COMMONWEALTH OF MASSACHUSETTS

DEPARTMENT OF TELECOMMUNICATIONS AND ENERGY

Investigation by the Department of Telecommunications and Energy on its own Motion into the Appropriate Pricing, based upon Total Element Long-Run Incremental Costs, for Unbundled Network Elements and Combinations of Unbundled Network Elements, and the Appropriate Avoided Cost Discount for Verizon New England, Inc. d/b/a Verizon Massachusetts' Resale Services in the Commonwealth of Massachusetts.	)	D.T.E. 01-20 (Part A)

INITIAL BRIEF OF WORLDCOM, INC.

*****REDACTED VERSION*****

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I. INTRODUCTION AND EXECUTIVE SUMMARY

This proceeding is critical to the future of telecommunications competition in the Commonwealth, in both the local and long distance markets. The Department must act quickly to lower significantly Verizon's rates for unbundled network elements ("UNEs") to bring them into compliance with the FCC's Total Element Long Run Incremental Cost ("TELRIC") pricing rules. Anything less will result in Verizon becoming the sole supplier of local and long distance services to residences and businesses in Massachusetts, a result clearly at odds with the public policy goals of the Telecommunications Act of 1996, the FCC, and the Department.

Verizon's current UNE rates are not TELRIC-compliant and are too high to allow broad-based local competition using unbundled network elements leased from Verizon to provide local service. Potential UNE-based competitors are subject to a significant price squeeze, *i.e.*, the difference between Verizon's retail rates to consumers and its wholesale rates to competitors is so small that competitive local exchange carriers ("CLECs") cannot offer

competitively priced products and still turn a profit. This makes it impossible for potential local service competitors to enter the residential and small business markets in Massachusetts on a broad scale. As a result, entry to date has been very limited and confined to niche markets. Major long distance providers, like WorldCom and AT&T, are offering local service via the UNE-platform in many states throughout the country, but not in Massachusetts.

The effect of Verizon's high UNE rates is not simply to make local entry unprofitable. Because Verizon has been permitted to enter the long distance market in Massachusetts, long distance competitors of Verizon find themselves unable to offer profitably a bundle of services–local and long distance–that can effectively compete with Verizon's retail offerings. The result is predictable: Verizon is beginning to remonopolize the long distance market in Massachusetts since its entry into that market in April 2001. MCI entered the consumer long distance market in Massachusetts over twenty years ago. After over two decades of competing in this state, nearly 20% of Massachusetts consumers used MCI. Since Verizon's entry last April, MCI has lost nearly one-quarter of its long distance subscribers. The reason is simple to explain: consumers prefer one-stop shopping for local and long distance service. The cause is also simple: the major long distance carriers cannot offer a bundled local/long distance product because Verizon's UNE rates are too high.

Verizon's current UNE switching rates are among the highest in the region and are clearly not TELRIC-compliant. Indeed, even Verizon has proposed new switching rates that are lower than its current rates. Verizon's current UNE switching rates were implemented as part of Verizon's long distance approval process, with Verizon having imported the now

superceded New York switching rates. Verizon's switching rates must be lowered dramatically to ensure continued compliance with federal law.

Verizon's proposed UNE rates are also not TELRIC-compliant. Verizon has proposed substantial increases to its analog loop rates, which, if adopted, would kill any hope of broad-based market entry in Massachusetts. Verizon's proposed switching rates are an improvement over the current illegal rates, but are still well above rates recently adopted in New York and Rhode Island.[1] Verizon continues to base its switching cost estimates on the basis of growth discounts, an approach recently rejected by the FCC.

A proper application of TELRIC principles, as shown by WorldCom and AT&T in the restated version of the Verizon recurring cost model, yields UNE costs that are well below Verizon's results. WorldCom's witnesses have proposed a number of adjustments to the Verizon cost models that are necessary to eliminate, or at least temper, egregious flaws in Verizon's modeling and input assumptions. Although Verizon's models, and rates they produce, are indeed flawed, they are not the product of mistake but of design. Simply put, Verizon has populated its models with inappropriate inputs (*e.g.*, inflated investments, overstated installation costs, understated "fill" factors and unreasonable network architecture assumptions), all with the goal of driving up the rates that CLECs pay for UNEs and interconnection with Verizon-controlled facilities. And although Verizon's models are quite complex, Verizon's conduct is, at its core, no more elaborate than a shopkeeper leaving his thumb on the scale so he can overcharge his customers.

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[1] Even these new rates are not fully TELRIC-compliant.

WorldCom urges the Department to: (1) reject the inflated and inappropriate inputs to Verizon's proposed cost models; (2) adopt the adjustments recommended by WorldCom and AT&T, and; (3) set UNE rates on the basis of the more reasonable, efficient and forward-looking inputs identified in the WorldCom/AT&T restatement of Verizon's models. To do otherwise is to render it highly unlikely that broad based local competition will materialize in Massachusetts.

In this brief, WorldCom will identify a variety of ways in which Verizon has sought to unjustly inflate its UNE costs. Specifically, Verizon has:

- ?? proposed a cost of capital that is far too high;
- ?? proposed depreciation lives that are too short;
- ?? proposed recurring monthly rates, and particularly rates for switching, loops and interoffice transport, that are all grossly inflated;
- ?? proposed annual cost factors that take its already bloated investment costs and magnify them with exaggerated and inappropriate multipliers; and
- ?? proposed nonrecurring costs that are excessive and based not on forward-looking efficient processes, but on the inefficiencies of its embedded systems.

There are, in addition, other issues not addressed in this brief but which are equally critical to the fate of competition in Massachusetts, including collocation and power costs, and the costs associated with xDSL. WorldCom respectfully requests the Department not only to modify Verizon's cost models in accordance with the specific proposed changes discussed in more detail below, but also to make all of the many additional modifications to Verizon's cost models that are identified in the testimony of the AT&T/WorldCom witnesses.

II. THE DEPARTMENT MUST MODIFY VERIZON'S COST STUDIES TO MAKE THE RECURRING COSTS OF UNBUNDLED NETWORK ELEMENTS REFLECT THE EFFICIENCIES OF A FORWARD-LOOKING TELRIC-COMPLIANT NETWORK CONSTRUCT

In the sections that follow, WorldCom identifies major flaws in how Verizon calculates its UNE investment, and how Verizon uses a series of inflated or wholly inappropriate annual cost factors to translate those inflated investments into even more greatly inflated recurring rates. Specifically, WorldCom addresses Verizon's

- ?? cost of capital, which is too high;
- ?? depreciation lives, which are too short;
- ?? switching, loop and interoffice transport cost studies, which are littered with assumptions and inputs specifically chosen to pad its recurring monthly rates, and;
- ?? annual cost factors, which are remarkable in their capacity to purge Verizon's studies of whatever shreds of forward-looking efficiencies they otherwise might have had.

But before the Department engages in the issue-by-issue task of deciding which inputs are in need of change and by how much, it must resolve a much more fundamental question. The TELRIC methodology adopted by the FCC and applicable in this proceeding means one thing to the CLEC community and something wildly different to Verizon. It goes without saying that both interpretations of the TELRIC standard cannot be right. Thus, before choosing between this or that dollar amount, cable length or switch discount, the Department must decide the more basic question of how it will interpret TELRIC.

WorldCom submits that the faithful application of the FCC's TELRIC rules, consistent with the letter, spirit and policy goals of the Act and the FCC's *Local Competition*

Order[2], leads inexorably to one conclusion: Verizon's cost models are TELRIC in name only. A TELRIC-compliant study is designed to measure the forward-looking incremental costs an efficient carrier would incur in serving the total demand for UNEs with the most efficient technology available; the only limitation placed on the configuration of a TELRIC-compliant network is that it must use the existing wire center locations of the incumbent local exchange carrier ("ILEC").[3]

Verizon, in contrast, has presented models and inputs designed not to measure costs anticipated over the long run, but over the next several years – a short-run period in which costs are severely constrained by the configuration of its existing network. And critically, Verizon's cost studies do not reflect *efficient* network design, but instead model Verizon's *existing* network design. Indeed, Verizon freely admits that its approach is not based on the "wholesale" reconstruction of its network. In contrasting Verizon's approach to developing costs with the approach in which it is assumed that a new network is to be built from scratch, Verizon witness Dr. William E. Taylor readily admitted that these different approaches will yield different results. Exh. VZ-2 (Taylor Surreb.) at 4. But Verizon's preferred approach – the approach it has taken in this case – is *not* TELRIC as defined by the *Local Competition Order* and the FCC's rules. Nor does it become TELRIC by virtue of the fact that Verizon's modeled network is in some respects "different" than its current in-the-ground network. Verizon touts these differences as evidence that its modeling assumptions are "aggressive" or "aggressively forward-looking." Those claims may be true, but *only* from the perspective of Verizon's *existing*

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[2] *In re Implementation of the Local Competition Provision in the Telecommunications Act of 1996*, First Report and Order in CC Docket No. 96-98, 11 F.C.C.R. 15499 (1996) ("*Local Competition Order*").

[3] *Local Competition Order* at ¶685, 690; 47 CFR §51.505(b)(1).

network. Because a network that has existed for decades would not look like, or be as efficient as, a network being built today (even in the case where the existing network "evolves" in an "aggressive" manner out to some future point), Verizon's "starting point" inflates its costs. Because TELRIC requires that UNE rates be based on the costs of a *new* network, Verizon's approach violates the FCC's rules.

