiber in effect is a product of fill factors, coming into existence because Verizon placed more fiber in service than was needed and that the cost of the spare fiber is already recovered through the application of fill factors in

[188] R.D., p. 118.

other rates. They warn that allowing a fill factor for dark fiber would permit multiple recovery of those costs.

Verizon responds that UNEs always are drawn from spare capacity and are not provisioned by assigning to the CLEC a loop that is already in use. It explains that "an overall pool of interoffice fiber exists, with a level of spare that is reflected in the appropriate utilization factor, and all orders for fiber transport facilities, whether 'lit' or dark are filled from the spare in that pool. (A similar analysis applies to loop dark fiber.)"[189] It therefore sees no basis for a fill factor for dark fiber any different from that used generally.

Verizon's response is persuasive; Rhythms/Covad's exception is denied.

House and Riser Cable

House and riser cable is placed in a multi-story building, running from a point of interconnection within the building, often in the basement, to the network side of the customer's network interface device. Several issues related to house and riser rates were posed and resolved by the Judge; the issues that persist on exceptions involve the fill factor and the house and riser asset inquiry charge.

1. House and Riser Fill Factor

In the First Elements Proceeding, Verizon proposed and we adopted a fill factor of 65% for house and riser cable. In the present proceeding, Verizon proposed to reduce that factor to 40%. AT&T suggested the 56% fill factor it recommended for distribution plant generally, and the CLEC Coalition urged retention of the 65% factor used in the First Proceeding. The Judge recommended a fill factor of 60%, finding, among other things, that Verizon had not shown why it here proposed to apply the distribution fill factor to house and riser cable even though it had proposed a much higher factor in the First Proceeding.

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[189] Verizon's Reply Brief on Exceptions, p. 24.

Verizon excepts, contending that the factor proposed in the First Proceeding should not govern here inasmuch as the purpose of this proceeding is to update, extend, and refine the studies used earlier. It cites the difficulty and expense of augmenting capacity within an existing building and asserts that with the exception of undeveloped lots, the factors bearing on utilization factor for distribution cable generally apply as well to house and riser cable. If anything, it suggests, use of the same factor overstates the achieved utilization in high rise buildings, given the need to provide extra capacity at construction in order to avoid costly additions later. It notes as well AT&T's use for house and riser cable of the same 56% fill factor it uses for distribution cable generally.

AT&T responds that Verizon's exception merely asserts that the factor adopted in the First Proceeding should not govern here but fails to offer any reasons or explanation. The CLEC Coalition likewise asserts that Verizon has not shown why the factor should be reduced to such a great extent and it notes that AT&T, in recommending the same factor for distribution and house and riser, called for the factor to be 56%. The CLEC Alliance cites the argument that house and riser utilization should be higher than distribution utilization generally because it serves a fixed area with more predictable growth rates and comparatively smaller augmentation costs.

As the Judge found, the factors tending to increase the house and riser fill factor in comparison with that for distribution cable are offset by the countervailing factors identified by Verizon. It is noteworthy as well that AT&T, like Verizon, appears to believe that offset is total, advocating use of the same fill factor (56% in AT&T's case; 40% in Verizon's) for both elements. At the same time, we cannot disregard the fact that in the First Proceeding, Verizon advocated a much higher fill factor for house and riser cable than for distribution cable. Verizon is not bound by the First Proceeding, nor are we, and methodological improvements are among the purposes of the present case; but the considerations cited here as warranting the same fill factor for the two

services are not newly discovered and Verizon has not fully explained its significant change of position.

In all, it appears to us that house and riser cable should have a higher fill factor than distribution cable, but that the difference should be less than the ten percentage points the Judge recommends. We will use a factor of 55%, the midpoint of the 50%-60% range.

2. Asset Inquiry Charge

The house and riser asset inquiry charge is imposed when a question about ownership of house and riser cable cannot be answered through the database available free of charge on Verizon's website and intervention by engineers is needed. AT&T urged rejection of the charge, contending that it improperly requires CLECs to bear the costs created by historical inadequacies in Verizon's inventory records. The Judge determined that a strict TELRIC construct might require disallowance of the costs even if Verizon had not acted imprudently (in the classical regulatory sense) in designing its system, inasmuch as the costs might not have been incurred at all had the embedded record keeping system been designed with the provision of UNEs in mind. He nevertheless recommended allowance of the costs, on the grounds that "there is no showing of imprudence; the costs are real and calculated in a forward-looking manner; it seems likely that at least some of these costs would be incurred in connection with a database that contemplated provision of UNEs; and denying the costs outright would incur the risk of assuming a 'fantasy' record keeping system."[190]

The Attorney General excepts, arguing, first, that Verizon needs accurate information regarding asset ownership for its own business purposes, without regard to provision of UNEs. Accordingly, it incurs the associated costs even without providing UNEs. In addition, the Attorney General asserts, it may be proper for CLECs to pay for the cost of making house and

[190] R.D., pp. 122-123.

riser asset records available to them, but the recommended decision does not state that Verizon has documented those particular costs. Verizon does not respond.