The bottom line is that Verizon is not advocating an "economically correct" interpretation of the FCC's TELRIC rules; instead, it is unilaterally rewriting them. The Department, however, is duty bound to apply the FCC's definition of TELRIC, and not Verizon's recasting of what TELRIC *would* mean were Verizon given the opportunity to alter it. To that end, WorldCom submits that the Department would be legally justified in rejecting Verizon's cost studies outright. Since WorldCom does not expect the Department to do that, we recommend instead that significant adjustments to the studies be made, as described below, to attempt to address the consequences of this overarching defect in Verizon's studies.

A. VERIZON'S COST OF CAPITAL IS TOO HIGH

Verizon's proposed 12.6% cost of capital is excessive and greatly inflates Verizon's recurring costs. For the reasons set forth below, the Department should adopt the 9.54% cost of capital advocated by AT&T/WorldCom witness John Hirshleifer.

One of the costs of a network element is the "cost of capital," or return on investment. The cost of capital reflected in a TELRIC study must be sufficient to compensate lenders and equity investors for the capital invested in the assets needed by an efficient supplier of the network element. *Local Competition Order* at ¶ 700; *Bell Atlantic-Delaware, Inc. v.*

McMahon, 80 F.Supp.2d 218, 239 (D. Del. 2000). The necessary rate of return in turn depends on investors' perceptions of the risks that such a firm would face in its network element business. *See FPC v. Hope Natural Gas Co.*, 320 U.S. 591, 603 (1944). For UNE pricing, the allowed cost of capital must reflect only the risks of providing the network elements, and not the higher risks of providing retail-related costs, for those costs "are not attributable to the production of network elements that are offered to interconnecting carriers and must not be included in the forward-looking direct cost of an element." *Local Competition Order* at ¶¶ 691, 700; *accord*, *Bell Atlantic-Delaware*, 80 F.Supp.2d at 240.

Because the provision of local telephone service is capital intensive, the cost of capital is an important part of overall costs under TELRIC. If capital costs are overestimated, TELRIC prices will be too high. Excessive capital costs will therefore have the effect of deterring competition, encouraging inefficient construction of bypass facilities by entrants and generating improper subsidies for the ILEC.

In its *Massachusetts §271 Order*, the FCC stated that it had "serious concerns" regarding the "repetition of some of the assumptions" incorporated into the cost study approved by the Department in the *Consolidated Arbitrations* docket. Among the assumptions singled out for criticism by the FCC was the Department-approved cost of capital:

> The original cost study [approved by the Department in the *Consolidated Arbitrations* docket] has a number of potential flaws that, if repeated without justification, could result in UNE rates that warrant enforcement action. These include . . . *a cost of capital in excess of the authorized rate of return in Massachusetts and higher than any other state in Verizon's territory with nothing on the record to justify a Massachusetts-specific difference* . . .

Massachusetts § *271 Order* at ¶251 (emphasis added).[4] The cost of capital approved by the Department in the *Consolidated Arbitrations* case was 12.16%. *Id*. at ¶38. Remarkably, Verizon's proposed cost of capital in this proceeding is even higher, at 12.6%. Exh. VZ-3 (Vander Weide Dir.) at 4. The cost of capital recommended by WorldCom and AT&T, on the other hand, is 9.54%. Exh. AT&T 1 (Hirshleifer Dir.) at 4. The WorldCom/AT&T proposal is much more consistent with the cost of capital approved more recently in other Verizon-East (*i.e.*, former Bell Atlantic) jurisdictions.[5]

The major factor accounting for the disparity in the overall cost of capital percentages suggested are the parties' vastly different costs of equity capital: AT&T/WorldCom witness John Hirshleifer has recommended 10.42%; Verizon witness Dr.James H. Vander Weide has recommended 14.75%. Exh. AT&T 2 (Hirshleifer Reb.) at 4. Three factors drive the difference between these two figures: (1) Mr. Hirshleifer uses a three-stage discounted cash flow ("DCF") model and the capital asset pricing model ("CAPM") whereas Dr. Vander Weide uses a single-stage DCF model; (2) the "comparable" companies used to populate the DCF models are different, *i.e.*, Mr. Hirshleifer uses regional telephone holding companies ("RHCs") whereas Dr. Vander Weide uses a large number of S&P industrial companies, and; (3) the capital structures used are different in that Mr. Hirschleifer recommends a debt/equity capital structure of 34.5/65.5 percent while Dr. Vander Weide recommends 25/75 percent. Exh. AT&T 1 (Hirshleifer Dir.) at 4; Exh. AT&T 2 (Hirshleifer Reb.) at 4.

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[4] *See also id*. at ¶ 38 (expressing concern that the Department used a "relatively high" cost of capital that was "substantially higher than the cost of capital employed by any of the other states in Verizon's region").

[5] *See* RR-DTE-6 (listing Pennsylvania (9.83%); New Jersey (8.82%); Virginia (10.12%); New Hampshire (10.46%); Rhode Island (9.5%) Vermont (9.99%) and Connecticut (10.2%)).

Of these differences, the three-stage versus single-stage DCF models is by far the most significant. Tr. 45-47 (Vol.1, Jan. 7, 2002). Of equal, if not greater overall significance, however, is the fact that the general structure of Verizon's current proposal, and the use of a single-stage DCF model in particular, largely mirrors the cost of capital methodology approved by the Department in 1996, which resulted in the high 12.16% cost of capital that was later criticized by the FCC in 2001.

WorldCom recognizes that this is a different proceeding and not an appeal of the earlier Department's ruling. The fact remains, however, that the Department's earlier results have been criticized by the FCC, and therefore the precedential value of the analyses that led the Department to those results have been called into question. In the context of cost of capital in particular, WorldCom submits that the Department's analysis concerning the risks facing the incumbent was erroneous and ought not be repeated here.

1. TELRIC Does Not Require That a High Level of Risk Be Assumed as a Matter of Law

In its *Consolidated Arbitrations* Phase 4 Order, the Department "conclude[d] that the level of business risk faced by NYNEX with regard to the provision of unbundled network elements is higher than that which would apply to a monopoly bottleneck facility [and that] here there is a risk of bypass of the company's own facilities, a risk that is separate and distinct from the risks facing a monopolist." *Id.* at 44. The risk of which the Department spoke was not based on the actual level of competition as experienced by NYNEX, which the Department found irrelevant, but rather on the "broadly expanded competitive marketplace envisioned by the Act." *Id.* at 41. In other words, the Department held that because the TELRIC methodology seeks to replicate the *costs* of a firm in an effectively competitive market, one must also assume that the

business of supplying UNEs faces a very high degree of competitive risk. This analysis dictated the Department's choice of a capital structure skewed toward a high percentage of equity capital and S&P industrial companies as the appropriate DCF comparables.[6] Indeed, so concerned was the Department that NYNEX's cost of capital reflect the high level of risk allegedly required by this "envisioned" but nonexistent marketplace that it reconsidered and reversed its initial rejection of a single-stage DCF model; after initially ordering Verizon to calculate the cost of capital with a three-stage model, but populated with the NYNEX-proposed S&P comparable companies, the Department later granted NYNEX's motion to reconsider because the resulting cost of capital, 11.38%, simply was not high enough.[7]

Consistency with the TELRIC standard *does not* require the regulator to presume, as a matter of law, that the business of supplying UNEs at wholesale has a high degree of competitive risk. Paragraph 702 of the *Local Competition Order* makes clear that the incumbent LECs bear the burden of "demonstrating with specificity" the competitive risks they will *actually* face:

> Based on the current record, we conclude that the currently authorized rate of return at the federal or state level is a reasonable starting point for TELRIC calculations, and *incumbent LECs bear the burden of demonstrating with specificity that the business risks that they face in providing unbundled network elements and interconnection services would justify a different risk-adjusted cost of capital or depreciation rate. These elements generally are bottleneck, monopoly services that do not now face significant competition.* We recognize that incumbent LECs are likely to face increased risks given the overall increases in competition in this industry, which generally *might* warrant an increased cost of capital, *but note that, earlier this year, we instituted a preliminary*

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6 *Consolidated Arbitrations* Phase 4 Order at 49-53.

7 Compare *Consolidated Arbitrations* Phase 4 Order at 51-52 with *Consolidated Arbitrations* Phase 4-A Order at 4-6.

> *inquiry as to whether the currently authorized federal 11.25 percent rate of return is too high given the current marketplace cost of equity and debt*. On the basis of the current record, we decline to engage in a time-consuming examination to determine a new rate of return, which may well require a detailed proceeding. *States may adjust the cost of capital if a party demonstrates to a state commission that either a higher or lower level of cost of capital is warranted*, without that commission conducting a 'rate-of-return or other rate based proceeding.' *We note that the risk-adjusted cost of capital need not be uniform for all elements. We intend to re-examine the issue of the appropriate risk-adjusted cost of capital on an ongoing basis*, particularly in light of the state commissions' experiences in addressing this issue in specific situations.

Id. at ¶ 702 (emphasis added). The factual inquiry mandated by the FCC, and the allocation of the burden of proof specified by the FCC for resolving any disputed facts, would be pointless if the FCC had meant for state commissions simply to *presume* the existence of intense competition. This interpretation is also contradicted by the reference in the first sentence of ¶ 702 to "the risks they *face*." *Id*. (emphasis added).

The United States District Court in Delaware, upholding a 1997 decision of the Delaware PSC specifically rejecting the interpretation of the *Local Competition Order* advocated by Dr. Vander Weide reasoned that "indulging" in the fiction of a hypothetical carrier in a competitive market "does not change the fact that ILECs like Bell do not face the same competitive risks as firms operating in a competitive market." The Court thus found that "in introducing competition in the local telephone market, it makes perfect sense to recreate competitive prices while acknowledging that the current lack of competition warrants reduced costs of capital."

Bell Atlantic-Delaware, Inc. v. McMahon, 80 F.Supp.2d 218 (D. Del. 2000) at 240 n. 19 (citation omitted) (emphasis added). Thus, the Department cannot in this case, as it did in the last one, simply assume the existence of a highly competitive market for UNEs for the purpose of determining cost of capital.

2. Verizon Has Failed to Prove that its High Cost of Capital is Warranted

Since the competitive environment warranting Verizon's proposed cost of capital cannot be assumed, Verizon's results-oriented methodology cannot be seriously considered by the Department unless Verizon can demonstrate with specificity that today it *actually faces* significant risks in a highly competitive market for the provision of UNEs and interconnection. Verizon has made no such showing and fails to meet its burden of proof.

First, it must be remembered that the relevant market in which to assess risk is the wholesale market for UNEs, not the market for retail end user customers. In *Bell Atlantic-Delaware, Inc. v. McMahon*, 80 F.Supp.2d at 240-241, the court upheld the decision of the Delaware PSC to reject Dr. Vander Weide's cost of capital analysis in part because of his failure to distinguish between wholesale and retail risk. The court specifically noted that the retail and wholesale markets are different, the latter exposing Bell Atlantic to *less* risk because it is the only supplier of UNEs in the market.

As to whether the market for wholesale UNEs is actually competitive today, Verizon witness Michael Anglin acknowledged that "[t]oday I would expect Verizon is generally

the wholesale supplier, and maybe the only one." Tr. 1727 (Vol. 9, Jan. 25, 2002). That admission came up in the context of a discussion regarding Verizon's attempt to recover in its rates the costs of wholesale advertising. When questioned on the existence of any such advertising, Mr. Anglin spoke in terms of some imaginary competitive environment in the future, and specifically distinguished that would-be environment from the realities of the current marketplace:

> I think we're missing the whole point of my whole line of surrebuttal, which is to talk about, ***not necessarily today***, but what under the TELRIC construct we believe the forward-looking environment ***would be***. . . . ***we defined what that environment would be: the market is competitive, Verizon is a wholesale company, and there are other facilities-based providers and/or providers of alternatives to the network***. . . .

Id. at 1730 (emphasis added). That may be what the wholesale market "would be" like in the imaginary competitive environment Verizon envisions, but it is not the case today.

Moreover, even if Verizon could establish that some subset of the wholesale UNE market *were* competitive, the high cost of capital advocated by Verizon would still be inappropriate as an across-the-board input, which is the way Verizon is proposing it here. Verizon has presented no evidence, nor has it suggested, that the cost of capital for some of its unbundled network elements is higher than for others in Massachusetts. Tr. 47-48 (Vol. 1, Jan 7, 2002).

Finally, as noted earlier, the FCC criticized the Department-approved cost of capital of 12.16% in part because it was "higher than any other state in Verizon's territory with nothing on the record to justify a Massachusetts-specific difference." *Massachusetts § 271 Order* at ¶251. At the hearing, Dr. Vander Weide acknowledged that there are no Massachusetts-

specific technological, environmental, regulatory, and economic conditions of which he is aware that would cause Verizon's cost of capital in Massachusetts to be significantly different than its cost of capital in other jurisdictions. Tr. 88-89 (Vol. 1, Jan 7, 2002).

Because (a) Verizon's methodology and results in this case so closely parallel what was approved in the *Consolidated Arbitrations* docket and later criticized by the FCC in its *Massachusetts § 271 Order*, and (b) Verizon has submitted no Massachusetts-specific evidence to justify a cost of capital so far in excess of what has been approved in other jurisdictions, Verizon's submission here should be rejected. Instead, the methodology and results advocated by Mr. Hirshleifer on behalf of WorldCom and AT&T should be adopted as the forward-looking cost of capital in this case.

3. In Contrast to Verizon's Inflated Cost of Capital and Results-Oriented Methodology, the Cost of Capital Methodology and Results Advocated By Mr. Hirshleifer are Entirely Reasonable

With respect to the three fundamental differences between the parties' cost of equity capital calculations, *i.e.*, type of model, universe of "comparable" companies and debt/equity capital structure, Mr. Hirshleifer's recommendations are in every case the more fair, reasonable, forward-looking choice.

First, Mr. Hirshleifer's suggested use of a three-stage DCF model is not new to the Department. In the *Consolidated Arbitrations* docket, the Department chose the three stage model as a more logical choice, and later rejected its use only because it produced results inconsistent with the Department's erroneous belief that TELRIC required a high cost of capital. The logic of using a three-stage model is compelling: The model's first stage lasts five years

because that is the longest horizon over which analysts' forecasts of growth are available. During the second stage (lasting 15 years) the growth rate falls from the high level of the first five years to the growth rate of the U.S. economy. After that, the growth rate is set equal to the growth rate for the economy because rates greater than that cannot be sustained into perpetuity. *See* Exh. AT&T 1 (Hirshleifer Dir.) at 15 ("A perpetual growth rate that exceeded the growth rate of the economy would illogically imply that eventually the whole economy would be comprised of nothing but telephone companies"). The single-stage DCF analysis advocated by Verizon, in contrast, assumes that the five year growth rates in Mr. Vander Weide's group of "comparable" companies – *i.e.*, the S&P Industrials – will persist indefinitely. Exh. AT&T 2 (Hirshleifer Reb.) at 5. Recognizing that the single-stage model was based on that unreasonable assumption is what prompted the Department to initially reject it in favor of the three stage model. *See Consolidated Arbitrations* Phase 4 Order at 51-52. WorldCom submits that the Department's reasoning is as compelling today as it was then and urges the Department to choose Mr. Hirshleifer's methodology over that of Dr. Vander Weide.

Second, the comparable companies selected by Mr. Hirshleifer, *i.e*, regional telephone holding companies, is appropriate given that the stock prices of RHCs reflect investor expectations about future competitive risks, as well as current risks. Verizon has offered no evidence that it faces greater competitive threats or pressures than do the local operating arms of the RHCs in Mr. Hirshleifer's comparison group. Moreover, there is no reason to believe that such would be the case; the major regulatory and commercial trends affecting the United States telephone industry occur on a national, not local or regional scale. Dr. Vander Weide, on the other hand, uses a wide range of S&P industrial companies. Because the risks of a dominant provider offering wholesale UNEs to CLECs in no way approaches the degree of risks faced by

these diverse and unrelated businesses (*see generally* Exh. AT&T 2 (Hirshleifer Reb.) at 10-13; Exh. AT&T 3 (Hirshleifer Surreb.) at 30-32), Verizon's proposed comparables should be rejected and Mr. Hirshleifer's proposed comparables should be accepted.

Finally, and for much the same reasons, the Department should adopt the debt/equity capital structure advocated by Mr. Hirshleifer, which is based on his analysis of the capital structures of his group of comparable companies. *See* Exh. AT&T 1 (Hirshleifer Dir.) at 35-38. Again, Dr. Vander Weide's analysis is skewed toward companies with much greater risks than a hypothetical provider of wholesale UNEs. *See* Exh. AT&T 2 (Hirshleifer Reb.) at 26-28. As such, his risk-oriented capital structure, which overstates the percentage of equity capital a wholesale provider of UNEs would require, should be rejected in favor of the capital structure advocated by Mr. Hirshleifer. For all the foregoing reasons, WorldCom urges the Department to reject Verizon's anticompetitive cost of capital proposal and instead adopt the 9.54% weighted average cost of capital advocated by Mr. Hirshleifer.

B. VERIZON'S PRESCRIBED DEPRECIATION RATES SHOULD BE USED TO DETERMINE RECURRING COSTS, NOT VERIZON'S FINANCIAL BOOK LIVES

Depreciation lives are intended to provide a recovery of the cost of assets that are expected to wear out or become obsolete over time. Shorter depreciation lives mean higher network element rates, because a larger share of the investment in network equipment may be recovered from ratepayers as a depreciation expense each year.

The FCC's rules require that "economic depreciation rates," as specified in 47 CFR § 51.505(b)(3), be used in developing forward-looking costs. In the *Consolidated Arbitrations* Phase 4 Order, the Department held that "the projection lives prescribed by the FCC

in its last represcription of NYNEX's depreciation rates are the kind of forward-looking projection lives required in a TELRIC study" and it directed that those Massachusetts-specific lives be used in calculating NYNEX's rates. *Id.* at 56. As discussed at length by AT&T/WorldCom witness Richard B. Lee, the depreciation lives adopted by the Department in 1996 are as valid today as they were when originally set via the FCC's rigorous review process. They should thus be adopted for purposes of this proceeding.

The reasoning is straightforward. The FCC has been in the business of prescribing depreciation rates for telephone companies for decades. *See* Exh. AT&T 5 (Lee Dir.) at 4. The Department can feel confident that the currently used lives remain appropriate for two independent reasons. First, their continued validity was confirmed by Mr. Lee's analysis of Verizon's depreciation reserve levels. *See* Exh. AT&T 5 (Lee Dir.) at 6-8. The empirical evidence shows that "the depreciation process is resulting in adequate depreciation accruals, and that the FCC's projection life estimates have been forward-looking and unbiased". *Id.* at 8. Second, Verizon offered no evidence whatsoever on which the Department could reasonably conclude that the economic lives of its Massachusetts assets are shorter that what the FCC's exhaustive analysis found.