Verizon has reasonably documented the costs at issue (subject, of course, to the generally applicable adjustments we are adopting), and the Judge reasonably explained why they should be allowed, taking account of the sorts of concerns raised by the Attorney General. The exception does not warrant changing that result, and it is denied.

Loop Rate Deaveraging

Verizon proposed to continue the existing arrangements for deaveraging loop rates into three zones: Manhattan (Zone 1A), major cities (Zone 1B), and the remainder of the State (Zone 2).[191] FairPoint proposed an alternative, revenue-neutral, deaveraging plan intended to foster local exchange competition in some of the more densely populated areas now included in Zone 2; in effect, it would distinguish between small cities and suburban areas on the one hand and rural areas on the other. FairPoint offered five specific proposals, all intended to insure "that the Rural rateband would . . . apply to truly rural areas and not to the downtown area of smaller cities and towns. Each proposal is grounded in the complementary principles that there is a strong correlation between population density and loop costs, and that areas with similar population density should be grouped into the same unbundled loop rate band."[192]

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[191] The FCC's rules require us to "establish different rates for elements in at least three defined geographic areas within the state to reflect geographic cost differences" (47 C.F.R. §51.507(f).) In the First Proceeding, decided while that rule was stayed, we initially established only two zones: Zone 1 (called "major cities" and comprising loops served by central offices with a density greater than 1,500 loops per square mile) and Zone 2 (the remainder of the State). After the TELRIC rules were reinstated, we accepted Verizon's proposal to establish Manhattan as a separate zone.

[192] FairPoint's Initial Brief, p. 2.

The Judge expressed sympathy for FairPoint's goal of promoting the development of local service competition in smaller cities, but he found that Verizon had shown FairPoint's proposals to be flawed in both theory and practice: "Among other things, there appears to be a very significant difference, not adequately recognized by FairPoint, between a densely populated area large enough to encompass an entire central office (or more) and one that constitutes only a portion of a central office that comprises as well areas of much lower density. I recommend rejection of FairPoint's proposals and continued use of three-zone deaveaging in the manner proposed by Verizon and seemingly acceptable to all other parties."[193] FairPoint and Broadview except.

FairPoint's brief on exceptions expresses support for the loop rates recommended for Zone 2 but believes it justified adoption of one of its alternative deaveraging plans. It does not repeat its arguments but responds only to the Judge's concern about deaveraging rates at a sub-central office level. It acknowledges the difficulties associated with any such arrangement, and urges us to consider implementing its alternative rate structure where the zones comprise distinct central offices.

Verizon responds that breaking out a suburban zone from the existing Zone 2 would substantially increase rates for the remaining rural customers; its analysis suggests those rates could go as high as $36.62 per loop per month. It concludes that FairPoint's rate plan would benefit FairPoint but foreclose any possibility of competition in the rural parts of the State.

FairPoint has not shown that the potential benefits of further deaveraging outweigh its practical difficulties and unintended adverse consequences for rural areas. Its exception is denied.

Broadview says it supports the recommended decision's loop rates for Zone 1A (Manhattan) and Zone 2 (rest-of-state), but expresses concern over the recommended rate increase for

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[193] R.D., p. 106.

Zone 1B (major cities), in which most of its customers reside. It asserts that "the prime driver to competitive growth is likely to be small to medium business, those businesses that are often located near or at the fringe of dense urban areas,"[194] in density zone 1B.

Verizon responds that Broadview offers no specific criticisms of the recommended decision's computation of rates for zone 1B and fails to meet the requirement of our rules[195] that exceptions specifically identify the basis on which they rest.

The increase to which Broadview excepts grows out of the fact that the existing Zone 1B rate is artificially low, for it was set in the First Proceeding before Zone 1 had been divided and reflects average costs for that entire zone. When Manhattan was broken out as a separate Zone 1A with a deaveraged, lower rate, the rate in Zone 1B was left unchanged instead of being increased to reflect the higher deaveraged costs in the remainder of the original Zone 1. That historical anomaly is now being corrected; and while Broadview's concern about the resulting Zone 1B increase is understandable, it points to no error requiring correction. Its exception is denied.

In its own brief on exceptions, Verizon notes the FCC's requirement that UNE rates be deaveraged into at least three defined geographic areas to reflect geographic cost differences, cites our conclusion in the First Proceeding that there were no significant geographical variations in the costs of elements other than loops, and explains that it proposed to continue that approach here. It believes the Judge accepted that proposal but did not say so explicitly and asks us to clarify the matter.

It seems clear that the Judge agreed with Verizon that only loop rates should be deaveraged; in any event, we clarify that that is our intention, except for the possible deaveraging of interoffice transport rates discussed below.

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[194] Broadview's Brief on Exceptions, second unnumbered page.

[195] 16 NYCRR §4.10(c)(2)(iii) and (iv).

INTEROFFICE TRANSPORT

Interoffice transport facilities comprise large capacity cables and associated electronic equipment used to carry calls between switches. Within the broad category are dedicated transport--a facility purchased and used entirely by one CLEC--and shared transport, involving facilities used by more than one carrier, each of which pays for its share on a usage basis. The rates for shared transport are based on those for dedicated transport. Accordingly, though the issues disputed on exceptions pertain specifically to dedicated transport, their resolution affects rates for shared transport as well.

Ports Per Node

Verizon's dedicated transport cost study assumes 100% deployment of synchronous optical network (SONET) transport rings with 100% fiber facilities, a forward-looking technology. Each SONET ring provides 48 DS3 connections. AT&T contended that Verizon had understated the number of ports that must be used at each SONET node to provide the 48 DS3s, thereby overstating its investment per DS3 and, in turn, the cost of dedicated interoffice transport. More specifically, AT&T calculated, on the basis of Verizon's assumptions, that each node must have on average approximately 26 ports. (That figure was based on the need for 96 ports to support 48 DS3s, since each DS3 enters the ring at one node and departs it at another. Verizon asserted there were 3.76 nodes per ring, implying approximately 26 ports per node.) Verizon's study, however, assumed only 16 ports per node, thereby substantially overstating, in AT&T's view, the investment per DS3. In rebuttal, Verizon acknowledged the inconsistency identified by AT&T but maintained that even though its current network in fact has 3.76 nodes per SONET ring, its cost study network properly assumed 6 nodes per ring, equivalent to 16 ports per node. It claims to have used the figure of 3.76 nodes that characterizes its existing network only to calculate fiber costs (thereby understating them), but not to calculate SONET costs. The Judge

regarded Verizon's explanation as satisfactory and saw no need for any adjustment. WorldCom and Focal except.

Focal argues that Verizon's claim to have resolved the apparent inconsistency should be rejected because a six-node assumption artificially inflates costs; the assumption is inconsistent with anything observed in Verizon's existing network; and, most importantly, the record lacks evidence that a forward-looking network requires six nodes per ring. It suggests that Verizon proposes that figure in order to "avoid recognizing actual costs that reflect efficient engineering and reap enhanced profits by superficially inflating them."[196] It urges that rates be set on the basis of 26 ports per node--i.e., 3.76 nodes per ring--which it regards as demanded by efficiency, reality, and consistency. WorldCom likewise maintains that Verizon has not borne its burden of proof and that Verizon's explanation requires the assumption that its current network does not incorporate forward looking SONET technology and design.

In response, Verizon regards it as significant that AT&T, which initially advanced the adjustment, does not except. With regard to substance, it contends that there is no evidence in the record to challenge the six-node assumption and that the CLECs objecting to it have not borne their burden of going forward with a prima facie challenge. It disputes as well the premise that a higher number of nodes per ring is inefficient or costly, contending that larger rings (requiring more nodes) entail such efficiencies as less fiber and fewer connections between rings. In Verizon's view, the appropriate balance is a matter of engineering judgment, and the CLECs have offered no basis for challenging Verizon's engineers' judgment on the issue. It notes as well that the HAI Model contemplates very large ring sizes.

That a forward-looking network construct differs from the existing network is hardly surprising, and those differences alone certainly cannot invalidate it. But that type of

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[196] Focal's Brief on Exceptions, p. 3.

difference is the only real basis offered here for contesting Verizon's otherwise reasonable forward-looking assumption. In addition, Verizon has responded credibly to the argument that its construct may increase costs. We see no reason to modify the Judge's conclusions on this issue, and the exceptions are denied.

Optional Digital Cross-Connect System

AT&T objected to Verizon's inclusion of a digital cross-connect system (DCS) on most dedicated transport circuits regardless of whether the CLEC wished to purchase it, arguing that the FCC had allowed CLECs to order dedicated transport and DCS separately; Verizon contended that the extent of its unbundling obligation was not within the scope of this costing proceeding and that no CLEC had yet requested an unbundled DCS product. The Judge directed Verizon to identify the costs of an unbundled DCS product here unless it could cite a conclusive determination that it need not offer the product. He added that Verizon was free to argue elsewhere against any such offering.