Verizon proposes that its depreciation lives be taken from the financial book lives Verizon used in 1999. Exh. VZ 6 (Sovereign Dir.) at 2. As explained by Mr. Lee, however, the lives used for financial accounting purposes, which are governed by Generally Accepted Accounting Principles ("GAAP"), are not appropriate for use in setting rates. Exh. AT&T 6 (Lee Reb.) at 3-5. Dr. Lee testified that GAAP accounting is conservative in nature and is designed to protect investors against overstated asset values and overstated earnings. In contrast, GAAP

accounting could be used by the LEC to overstate depreciation expense to increase costs to ratepayers. *See id.* at 4-5 (quoting Prescription Simplification, Report and Order, FCC 93-452, released October 20, 1993, para. 46). *See also In re: Review of Bell Atlantic-Rhode Island TELRIC Study*, Report and Order. Docket 2681, at 24 (RI PUC, Nov. 18, 2001) ("We also find that depreciation lives and methods used for financial reporting, which are strongly influenced by the tax laws, bear no close relationship to economic lives of the assets for regulatory or ratemaking purposes").

Although the FCC's depreciation lives may not be as short as Verizon would like them to be, Verizon has provided no justification for any of the FCC-prescribed lives to be shortened. As such, WorldCom recommends that the depreciation lives adopted by the Department in the *Consolidated Arbitrations* docket be carried over to this one for purposes of setting Verizon's unbundled network element rates.

C. VERIZON'S SWITCHING COSTS ARE SIGNIFICANTLY OVERSTATED

Verizon has proposed unbundled switching rates that are well in excess of TELRIC. The evidence in the record before the Department supports the port and usage switching rates recommended by AT&T/WorldCom witness Catherine Pitts. WorldCom urges the Department to adopt her recommendations.

WorldCom relies on the testimony of Catherine Pitts as the basis for its proposed restatement of Verizon's switching costs. Ms. Pitts is a former employee of Telcordia with extensive experience building cost models. While with Telcordia, Ms. Pitts was appointed to lead the group that developed switching cost models, including the Switch Cost Information

System ("SCIS") model used by Verizon in this proceeding. *See* Exh. AT&T 20 (Pitts Rev. Reb.) at 1. In addition, Ms. Pitts was one of three individuals who designed the SCIS/IN model and was Telcordia's lead subject matter expert on feature costing in general, and a subject matter expert on 1ESS, 1A ESS and 5ESS switches. *Id.* at 1-2.

Bringing her considerable expertise to bear in this case, Ms. Pitts has identified numerous errors in the manner in which Verizon populates and runs the SCIS family of models to develop its switch costs. Based on her analysis, Ms. Pitts has concluded that Verizon:

- ?? overstates its investment costs in switching equipment;
- ?? compounds that error by using an inappropriately high installation factor, thereby inflating the costs to get the equipment installed and operating;
- ?? misassigns non-traffic sensitive investment costs to the traffic-sensitive usage element for the purpose of increasing the per minute of use switching rate;
- ?? treats unbundled switching and reciprocal compensation inconsistently;
- ?? uses old and unreliable data to inflate its busy hour and nonconversation time factors;
- ?? reports inefficiently low trunk utilization; and
- ?? fails entirely to justify its feature port additive costs.

These errors, all of which serve to drive up the costs CLECs pay for switching, must be corrected to prevent massive over-recovery of costs by Verizon. WorldCom proposes that the Department set switching rates in accordance with Ms. Pitts' testimony.

1. Investment Costs Fail to Reflect New Switch Discounts

Verizon's stated investment in switching equipment is grossly inflated. Verizon uses SCIS to model the material investment used as a basis for determining its port, port additive and usage costs. The SCIS databases do not contain the prices that Verizon actually pays for the identified equipment, but rather contain the vendors' list prices. Exh. AT&T 20 (Pitts Rev. Reb.) at 9. Thus, to obtain an accurate investment figure for purposes of a TELRIC analysis, the list prices must be reduced to reflect the deep discounts that vendors offer carriers purchasing new switching equipment sufficient to populate the ILEC's wire centers.[8]

Verizon, however, chose not to apply the new switch discounts it would receive (and indeed has received for the switches it has already purchased and installed in its network). Verizon freely admits that the discount it uses for purposes of determining TELRIC investment "is not a 'replacement' (or new switch) discount that would only apply to purchases of entire switches." Exh. VZ 36 (Recurring Panel Dir.) at 139. Instead, Verizon applied a much less significant "growth" discount based on a year's worth of switch equipment purchases allegedly "represent[ing] the mixture of switching equipment components Verizon is purchasing incrementally to upgrade and expand its switching network, on a forward-looking basis." Exh. VZ 36 (Recurring Panel Dir.) at 138; *see also* Tr. 1683:3 (Vol. 8, Jan. 24, 2002) (the aggregation of Verizon's year 2000 switch purchases was "strictly to develop a discount").

WorldCom submits that Verizon's interpretation of what TELRIC requires is at odds with the *Local Competition Order* and the FCC's rules. Critically, it is also at odds with a very recent FCC order specifically addressing the issue of switch discounts for TELRIC

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[8] It should be noted that the discussion regarding the appropriate switch discount is limited to only one of Verizon's two switch vendors in Massachusetts – Lucent. As Verizon has explained, there is very little difference

purposes. In its *Rhode Island §271 Order* [9], the FCC discussed whether a "growth" only discount, as proposed by Verizon in this case, was appropriate:

> A central issue contested by the parties is the appropriate discount for Verizon's switches. Verizon's Rhode Island switching rates are based on the assumption that it will not replace any switches in Rhode Island, but only expand switch capacity through growth additions to existing switches. Typically, vendors provide greater discounts for new, replacement switches than for growth additions to existing switches. AT&T and WorldCom contend that Verizon's assumption of no new, replacement switches and only growth additions is inconsistent with TELRIC principles. While the Commission has not to date specified an appropriate split between new, replacement switches and growth additions, ***we strongly question an assumption of only growth additions, as proposed by Verizon*** and incorporated in the April 11 rates adopted by the Rhode Island Commission. Even if some growth additions may be used in a forward-looking network, the absence of any new switches is inconsistent with the assumption in TELRIC pricing of a forward-looking network built from scratch, given the location of the existing wire centers. ***Although an efficient competitor might anticipate some growth additions over the long run, rates based on an assumption of all growth additions and no new switches do not comply with TELRIC principles.*** We also note that the Rhode Island Commission determined that Verizon's assumptions for switch cost recovery in the new UNE rate proceeding will be based on a rebuttable presumption of 90 percent new switches to 10 percent growth additions.

Id. at ¶34 (emphasis added). Thus, the growth discount Verizon uses in developing investments for Lucent switching material is unquestionably wrong.

Based on its "increments" and "upgrades" sample of year 2000 purchases, the discount Verizon proposes to apply is *****BEGIN PROPRIETARY END**

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between "new" and "growth" discounts of its other vendor, Nortel, and Verizon's SCIS analysis relating to Nortel equipment has not been restated by Ms. Pitts. Exh. AT&T 20 (Pitts Rev. Reb.) at 20.

[9] *In the Matter of Application by Verizon New England Inc., et al., for Authorization To Provide In-Region, InterLATA Services in Rhode Island*, Memorandum Opinion and Order in CC Docket No. 01-324 (rel. February 22, 2002).

PROPRIETARY*** Exh. VZ-53-P (Exhibit Part C-P1, page 1 of 1). WorldCom, on the other hand, recommends that the initial investment amount generated by SCIS be discounted by ***** BEGIN PROPRIETARY END PROPRIETARY ***** Exh. AT&T 20 (Pitts Rev. Reb.) at Attachment CP 3. This figure is derived directly from an analysis of Verizon's contracts with Lucent. *Id*. To be more precise, it is derived from the so-called "Megabid" contract, as amended, that Verizon first negotiated with Lucent when upgrading its network from analog to digital switches. *Id*. at 18; Exh. VZ 36 (Recurring Panel Dir.) at 135. As noted by Ms. Pitts, "[t]he crucial issue here is that the Megabid contract provides for the lowest new switch discount that VZ-MA could expect to receive when purchasing a new switch today, and thus represents a conservative long-run, forward looking price for switching." Exh. AT&T 20 (Pitts Rev. Reb.) at 19. The figure is conservative in that other evidence adduced, namely the competitive bids of switch vendors, reveals that even greater discounts have been offered to Verizon by its switch vendors than the discount available to Verizon in the Megabid contract. *See id*. at its attachment CP2; *see also* DTE RR 49-S-P.[10]

There should also be no dispute that Verizon's proposed discount is a "growth only" discount. Of the hundreds of millions of dollars worth of equipment purchases Verizon made in year 2000, only two such purchases were for new switches, and as Ms. Pitts explained, those two new switches "have no impact whatsoever" on the discount Verizon uses in this case to determine its investment in Lucent switching equipment. Tr. 2067 (Vol. 11, Jan. 29, 2002).

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[10] The record evidence supports a switch discount even greater than that suggested by Ms. Pitts. DTE RR 49-S-P contains Verizon's responses to discovery requests made in the arbitration before the FCC regarding UNE rates for Virginia. The attachment to one of the Virginia responses, VZVA 32, contains additional competitive bids from switch vendors illustrating that much higher discounts can be obtained from the switch vendors than what is in

The inappropriateness of the discount Verizon applies to its Lucent switches is reconfirmed when comparing the average cost per line (total switch investment divided by total lines served) in Verizon's cost study. The Nortel price per line is roughly $86, whereas the Lucent price per line is a staggering $166. *Id*. at 2062-65; *see also* Exh. AT&T 20 (Pitts Rev. Reb.) at 20. As noted by Ms. Pitts, "[t]his difference is not rational and does not accurately reflect the pricing that exists in the highly competitive switch vendor market. The two switch vendors are essentially identical with respect to capabilities and functions in the switch products and compete primarily on price." *Id*. at 21. While there may ordinarily be reasons to maintain "strategic diversity" by using multiple vendors, it makes no economic sense to pay twice as much as necessary to obtain functionally identical goods. *See id.* Thus, even if the switch discount Verizon applies were "correct" in the sense that it accurately reflected the discount Verizon receives when purchasing new Lucent switches, it would still be inappropriate for purposes of a TELRIC analysis because an efficient new entrant would not spend such a disparately great amount for that vendor's equipment, but would instead seek better terms from other vendors.