Verizon has submitted a calculation of its DCS costs but notes that the resulting rates are intended to apply only to the extent Verizon is obligated to offer the product. It reserves its right to raise issues regarding that obligation in other proceedings.

The CLEC Alliance replies that Verizon has failed to show that it was not obligated to offer the unbundled product pending decision in those other proceedings, and it asks us to order Verizon to provide it on an unbundled basis "until and unless Verizon can sufficiently demonstrate otherwise."[197] The CLEC Alliance's request is beyond the scope of the proceeding and is denied, without prejudice to its further consideration in appropriate forums.

[197] CLEC Alliance's Reply Brief on Exceptions, p. 13.

Fill Factors

Verizon used a 75% fill factor for interoffice transport. The CLEC Alliance recommended fill factors of between 80% and 90%, arguing, among other things, that even though the equipment installed to accommodate traffic growth might be utilized at a 75% rate, the density and volume of the New York City telecommunications market suggested that existing facilities accommodating existing traffic were likely at full capacity and that the overall fill factor ought to exceed 75%. Verizon's response referred to the need for adequate capacity to ensure a prompt response to orders, a concern the Judge acknowledged. The Judge concluded, however, that "the CLEC Alliance's arguments strongly imply a fill factor higher than Verizon proposed; once again it is important to remember that not only that Verizon bears the burden of proof, but also that in a forward-looking analysis, its own experience provides the starting point but not the conclusion."[198] He therefore recommended a fill factor of 80%; Verizon, WorldCom, and Focal except.

Verizon contends that the Judge offered no derivation or analysis for his higher number and that the witness relied on by WorldCom and the CLEC Alliance lacked engineering expertise and offered no evidence in support of his recommendation. It maintains that its 75% factor is based on the experience, expertise, and judgment of the people who actually build and operate the network and that the notion that utilization should be maintained at as high a level as possible will lead to installation delays and held orders. It points in this regard to our statement, in a recent opinion, that Verizon's efforts to reduce utilization levels were part of the measures taken to improve its performance in providing interoffice facilities.[199]

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[198] R.D., p. 148.

[199] Verizon's Brief on Exceptions, p. 50, n. 127, citing Cases 00-C-2051 et al., Verizon-New York, Inc. - Special Services, Opinion No. 01-1 (issued June 15, 2001), pp. 11-12.

In response, WorldCom charges that Verizon "demeans and ignores the analytical work performed by [the Judge] and [our] Staff,"[200] and it defends its witness against Verizon's attack, noting his telecommunications experience as well as that of the witnesses sponsored by the CLEC Alliance. The CLEC Alliance argues to similar effect, contending that Verizon's recommendations derive "from the practical experience and technical judgment of people who have a traditional monopoly network design mentality that cannot escape inefficient engineering design constructs."[201] It reviews the basis on which its witnesses criticized Verizon's recommendation, asserting that the absence of spare capacity on the existing transport network is irrelevant in a forward-looking TELRIC network.

In their own exceptions, WorldCom and Focal urge higher fill factors than those recommended by the Judge. Focal disputes the Judge's implication that the CLEC Alliance had made a general recommendation for a fill factor between 80% and 90%; in fact, it recommended factors of 90% for most of the components involved. It argues as well that the Judge's recommendation of a remote terminal fill factor of 88% implies an interoffice transport fill factor of at least 90%, inasmuch as the interoffice system as a whole runs at nearly full capacity and has a higher utilization factor than RTs. Most importantly, in Focal's view, utilization rates should be highest for portions of the network with more highly concentrated traffic, such as the interoffice network. WorldCom likewise cites the specific fill factors proposed by the CLEC Alliance.

Verizon responds that the Judge was aware of the CLEC Alliance's fill factors and apparently intended the 80% recommendation as a compromise. It argues as well that the record lacks evidence supporting the comparative fill factor principles asserted by Focal and that there is no basis for

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[200] WorldCom's Reply Brief on Exceptions, p. 38.

[201] CLEC Alliance's Reply Brief on Exceptions, p. 15.

concluding that utilization levels for transport will necessarily be higher than for loop components.

The Judge's recommendation represents his considered assessment of the parties' positions, recognizing, once again, that there is no one "correct" fill factor. In our view, however, the fill factors offered by the CLEC Alliance, which for the most part were at 90%, should have weighed more heavily in that assessment and warrant a fill factor of 85%.

IOF Deaveraging

The CLEC Alliance called for deaveraged transport costs, on the premise that costs would be lower in higher density areas because of higher fill factors and other considerations. Verizon contended that if a separate Manhattan rate were established, it would have to reflect not only the lower costs associated with shorter transport distances but the added costs associated with the high complexity circuit design characteristic of Manhattan.

The Judge directed Verizon to include with its brief on exceptions an estimate of a deaveraged Manhattan dedicated interoffice transport rate, so a judgment could be reached on whether costs differ enough to warrant deaveraging. Verizon has done so, and it states that its analysis demonstrates that the costs of interoffice transport within Manhattan are higher than the statewide average. It adds that it opposes deaveraging in view of the administrative costs and the difficulty of applying deaveraged transport rates to routes that cross density zone boundaries.

WorldCom in response challenges Verizon's estimate, contending, among other things, that it neither demonstrates the claimed need for greater circuit complexity in Manhattan nor takes account of all the efficiencies available there. It asks that Verizon be directed to recompute a deaveraged transport rate reflecting an average ring length of no more than 3.8 miles.

The issues raised by WorldCom preclude adoption of a deaveraged rate on the basis of Verizon's estimate, and the

differences between the parties over whether Manhattan costs are higher or lower than average warrant a determination now that cost differences have not been shown to require deaveraged rates for this element. Parties may comment in greater detail on the matter within 30 days of the date of this order, and we will decide, on the basis of those comments, whether to pursue the matter further.

DSL COMPATIBLE LOOPS AND LINE SHARING

Introduction

Digital subscriber line (DSL) technology entails the use of specialized electronics that permit the transmission over copper telephone lines (as distinct from more advanced optical fiber) of high-speed data signals while at the same time allowing the customer to make ordinary voice calls. The technology takes several forms, collectively referred to as xDSL; of particular pertinence here are asymmetric DSL (ADSL) and high-bit-rate DSL (HDSL).[202]

"Line sharing," meanwhile, refers to an arrangement under which a CLEC is able to provide DSL data service over a loop that is also used by the incumbent carrier to provide retail voice grade service. The voice traffic is transported in the low frequency (0 to 4kHz) range of the loop; the data traffic is transported in the higher frequency spectrum above 4kHz.

Some rates for DSL and line sharing offerings were considered in two earlier accelerated tracks of this proceeding. In Opinion No. 99-12 (issued December 17, 1999)(the DSL

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[202] More specifically, ASDL uses a twisted-pair copper loop; the asymmetry refers to its ability to support a much higher transmission speed to the customer than from the customer. Its use thus permits rapid downloading by a customer of information from the internet or other databases. HDSL uses either a two-wire or a four-wire copper loop; transmission speeds (which are the same in both directions) are much higher when the four-wire version is used. Verizon's tariff includes rates for ADSL loops and for two-wire and four-wire HDSL.

Opinion), we set rates for the nonrecurring charges and one recurring charge that Verizon had proposed for DSL loops. The rates were set on a permanent basis, in the legal sense of not being subject to refund or reparation, but we characterized them as "interim," inasmuch as they were expressly set for further examination here. Later, in Opinion 00-7 (issued May 26, 2000) (the Line Sharing Opinion), we set rates for line sharing. Those rates were made temporary, but "only with respect to quantitative matters that depend on the yet to be admitted [in Module 3] material. To the extent qualitative judgments regarding the applicability of various rate elements to line sharing [could] be made on the basis of the existing record their rate implications [were made] permanent."[203]

Among the issues under this heading is the propriety of Verizon's having priced DSL loops and line sharing on the basis of an all-copper loop architecture. The CLECs attacked that concept on the premise that doing so was inconsistent with the basing of all other UNE costs on a forward-looking, all-fiber feeder architecture and amounted to an unlawful violation of TELRIC requirements. Verizon argued that the use of copper was correct, inasmuch as DSL was an inherently copper-based technology that would not be needed in an all-fiber environment. We generally agreed with Verizon in the DSL Opinion and the Line Sharing Opinion, and Verizon insists that those decisions represent the "law of the case," warranting rejection of the renewed arguments to the contrary by Rhythms/Covad and the CLEC Alliance.[204] One implementation issue with regard to that dispute remains before us on exceptions, along with various parties' concerns about some specific DSL and line sharing rates.

Copper Versus Fiber

As a practical matter, the issue of whether DSL loops should be priced on the basis of copper or fiber was rendered moot by Verizon's stated intention to price xDSL-compatible

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[203] Line Sharing Opinion, p. 17.

[204] Verizon's Initial Brief, p. 169.

loops at the rate applicable to two-wire analog loops, despite what Verizon regards as the higher costs associated with the former. The recommended decision included, for informational purposes only, a distinct, higher rate for an ADSL copper link, and Rhythms/Covad ask for clarification that the rates for xDSL loops are, in fact, the same as the rates for analog loops. Verizon regards such clarification as unnecessary but unobjectionable, and we here provide it.