2. Verizon's Installation Factor Is Too High

Verizon's engineer, furnish and install ("EF&I") factor "translates a material-only investment into an installed investment, including such items as vendor engineering, Verizon MA engineering, transportation, warehousing, vendor installation, Verizon MA installation, and acceptance testing." Exh. VZ 36 (Recurring Panel Dir.) at 28. For digital switching equipment,

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Verizon's "Megabid" contract with Lucent, further confirming that Ms. Pitts' proposed discount here is quite conservative.

Verizon's cost model uses an EF&I factor of just over 40% to translate material costs to "in place" costs. Tr. 1608 (Vol. 8, Jan. 24, 2002). This number is derived from Verizon's analysis of its Detailed Continuing Property Record ("DCPR") database from 1998. *Id*. at. 1611. Exh. VZ 36 (Recurring Panel Dir.) at 29. In contrast, WorldCom recommends a 25% factor.

Verizon's proposed EF&I factor should be rejected for much the same reason that Verizon's switch discount should be rejected. While Verizon's proposed switch discount failed to incorporate the discounts for new switches, its EF&I factor fails to calculate the installation costs of new switches. Rather than capturing that appropriate relationship, Verizon's EF&I factor is "representative of the [material cost to installed cost] relationships that the Company expects to experience on a going-forward basis." Exh. VZ 36 (Recurring Panel Dir.) at 29. Putting aside for the moment whether Verizon's stated "relationships" derived from these accounting records are truly reflective of what an invoice-by-invoice analysis would show, there is no debating the fact that the "going-forward" jobs captured in the database are not a valid indicator of what work is required to install new switches in a new network. As Verizon admitted at the hearing, it has not provided any evidence showing that the array of equipment purchased in 1998 is representative of the type of equipment that would be purchased to install a forward-looking network from scratch. *See* Tr. 1613 (Vol. 8, Jan. 24, 2002).

Moreover, Verizon has failed to prove that the "in place" costs reflected in the DCPR database are at all reasonable for purposes of a TELRIC analysis. As AT&T/WorldCom witness Catherine Pitts explained, Verizon's DCPR database was the subject of considerable discovery; Verizon's responses only confirm that it has failed to provide adequate support for its use of the 40% mark-up. As Ms. Pitts testified, "[t]hese responses have selected details

regarding material costs and some additional descriptive material as to the process of recording the in-place cost. But nowhere has Verizon provided any information about the types of activities, labor rates, engineering labor hours, installation labor hours, miscellaneous equipment, or anything else that explains the basis for the difference between the material cost and the claimed installed cost." Exh. AT&T 21 (Pitts Surreb.) at 3. This point was echoed by AT&T/WorldCom witness Michael Baranowski at the hearing: "there was no way to determine just what the work activities were within the data, to be able to establish if that information was in fact comparable to, and therefore usable in, the forward-looking cost study." Tr. 2177. (Vol. 11, Jan. 29, 2002). By failing to provide the specific information necessary to assess the validity of its EF&I factor, Verizon has failed to make any showing that it is based on efficient, forward-looking practices. The only logical conclusion to draw, therefore, is that Verizon's EF&I factor does not reflect such efficiencies:

> By relying on its embedded historical experience to develop EF&I and power loading factors, Verizon is failing to capture and reflect the efficiencies that would be achievable by a forward-looking service provider constructing a network today to serve Verizon's total demand. Telecommunications is a declining cost industry, and one should expect that the same wholesale service can be provided less expensively today than it could in 1998.

Exh. AT&T 24 (Baranowski Supp. Reb.) at 4.

This is a critical failure of proof on Verizon's part and Verizon's presentation should be given no weight.[11] Verizon has actually failed to meet its burden twice. First, Verizon failed to prove that the 1998 equipment base used to generate its EF&I factor has any

[11] As the Department stated in its October 18, 2001 *Interlocutory Order* (at page 33), "the adequacy of production of all relevant supporting data will be considered in evaluating the parties' cost models, and will affect the weight to be given to a cost model."

relationship whatsoever to the equipment base required to build a new network from scratch. But even if one were to overlook Verizon's equipment mix failure[12], Verizon also failed to provide evidence sufficient to justify the reasonableness of the 40% figure itself. There is thus no basis in the record supporting Verizon's 40% EF&I factor.

What the record evidence does suggest is that the factor should be significantly lower. The data comes from two sources, one of which identifies ILEC EF&I costs, the other of which identifies vendor EF&I costs. With respect to ILEC costs to install switching equipment, DTE RR 58 identifies EF&I ratio information provided by Bell Atlantic to the FCC in its "open network architecture" docket (FCC docket 92-91) in 1992. With the exception of one outlier, Maryland, which reported switching EF&I costs of 15.6%, the remaining six jurisdictions had EF&I costs for switching that averaged under ten percent in the aggregate. *See also* Exh. AT&T 20 (Pitts Rev. Reb.) at 41, n.9. ("Sprint agreed that an 8% local telephone company engineering and installation factor was reasonable for rural telephone companies in the FCC's USF proceeding. Small rural companies, with only one or two switches, cannot achieve the same scale and scope associated with engineering and installing large networks owned by the large telephone companies with hundreds and even thousands of switches").

With respect to vendor-related EF&I costs, the data comes from Verizon's SCIS model itself. As explained by Ms. Pitts, the SCIS model can be run to produce material only costs or it can be run to generate costs including vendor EF&I costs. Ms. Pitts simply ran the model to obtain vendor EF&I costs. Tr. 2033 (Vol. 11, Jan. 29, 2002). Ms. Pitts then added the

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[12] WorldCom submits that the Department cannot overlook it, especially in light of the *Rhode Island §271 Order*'s guidance on the construct of a TELRIC-compliant network.

Bell Atlantic and SCIS vendor data together, concluding that total EF&I costs should be approximately 25% of material costs. Per Ms. Pitts's testimony, WorldCom recommends a 25% EF&I factor for switching. Exh. AT&T 20 (Pitts Rev. Reb.) at 40.

Apparently anticipating that its inflated investment costs would be adjusted downward, Verizon has argued that if the dollar amount for its switch investment declines, its EF&I factor must conversely go up, given that installation costs would not change simply because the price of equipment is assumed to decrease. But that argument presumes, incorrectly, that both the initial investment figure and the initial EF&I figure are correct. Here, Verizon overstated both its equipment investment costs and its costs to install the equipment. Adjusting both downward, as is recommended by WorldCom, is appropriate and warranted by the evidence.

3. Verizon Misassigns Non-Traffic Sensitive Investment Costs to Traffic-Sensitive Elements

In deciding whether switch investment costs should be recovered through port or minute-of-use ("MOU") rates, the determining factor should be: "which element causes the cost to be incurred." Tr. 2131-32 (Vol. 11, Jan. 29, 2002). Verizon has assigned several categories of investment costs to the traffic-sensitive switching element that should more appropriately be assigned to the port element. This misallocation of assets has the effect of driving up the per minute-of-use switching rate. This is clearly anticompetitive as it purposefully makes the most potentially lucrative customers, *i.e.*, high-end users, much less attractive because their greater usage magnifies the punitive effects of Verizon's artificially inflated MOU rates. For the reasons set forth below, WorldCom submits that 75% of switching costs should be assigned to port rates

and 25% of switching costs be assigned to usage.

The debate specifically centers around three categories of costs: "getting started" costs; right-to-use ("RTU") fees, and; EPHC costs. Each is discussed below.

"Getting Started" Costs and RTU Fees:

"Getting started" costs are generally the processor, memory and other switch costs that do not vary with the addition of lines or trunks. Exh. AT&T 20 (Pitts Rev. Reb.) at 32. RTU fees are the charges Verizon incurs in leasing or purchasing software from its switching vendors.[13]

The key factor in determining cost causation for digital switches is that digital switches are port limited, not minute-of-use capacity constrained. Exh. AT&T 20 (Pitts Rev. Reb.) at 31 & n.36. In other words, because the processing capacity of switches is so vast, the only thing that will trigger the purchase of a second switch is reaching port capacity. As shown in proprietary Exhibit CP-4 to the Revised Rebuttal Testimony of Ms. Pitts (Exh. AT&T 20), average processor utilizations over the life of Verizon's Massachusetts switches is *****BEGIN PROPRIETARY END PROPRIETARY***** Ms. Pitts explained the practical effect of these low utilization figures:

> At these levels of utilization you're not going to use up the processor. It just won't happen.
>
> So if it's not a limiting resource, if it's not constraining anything, then you cannot assign it to minutes. Minutes do not cause it. If you take minutes away from the switch, that cost will not go down. If you add minutes to the switch, that cost will not go up. I think

[13] RTU fees are typically either "paid on a per switch basis or are paid contractually as part of a larger buy-out. Buy-out contracts allow a telephone company to purchase software for all (or sometimes a subset) of its switches, rather than purchasing on a per switch basis." Exh. AT&T 20 (Pitts Rev. Reb.) at 38.