Covad asks as well that we not adopt any rate, even on an informational basis, for the ADSL copper link, asserting that Verizon provided no cost support for it and the recommended decision engaged in no analysis of it. AT&T likewise asserts that Verizon's copper cost claims were not subject to rigorous review and asks us to specify that we have not addressed their merits.

Verizon replies that its cost study for an all-copper loop was presented in detail and went unchallenged by any CLEC. It denies that its pricing proposal renders its cost analysis moot, noting that if the cost analysis had shown copper costs to be less than fiber, the pricing proposal would not have been adopted. It therefore asks us to adopt its cost estimate subject to any generally applicable adjustments.

Verizon's pricing proposal for DSL loops obviates detailed consideration of its all-copper loop proposal. There likewise is no need to specify a rate for an all-copper loop, even for informational purposes, and we shall not do so.

Loop Qualification Charge

Loop qualification refers to the process by which it is determined whether a particular loop can be used for DSL

transmission.[205] Verizon offers several forms of access to that information. Its "mechanized loop qualification" service affords basic information on loop qualification by querying an electronic database. CLECs wishing additional information are offered "manual loop qualification" and "engineering query," which involve "checking other databases, performing automated [metallic line tests] on loops, and checking paper outside plant records (known as 'cable plats')."[206] These additional services incur additional charges.

The more costly forms of access are needed because the available mechanized databases are not fully populated. Rhythms/Covad therefore objected to the associated charges, arguing, among other things, that the charges require CLECs to cover the cost of correcting Verizon's failure to develop a proper database and that a forward-looking, TELRIC-compliant cost study would assume a market in which Verizon's network took account of the needs of its CLEC customers. The Judge analogized the issue to the house and riser asset inquiry charge, reasoning that while a strict TELRIC construct might contemplate the existence of a more comprehensive database, adopting that construct would incur the risk of assuming a fantasy record keeping system. He distinguished this issue, however, on the grounds that Rhythms/Covad's witness had credibly suggested that Verizon's compliance over the past 20 years with its own guidelines related to its databases would have resulted in more of the pertinent information being included. The Judge believed Verizon had established the

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[205] Copper loops often are equipped with devices that preclude their use to support DSL; the devices were installed in the past to enhance the network in various respects. If loop qualification determines that such devices are present, the loop must be "conditioned" to remove them. The Judge considered various issues related to loop conditioning, and those raising quantitative matters are discussed below under the heading of Nonrecurring Charges. Qualitative issues related to loop conditioning (R.D., pp. 155-157) are not raised on exceptions.

[206] Verizon's Initial Brief, p. 180.

soundness of its historical procedures for developing its database, but he saw little assurance of the extent to which those procedures had been complied with. "In view of that failure of proof, and to provide additional incentive to develop the database as a tool that meets the CLECs' needs as well as Verizon's own needs as a retailer, [he recommended] a downward adjustment of 25% in Verizon's loop qualification charges."[207]

Verizon excepts, arguing that artificially lowering rates to provide it incentives violates the requirement that UNE rates be cost-based. In addition, it sees no evidence "other than the ipse dixit assertion of the Covad/Rhythms witness"[208] that its database procedures were not complied with. It adds that the recommendation ensures that Verizon will not be able to recover its forward looking costs, makes no allowance for the cost of populating the database, and permits CLECS to avoid making a fair contribution to loop qualification costs.

In response, Rhythms/Covad note that Verizon did not cross-examine their witness on this issue and that the witness, a former Bell Atlantic outside plant engineer, has long experience and thorough knowledge of Verizon's practices. They regard the creation of incentives as fully consistent with TELRIC, for TELRIC replicates competitive pricing, which offers incentives to efficiency. They argue that the Judge's recommended rates are, in fact, above TELRIC, inasmuch as they require CLECs to pay for inefficient manual processes. And they dispute what they take to be Verizon's premise that it has been ordered to undertake a crash project to update its databases without being reimbursed for the associated costs; they assert that they seek not such a crash project but only charges that reflect efficient technology.

Once again, the Judge has reached a reasonable result on the basis of the record as a whole, including burden of proof considerations and evidence to which Verizon would assign little if any weight. But the evidence is undeniably there, and the

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[207] R.D., p. 160.

[208] Verizon's Brief on Exceptions, p. 55.

Judge did not act unreasonably or unfairly in crediting it more than Verizon would. His reference to providing a needed incentive should be seen not as sanctioning a below-cost rate but as explaining why the rate was being set toward the low end of the range of reason for those costs.