> it's a very clean issue. What is the cost-causer? It is not minutes. It's the same idea for right-to-use.

Tr. 2132-33 (Vol. 11, Jan. 29, 2002). When asked by the Bench to respond to the Verizon recurring panel's argument in surrebuttal testimony that "users that use a bigger share of resources ought to pay more for use of the resources," Ms. Pitts identified a critical distinction between "cost causation" on the one hand, and "fair allocation" on the other:

> I understand they say that. I don't agree with it. To me, that's not cost-causation, that's sort of a fair-allocation concept, and I think we have to try to keep to cost-causation principles as closely as possible.
>
> Their argument would work if that processor or the right-to-use fee or anything else was something that you were expecting to reach capacity on, and that would cause you to incur more investments. So if you're contributing or advancing the deadline of hitting the capacity of that, well, then you could say, "Okay, on a long-run basis, if somebody is using more of that exhaustible resource, they should pay more." If, however, it is a resource that will not exhaust, which is what we have here, then it's a fixed cost, and where do you assign it? Well, you certainly shouldn't assign it to the most volatile usage-sensitive element. And in fact, my argument is that that resource has to be incurred only if you exhaust lines and ports. You will not exhaust the processor usage. And that is where they are lumping the right-to-use fee. You don't exhaust a right-to-use fee, so how can you say that somebody should pay more of it than someone else?

Perhaps the best evidence that "getting started" costs and RTU fees should not be assigned to the traffic-sensitive usage element for UNE switching is the fact that Verizon itself omits these costs when determining reciprocal compensation rates. *See* Exh. VZ 36 (Recurring Panel Dir.) at 162, n.36 ("Getting started" investments represent the investments associated with switch processor and memory, and are not impacted by the additional reciprocal compensation

usage."). Tr. 1615-16 (Vol. 8, Jan. 24, 2002). *See also id.* at 1644 (RTU fees "[have] no relevance to minutes of use."); Tr. 2351-52. (Vol. 12, Jan. 31, 2002).

By removing them from its own reciprocal compensation calculations, Verizon tacitly admits that these costs are not "traffic sensitive" as defined by the Act. Specifically, pursuant to §251(d)(2)(A)(ii) of the Act, reciprocal compensation rates will not be considered "just and reasonable" unless they are determined "on the basis of a reasonable approximation of the additional costs of terminating such calls." In its *Local Competition Order*, the FCC determined that "only that portion of the forward looking economic costs of end office switching that is recovered on a usage-sensitive basis constitutes an 'additional cost' to be recovered through termination charges," and that "non-traffic sensitive costs should not be considered 'additional costs' when a LEC terminates a call that originated on the network of another carrier." *Id.* at ¶1057. The costs for loops and ports were specifically excluded from the definition of "additional costs." *Id*. By removing "getting started" costs and RTU fees from its "usage sensitive" reciprocal compensation rate, Verizon thus admits that they are not, in fact, "traffic sensitive."

When questioned on whether RTU fees and getting started costs were "additional costs" for purposes of determining reciprocal compensation costs, Verizon witness Matt tried to play both sides of the fence, agreeing that they are "fixed" costs, and yet insisting that they are nevertheless "traffic sensitive":

> Q. I take it that your position is that the getting-started costs and the RTU costs are not, quote, "additional costs," close quote, within the meaning of this statute because they do not vary with the level of traffic; in other words, they're not traffic-sensitive?

> A. [MATT] No, they're fixed costs. We believe they're traffic-sensitive, but they're fixed costs. They're fixed in the sense that they don't vary, when you're looking at it from a cost-study perspective.
>
> Q. They are fixed in the sense that, if you have additional minutes of use, the costs don't go up?
>
> A. [MATT] Correct.
>
> Q. They're fixed in the sense that, if you have additional lines being served by the switch, the costs don't go up?
>
> A. [MATT] Of the getting-started costs and the RTUs.
>
> Q. And the RTUs.
>
> A. [MATT] Yes.

Tr. 1615-16 (Vol. 8, Jan. 24, 2002). *See also id.* at 1644 (RTU fees "[have] no relevance to minutes of use."); Tr. 2351-52. (Vol. 12, Jan. 31, 2002).

Because, as Ms. Pitts correctly points out, the object here is to assign costs to the category of UNE which causes them, the "getting started" costs and RTU fees cannot be recovered in Verizon's usage sensitive switching rates, but rather must be recovered through its monthly port rate.

EPCH Costs:

EPHC (which stands for Equivalent POTS Half Calls) is "an output category that captures the common equipment in the switch module, which is the primary building block component of the 5ESS switch, which uses a 'distributed' architecture. This common equipment's maximum port capacity is reached before its call processing capacity." Exh. AT&T 20 (Pitts Rev. Reb.) at 35. Although not "fixed" like "getting started" costs and RTU fees,

EPCH costs are nevertheless line and trunk port limited. *See id.*; Tr. 2131-36 (Vol. 11, Jan. 29, 2002). As such, WorldCom recommends that these costs similarly be assigned to the port UNE rather than to the usage-sensitive switching element.

WorldCom's proposed 25%/75% allocation of switching costs is in fact quite conservative. The record evidence before the Department would support a rate design under which all costs are assigned to the monthly port charge, on the basis that switch costs are driven by the number of ports. An administrative law judge of the Illinois commission recently came to the same conclusion, affirming a prior conclusion of that commission that "switch costs are driven primarily by per-line considerations at the time of manufacture and that switch prices are driven primarily by per-line considerations as well." *Proposed Order*, Docket 00-0700, Investigation into tariff providing unbundled local switching with shared transport, February 8, 2002, p.4. The ALJ recommended that the Commission adopt the flat-rated unbundled local switching charge proposed by AT&T/WorldCom. Id., pp. 5-6.

4. Verizon's Terminating Reciprocal Compensation Rate Should be the Same as its Unbundled Switching Rate

Verizon has admitted that the switch processing of UNE traffic and reciprocal compensation traffic is indistinguishable. *See* Exh. ATT-VZ-12-10; Exh. ATT-VZ-12-11. Both logic and law dictate that Verizon's terminating reciprocal compensation rates be the same as its terminating unbundled switching rates. Yet, as discussed above, Verizon has proposed rates that are different. WorldCom recommends that the two rates be consistent, and that both sets of rates reflect the changes to Verizon's models advocated by Ms. Pitts.

5. Verizon's Busy Hour to Any Hour of the Day Calculation Inflates Switching Rates

Verizon's Busy Hour to Annual Conversion Factor (Workpaper Part C-3, Section 7, page 1 of 1) uses an outdated Busy Hour to All Hour of the Day ("BH/AHD") ratio that inappropriately increases rates. Based on 1997 data collected in New York (*see* Exh. ATT-VZ-4-48-S), Verizon has proposed a Busy Hour to All Hours of the Day ("BH/AHD") ratio of 8.3%. Verizon's percentage is too high and should be adjusted downward. For the reasons that follow, WorldCom recommends a one percentage point reduction to 7.3%.

Although a 10% BH/AHD ratio "has been the bogey forever" (Tr. 2340 (Vol. 12, Jan. 31, 2002)), Verizon concedes that the traditional busy hour paradigm is no longer applicable because of the tremendous increase in dial-up Internet usage. *See id.* at 2334. Thus, Verizon reflected this trend in its cost study by using the 8.3% input in its 1997 New York data rather than the traditional 10% input. The problem, however, is that Verizon has offered no evidence to suggest that the trend of increasing dial-up Internet usage has not continued in the last five years. Instead, Verizon offers rank speculation that the trend peaked, and has even reversed. Verizon witness Nancy Matt stated as much at the hearing. Verizon saw "[the] Internet take off in '95. Everybody got it. Everybody's buying computers. Everybody's using it." Tr. 2335 (Vol. 12, Jan. 31, 2002). Then, to make Verizon's use of 8.3% appear generous, Ms. Matt continued: "And now, as we're approaching 2000, I suppose, to go the other way and back to the traditional 10 percent because people are getting DSL lines and cable modems." *Id.* at 2335.

This testimony simply is not credible. To hear Verizon tell the tale, the category of dial-up Internet users is a closed universe whose population, established in 1995, has begun to

decline as its members defect to other technologies. This defies common sense and common experience. Although the Internet may have "taken off" in 1995, "everybody" did not join in at that moment. Since then, and since 1997, people have continued to buy computers and access the Internet through dial-up modems. The growth of xDSL and cable modem usage is not inconsistent with the continued growth of dial-up Internet usage as well.

WorldCom submits that Verizon used data from five years ago because it has every reason to believe that more recent data would further flatten out the busy hour. As such, WorldCom recommends that Verizon's proposed 8.3% BH/AHD ratio be reduced to 7.3%, reflecting the one percentage point decline from Verizon's New York data recommended by Ms. Pitts (*see* Tr. 2059, Vol. 11, Jan. 29, 2002).

Finally, Verizon's BH/AHD ratio should reflect the usage of the switch over all 365 days, not just total business days. Verizon's proposal to spread its switch investment over 251 business days inflates its UNE costs. The Department should, at a minimum, use the 308 figure recently adopted in New York. *See NYPSC Order* 36-39.

6. Verizon's Understated Trunk Utilization Inputs Inflate Costs

Verizon has inflated its usage charges by underutilizing trunk port capacity. Exh. AT&T 20 (Pitts Rev. Reb.) at 25. Verizon's inputs to SCIS average just over 15 busy hour CCS/trunk per end office trunk. This translates into 25.63 minutes of use in the busy hour of the switch. For tandem trunks, Verizon uses less than 18 CCS/trunk, which equates to approximately 30 minutes of use in the busy hour. *Id.* at 24. This does not reflect the efficient use of trunk port capacity and is not forward-looking. In Ms. Pitts' experience, trunks normally

operate at over 20 CCS per trunk. Tr. 2078. WorldCom recommends that these inputs be increased to 20 CCS per trunk.