Splitter Administration and Support Charge

As already explained, "line sharing" refers to an arrangement in which a CLEC is given access to the DSL transmission capability of a copper loop that is also used by Verizon to provide retail voice grade services. The voice traffic is transported in the lower frequency range and the data traffic in the higher frequency range; the voice and data traffic are routed to their respective switches through the use of devices referred to as "splitters." Two scenarios for the provisioning of line sharing were developed in the ongoing DSL Collaborative and were considered in Verizon's cost studies. In scenario A, the splitter is located in the CLEC's collocation space in Verizon's central office; in Scenario C, it is mounted on a relay rack located in Verizon's central office space. In both scenarios, the splitter is owned by the CLEC.

Verizon proposed a splitter administration and support charge (SASC) comprising ACF-type components: a network maintenance factor (to recover splitter repair, maintenance, and similar expenses) a wholesale marketing factor (to recover "product management, advertising and customer-interfacing functions associated with the wholesale market"[209]), and a support factor (to recover a range of support functions such as information management, research and development). Consistent with our decision in the Line Sharing Opinion, the network maintenance factor would not be applied in line sharing scenario A, inasmuch as the splitter would be located in the CLEC's collocation space and Verizon would incur no maintenance costs.

[209] Verizon's Brief on Exceptions, p. 51.

Rhythms/Covad challenged the SASC on a variety of grounds. The Judge found that many of the arguments echoed more generic concerns about ACFs, particularly whether Verizon had adequately removed costs associated with its own retail activities. He held that those issues were adequately addressed by the recommended adjustments to ACFs generally, which would be applied here as well. The issue unique to splitters, he continued, was whether ACFs should be applied at all to an item of hardware in which Verizon itself has no investment. Verizon maintained that the CLECs' splitter investment was simply a surrogate base to which the ACF could be applied in order to recover real costs. The CLECs countered that doing so was fundamentally at odds with the theory underlying the construction of ACFs.

The Judge's finding on that issue is set forth at length because the parties' arguments on exceptions pay close attention to its wording:

> It seems to me that the CLECs have the better of this argument. What is at stake is not consistency for its own sake--i.e., the claim that ACFs are applied to Verizon's investment and therefore should not be applied to CLECs' investment--but the possibility that the ACFs would have been calculated differently had the historical investment base included investment other than Verizon's own. In that event, the denominator of the ACF ratio would have been greater and the ACF correspondingly lower. But applying the existing ACFs to investment not owned by Verizon entails a clear risk of overrecovery.
>
> This is not to say that Verizon incurs no costs in connection with line sharing of the sort recovered through the ACFs at issue. Its testimony shows that the costs (once those related to retail activities are properly removed) are real, though care must be taken to eliminate as well all costs related to relationships with equipment vendors. But despite its burden of proof, it has not proposed a reasonable way to identify and recover those costs; and recovery therefore should be disallowed.

> Finally, with specific reference to the maintenance costs proposed to be recovered from Scenario C CLECs, Rhythms/Covad have not shown splitter maintenance costs to be de minimis. If Verizon can devise and present on exceptions a better cost estimation and recovery mechanism, those costs should be allowed.[210]

On exceptions, Verizon suggests the Judge "appears to recommended a provisional disallowance of the proposed [administration and support] charge."[211] Noting that the Judge acknowledged the reality of these costs (but expressing surprise at his recommendation that costs associated with equipment vendors be disallowed, seeing no risk of the double recovery warned of by the Rhythms/Covad witness inasmuch as the costs at issue here are included in a different account from those recovered elsewhere), it contends that the only real question is how the amount of the costs should be determined. Its answer is to recover these costs, like other expenses, through ACFs; and it sees no basis for the Judge's concern over applying ACFs to investment not included in the investment base used to compute them. It contends that as long as the expenses included in the numerator of the annual cost factor development match the investments included in the denominator, the resulting factor will properly reflect the relationship and may be applied to investments not included in the initial investment base. It nevertheless recomputes the ACFs on an investment base including aggregate CLEC splitter investment and finds only "an insignificant reduction"[212] in the resulting wholesale marketing and support ACFs. (It does not provide the analogous calculation for the network factor because the allocation of splitters between scenarios A and C could not be determined by the briefing deadline.) Verizon argues that the recalculation "should eliminate the double recovery concern, and thus obviate

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[210] R.D., pp. 171-172.

[211] Verizon's Brief on Exceptions, p. 52.

[212] Id., p. 54.

any basis for unjustly denying Verizon the recovery of what the RD concludes, correctly, are 'real' costs."[213]

Rhythms/Covad argue in response that Verizon misunderstood the Judge's recommendation, which was to disallow so much of these charges as relate to the wholesale marketing and other support ACFs, but provide Verizon a further opportunity on exceptions only to estimate and propose a recovery mechanism for the maintenance costs to be recovered from scenario C CLECs. Instead, Verizon seeks to recover the entire SASC and fails to make the authorized specific showing with regard to maintenance costs. With specific reference to disallowance of vendor costs, Rhythms/Covad notes that Verizon's exception refers to an argument by their witness that was not raised in brief nor cited by the Judge. The Judge's point related to a different argument--that CLEC equipment suppliers perform product management, advertising, and customer interfacing functions with respect to the splitters and that Verizon is not involved in those processes--and Verizon does not address itself to that concern. Rhythms/Covad therefore urge rejection of the wholesale marketing and other support cost components of the SASC consistent with the Judge's recommendation, which Verizon has not shown to be flawed; and continued rejection of the maintenance cost component, inasmuch as Verizon has not responded to the invitation extended by the Judge with respect to those costs.

Rhythms/Covad's readings of the Judge's recommendations are more persuasive than Verizon's. The Judge's invitation to submit a better cost estimate and recovery mechanism was directed to maintenance cost components, and Verizon did not specifically respond. And his concern about vendor costs related to the CLECs' incurrence of those costs on their own.

That said, Verizon's recomputation of the pertinent ACFs in a manner reflecting inclusion of splitter costs in the denominator obviates the Judge's principal substantive concern

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[213] Id.

on this point. If the ACFs are recomputed in this manner, and the SASC is further modified to eliminate costs related to relationships with equipment vendors, the charge may be imposed.

Line Sharing SAC Charges

The collocation service access connection (SAC) charge recovers the costs of providing the physical connection between a CLEC's collocated equipment and Verizon's network. The Judge accepted Verizon's argument that line sharing requires enough cabling to warrant the imposition of two SAC charges for each installation but that the charge should be premised on the use of 165 feet of cable in each instance, rather than the higher amount that Verizon suggested was supportable.

In its brief on exceptions, Verizon notes that the charge set in the Collocation module of this proceeding is, in fact, based on 165 feet of cable and no change is required. Verizon's point, which is uncontested, is correct.

Cooperative Testing

Cooperative testing refers to a joint effort by a Verizon technician and a CLEC technician to ensure, on the installation of a line sharing arrangement, that it is properly installed and working. Verizon proposed a charge of $37.15 per loop for cooperative testing, which it regarded as cost based. Rhythms/Covad objected, contending that CLECs should not be required to pay for work and then pay for testing to make sure the work was performed; at a minimum, they suggested, the charge should be waived wherever the failure of a loop is Verizon's fault, and Verizon should bear the burden of identifying instances in which the charge may be imposed. The Judge held that line sharing involves use of a line already known to be carrying dial tone (in contrast to a stand-alone DSL installation, where a new line must be installed and tested), which "tends to negate at least one possible source of trouble that may be attributable to Verizon. In these circumstances, it seems reasonable to allow imposition of the cooperative testing charge; to provide for its waiver if the trouble is attributable

to Verizon; but to require the CLEC to bear the burden of showing a waiver to be warranted."[214]

Rhythms/Covad except, disputing what they take to be the Judge's assumption that cooperative testing is used primarily for line sharing arrangements; they assert that it is intended primarily for use with stand-alone DSL loops in order to ascertain the presence of dial tone and the existence of continuity (that is, a complete circuit). Rhythms/Covad add that the absence of continuity is a serious problem in connection with stand-alone DSL loops and that the problem is attributable to Verizon, as the party responsible for making the necessary cross connections. Accordingly, and because cooperative testing helps Verizon identify its own provisioning errors, they assert that Verizon should bear the testing costs and the rate should be set at zero.

In his reply brief on exceptions, the Attorney General agrees with Rhythms/Covad's analysis and recommends that Verizon bear the cost of cooperative testing when deploying a new stand-alone line and that CLECs bear the cost in the line sharing context unless the CLEC can establish that the defect identified is one for which Verizon is responsible.

Verizon responds that although cooperative testing is used primarily with stand-alone DSL loops, it is also used occasionally for line sharing and it is only in those situations that the charge would be imposed. It adds that cooperative testing is nothing more than a normal quality assurance procedure, the costs of which should be recoverable.

The posture of this issue is somewhat peculiar: Rhythms/Covad except; the Attorney General supports their analysis; yet the Attorney General's ultimate recommendation is substantially the same as the Judge's. In any event, we are satisfied that the Judge drew a reasonable distinction between the stand-alone DSL context and that of line sharing. In the former, there should be no charge for cooperative testing; in

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[214] R.D., p. 174.