7. Verizon's Feature Port Additive Costs Are Unsubstantiated

There are two basic problems with Verizon's feature port additive costs. First, as discussed above in relation to switch investments generally, Verizon has used the wrong discount and an inflated EF&I factor. Using the correct, deeper discount and a more appropriate, lower EF&I factor results in a lower investment base, and ultimately lower costs. *See* Exh. AT&T 20 (Pitts Rev. Reb.) at 28-29.

Second, and more importantly, Verizon did not substantiate the inputs used to calculate its feature port additive costs (*id*. at 29) despite being given ample opportunity to do so. Because of this abject failure of proof on Verizon's part, WorldCom recommends that Verizon's feature port additive costs be set at zero.

As explained by Ms. Pitts:

> The cost of feature hardware is directly impacted by the inputs VZ-MA enters into the SCIS feature model, called SCIS/IN. Many of these inputs have a linear impact on the feature additive cost . . . For example, if a SCIS/IN input is reduced by one half, the feature additive cost is reduced by one half. Thus, it is essential that these inputs be accurate.

Exh. AT&T 21 (Pitts Surreb.) at 3-4. Verizon's initial responses to discovery regarding how its inputs were developed stated only that the "product manager" was the source of the information and there were no supporting documents. *See* Exh. AT&T 20 (Pitts Rev. Reb.) at 30-31 (discussing Verizon responses to ATT-VZ-4-1, 12-15, and 12-16). Having subsequently been compelled by the Department to provide substantiation for its feature cost inputs, Verizon was

"directed to provide a step by step delineation of the process product managers used to derive [each] estimate" in the event it could provide no documentation. *Interlocutory Order* at 27. Verizon produced no documentation, and its response to "step by step delineation" reads, in its entirety:

> SUPPLEMENTAL REPLY:
>
> At a meeting between the cost analyst and the product manager:
> 1. Each SCIS/IN feature input was discussed.
> 2. The product manager estimated each input value.
> 3. The cost analyst recorded each value as input into SCIS/IN.

See Exh. AT&T-VZ 4-1-S. Based on this response, Verizon's feature cost inputs should be given no weight whatsoever. Although a product manager may have information concerning the penetration rates of certain features, such as what Verizon provided in response to AT&T-VZ-22-3-P, a product manager does not have the data, and is not qualified to opine upon, the usage patterns of port additives; that is an engineering question, not a product management question. *See* Exh. AT&T 21 (Pitts Surreb.) at 5-6. Because the SCIS/IN model requires both penetration and usage inputs, and because Verizon's usage inputs lack support, the SCIS/IN outputs used to generate Verizon's rates are completely unreliable. Because Verizon has thoroughly failed in meeting its burden of proof, WorldCom recommends that Verizon's feature port additive costs be set at zero.

8. Verizon Overstates Nonconversation Time

As explained by Verizon witness Matt, although Verizon bills customers for completed calls, there is additional time that its switches are working and for which it does not bill customers, *e.g.*, incompleted calls. To recover for that non-conversation time, Verizon has

developed a factor which increases the costs of the time it can bill for. Tr. 2315 (Vol. 12, Jan. 31, 2002). The problem, however, is that Verizon builds too much time into its non-conversation time factor, and thereby overstates its costs.

Specifically, Verizon estimates that the percentage of calls completed is 71.5%. As Ms. Pitts has explained, that number is based on very old data and is far too low; an 85% call completion ratio is much more realistic. As such, WorldCom recommends that this input be adjusted to 85%.

Verizon's input of a 71.5% call completion ratio is based on 1992 data. *See* Exh. ATT-VZ 4-49-S. Critically, Verizon recognizes at least one significant change in the intervening years that would increase its percentage of completed calls: "I believe the parties have criticized us, that it [the completion ratio] should have gone up since 1992 because of answering machines. We thought about that, and that's probably true." Tr. 2315 (Vol. 12, Jan. 31, 2002). However, Verizon then suggests that other factors, such as caller ID and call blocking, offset the admitted increase in completed calls brought about by answering machines. *Id*. at 2316. But Verizon offers no proof to back up its claim that these features neutralize the increase of completed calls brought about by answering machines.

And it is not just the ubiquity of answering machines that increases the total. Other developments, such as call forwarding and voicemail also work to increase the number of completed calls. Another major factor that would drive up the percentage of completed calls is call waiting, which Verizon estimates had a residential penetration rate of *****BEGIN PROPRIETARY END PROPRIETARY***** as of December 2000. *See* Exh. AT&T-VZ-22-3-P. Moreover, it does not logically follow that an unwanted call to a person with caller ID

will go unanswered. Very likely, the call will be answered by an answering machine or by voicemail.

This is yet another issue that comes down to burden of proof. Verizon agrees with the logic that completion times have likely increased (although it only discusses one of the many factors that have contributed to that increase, *i.e.*, answering machines). Verizon responds with unsupported speculation that the increase may not have happened after all. Based on the foregoing, WorldCom urges the Department to adjust Verizon's call completion ratio to 85%. Failure to make such an adjustment rewards Verizon for its failure to submit the very evidence that would show its 71.5% ratio to be far too low.

9. Verizon's Attempt to Bill For Switching Twice on an Intra-Switch Call Should Again Be Rejected by the Department

In its March 24, 2000 *Order* in D.T.E. 98-57, the Department rejected Verizon's attempt to assess an unbundled local switching charge twice for an intra-office call, stating that Verizon "provided no evidence in this proceeding showing that the cost of switching an intra-office call differs from switching the originating portion of an inter-office call." *Order*, D.T.E. 98-57 (Mar. 24, 2000), at 219. In September 2000 the Department rejected Verizon's motion for reconsideration. *See Order*, D.T.E. 98-57 (Phase I) (September 7, 2000), at 45-46. In this proceeding, Verizon is once again trying to charge twice for an intra-switch call, and the Department should once again reject this attempt. The entirety of Verizon's support for its latest attempt to recover two switching charges for each intra-switch call consists of two questions and answers in its direct testimony. *See* Exh. VZ-36 at 159. These baldly conclusory assertions

utterly fail to establish the evidentiary basis on which the Department could reliably decide to revisit and reverse its earlier holdings.

Verizon recently tried to accomplish the same goal in New York, following the New York PSC's decision in its recently concluded UNE rate proceeding. Like Massachusetts, New York had previously rejected Verizon tariff language applying two switching charges for an intra-switch call.[14] In the New York proceeding, Verizon submitted the same conclusory testimony as it did here. The New York Commission declined to address Verizon's proposals. Nevertheless, Verizon's New York compliance tariff sought to reverse the Commission's prior decision. New York PSC Staff directed Verizon to withdraw this noncompliant language. And just days ago, on February 28, 2002, Verizon again submitted a compliance filing, stating in its cover letter that the "[unbundled local switching terminating rate element] will not apply to intra-switch calls."[15] Verizon has failed to make its case on this issue and its proposal should once again be rejected.

In sum, Verizon overstates its material and inplace costs, misstates how non-traffic sensitive investments should be allocated, understates the effect of the Internet on the busy hour, builds in excess spare trunk capacity with its low utilization, is inconsistent in its treatment of reciprocal compensation, overstates nonconversent time, and wholly fails to support its port additive costs and its request for charging twice on an intraswitch call. These egregious flaws must be corrected for switching rates to comply with the forward-looking network construct. WorldCom urges the Department to require Verizon to make the corrections identified above.

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[14] *Order Approving Tariff and Directing Revisions*, Cases 95-C-0675, et al., June 12, 1998, at 13.

[15] A copy of Verizon-New York's February 28, 2002 compliance filing is attached for the Department's convenience.

D. VERIZON'S LOOPS RATES ARE TOO HIGH

Verizon has submitted proposed loop rates that substantially exceed its current loop rates. For analog two-wire loops,Verizon is proposing that rates increase in each of the four zones. Statewide, the increase is approximately 20%; in the Metro zone, Verizon's rates would almost double:

Unbundled Loops	Current Rates	Verizon Proposed Rates	Percent Increase
Metro	$7.54	$14.41	+91%
Urban	$14.11	$16.63	+18%
Suburban	$16.12	$20.15	+25%
Rural	$20.04	$28.20	+40%
Statewide	**$15.66**	**$18.75**	**+20%**

As discussed below, Verizon's loop cost inputs assumptions are flawed for at least the following reasons:

- ?? Verizon does not assume a forward-looking technology mix for its network architecture, which increases not only its recurring costs, but its non-recurring costs as well;
- ?? Utilization or "fill" factors are set too low; this spreads Verizon's investment costs over too small a number of revenue-generating network elements, thereby inflating the rates charged for those elements;
- ?? Loop lengths are too long, thereby increasing material costs;
- ?? Verizon's model fails to properly account for growth; and
- ?? Installation costs for installing factory-assembled digital loop carrier equipment are inappropriate and far too high.

1. Verizon's Cost Model Should Assume That All Fiber Fed Loops Are Provisioned Over IDLC, as Opposed to the IDLC/UDLC Mix Proposed by Verizon

The single most significant difference between the outside plant configuration proposed by Verizon and the restated version proposed by WorldCom is with respect to the assumed mix of digital loop carrier ("DLC") technology in the feeder plant. In modeling its network, Verizon provisions 25% of its loops via integrated DLC ("IDLC") GR-303 peripherals, at a 3:1 concentration ratio. Exh. VZ 36 (Recurring Panel Dir.) at 130. The remaining 75% of its outside feeder plant is divided between copper, at 20%, and an older version of DLC technology -- universal DLC ("UDLC"), at 55%. *See* Exh. VZ 14 (Meacham Dir.) at 6.

WorldCom recommends that the amount of IDLC in the modeled feeder plant be almost doubled, to 49.2%. *See* Exh. AT&T 20 (Pitts Rev. Reb.) at 27 (citing Exh. AT&T 25 (Mercer Dir.)), such that there be no UDLC whatsoever in the forward-looking network; the remaining 50.8% of the feeder plant not served via IDLC/GR-303 would be served via copper cables. A new entrant would not invest any resources in UDLC, which is less versatile, less efficient, more labor-intensive and more costly than IDLC via GR-303. *See* Exh. AT&T 23 (Baranowski Reb.) at 15-16. This change alone results in an almost $4 drop in Verizon's statewide average loop rate. *See* Exh. AT&T 23 (Baranowski Reb.) at its attached Exhibit 1.[16]

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[16] Verizon's use of UDLC technology in its cost models significantly increases CLEC non-recurring costs as well. See Exh. AT&T 14 (Walsh Reb.) at 11 (" Verizon intends to use exclusively UDLC for unbundling fiber loops, and has chosen this interconnection methodology to generate the highest possible NRCs, which result from the need for additional manual central office MDF wiring. This out-moded and inefficient technology is a prime example of the inflated NRCs generated by Verizon's improper network assumptions").

Although Verizon does not dispute the efficiency and cost-effectiveness of IDLC via GR-303[17], it nevertheless opposes the way in which IDLC technology is assumed to be used in WorldCom's restated version of Verizon's model for two reasons; one is technical, the other is a technicality. The technicality involves the definition of the word "loop."

As explained by Verizon, "[i]n order to access a 2-wire analog UNE loop, a physical point of interconnection is needed. For this reason, a universal DLC or UDLC interface is needed. Integrated DLC, IDLC, does not have a physical 2-wire connection in a central office. Therefore, a CLEC cannot connect to the 2-wire analog loop unless UDLC or copper cable is used." Exh. VZ 36 (Recurring Panel Dir.) at 75. With IDLC/GR-303 technology, however, the facility interconnecting the ILEC and the CLEC is not a single, stand-alone loop, but rather a DS-1 connection, over which up to 24 individual UNE loops, in DS-0 channelized form, would travel.[18] WorldCom respectfully submits that IDLC unbundling is technically feasible and once implemented, Verizon's loop definitions would need to change.

a. Verizon's Loop Definitions Are Irrelevant

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[17] *See, e.g.*, Tr. 1820-25, discussing Exh. AT&T 18, an excerpt of Verizon testimony submitted in New York (GR-303 provides "the most efficient technology for the feeder component of the forward-looking network," provides cost savings with DS0 channelization and, unlike earlier DLC technologies, GR-303 permits concentration).

[18] Verizon describes the configuration as follows:

> While it would start as a pair of copper wires at the customer's NID, it would connect to a circuit pack in the Verizon DLC remote terminal and then travel through a time slot interchanger (TSI) to a particular channel in a DS1 between the DLC RT and DLC COT. This DS1 could be theoretically leased by a CLEC and connected directly to its collocation area without ever again becoming a pair of copper wires and without ever hitting the main distribution frame.

Exh. VZ 38 (Recurring Panel Surreb.) at 31.

One of the objections Verizon raises to the above-described IDLC unbundling configuration is that the facility interconnecting the ILEC and the CLEC "does not fit the technical definition of any UNE loop type currently provided by Verizon." Exh. VZ 38 at 31. Verizon's argument begs the question. Verizon's definition should not dictate what technological configurations are or are not permissible; it should be the other way around. If Verizon's definition of a loop does not adequately describe a technically feasible and cost effective way to accomplish a digital UNE loop handoff to a CLEC, then Verizon's definition should change.

Moreover, to the extent Verizon's loop definition conflicts with the FCC's definition, it is in any event irrelevant. In its *UNE Remand Order*[19], the FCC "modif[ied] the definition of the loop network element to include all features, functions, and capabilities of the transmission facilities, including dark fiber and attached electronics . . . owned by the incumbent LEC, between an incumbent LEC's central office and the loop demarcation point at the customer premises." *Id.* at ¶167 (footnote omitted). Given that fiber fed loops travel between a remote terminal and an ILEC central office as channelized DS0 circuits, Verizon has no cause to hold up its definition of a loop as a roadblock to using the same technology to interconnect the ILEC to a CLEC's collocation arrangement. Indeed, Verizon witness Gansert conceded at the hearing that despite Verizon's position that "a two-wire loop is defined as interconnection at the main distributing frame . . . . we're not saying that's the only possible UNE that could be defined." Tr. 1816 (Vol. 9, Jan. 25, 2002). In light of the foregoing, having a TELRIC model construct in

[19] *In re Implementation of the Local Competition Provisions of the Telecommunications Act of 1996*, Third Report and Order and Fourth Further Notice of Proposed Rulemaking, 15 F.C.C.R. 3696 (1999) ("*UNE Remand Order*").

which ILEC to CLEC interconnection is made via IDLC/GR-303 technology should not be impeded in any way by Verizon's current definition of a two-wire analog UNE loop.

b. IDLC Unbundling Is Technically Feasible

Verizon's other, more substantive complaint is that the "conceptual architecture" it described earlier (*i.e.*, in which a DS1 "could be theoretically leased by a CLEC and connected directly to its collocation area without ever again becoming a pair of copper wires and without ever hitting the main distribution frame") is "not feasible with present technology." Exh. VZ 38 A-P (Recurring Panel Surreb.) at 30.

WorldCom respectfully submits that IDLC unbundling is technically feasible. Telcordia has acknowledged the technical feasibility of IDLC unbundling. In its most recent edition of "Telcordia Notes on the Network," Telcordia dedicates a section of its chapter on "Distribution" to discussing IDLC loop unbundling. After first discussing the transfer to CLECs of loops served by copper facilities or a UDLC system, Telcordia continues:

> However, if the customer is served by an IDLC system, the loop is digitally transmitted to the ILEC switch. ***There are a variety of 'technically feasible' options available to the ILEC to unbundled the loop.*** Each ILEC has established methods, procedures, and practices needed for implementing these options. Numerous unbundling options are possible because many of today's RDT's [remote digital terminals] support multiple kinds of interfaces such as: GR-303, TR-08, UDLC, and D4 DS1. ***Also, some RDTs are capable of supporting multiple GR-303 Interface Groups, thereby permitting a single RDT to connect to multiple switches.***

DTE RR 81 (Telcordia Notes on the Network, Section 12.13.2.1, at 12-53 (emphasis added); *see also* Exh. VZ-ATT/WC 1-38 and its accompanying attachments. One of the unbundling options discussed is "IDLC Unbundling Using Separate GR-303 Interface Groups" which includes a

schematic (figure 12-35) depicting "GR-303 DS1(s)" being routed to an ILEC switch and to two CLECs *See id*. at 12-55. After having seen the Department's interest in this Telcordia document after Mr. Donovan first mentioned it (*see* Tr. 3108-15 (Vol. 16, Feb, 6, 2002)), Verizon's counsel asked Mr. Gansert to discuss the issue of IDLC unbundling on redirect examination. Mr. Gansert responded that "Verizon has never -- doesn't and has never contended that there hasn't been defined methodologies that could be used, that could be developed, to do that." Tr. 3526-28 (Vol. 17, Feb. 7, 2002). In trying to frame what Verizon believes to be the issue currently facing the Department, Mr. Gansert continued:

> The question, I think, before the Department here is not whether or not such a theory exists. I mean, I was sitting here yesterday when the Telcordia document was read. No doubt, Telcordia has some ideas. They got some of those ideas from us about how to unbundle loops.
>
> The real question is, is the equipment available and the software available that can support the kind of environment that's needed for unbundled loops, and that environment requires additional capabilities and in terms of security, administration, testing, many other functions. The simple answer is that the equipment is not available and has not been developed. . . .

Id.. The fact of the matter is that the issues Mr. Gansert raises with respect to equipment and software, *i.e.*, "security, administration, testing, many other functions," do not in any way detract from the technical feasibility of IDLC unbundling. Telcordia itself acknowledged the existence of these same issues in the very same section in which it lists the "'technically feasible' options" to unbundled IDLC loops. DTE RR 81 at 12-53. While not insubstantial, these are essentially OSS development issues, not barriers that make the technology infeasible.

c. Verizon Has Powerful Economic Incentives to Resist The Commercial Availability of IDLC Unbundling

WorldCom submits that the "real question" is ***not***, as Mr. Gansert suggests, whether the "equipment is available." Rather, the real question is "what incentive is there for incumbent LECs – the would-be purchasers of such equipment – to pursue the development of such equipment?" Mr. Walsh alluded to the answer in his testimony:

> I do not see the ILECs jumping ahead and saying, "This is a great technology. We're going to put this in place because it's going to reduce the nonrecurring costs and therefore allow you into our network."

Tr. 889 (Vol. 5, Jan. 18, 2002). Put more bluntly, Verizon and the other ILECs have no incentive whatsoever to take the steps necessary to bring IDLC unbundling from technical feasibility to commercial availability. As pointed out earlier, recurring loop rates will decrease substantially if Verizon's model is altered to assume IDLC loop unbundling. And as Mr. Walsh suggests, NRCs for unbundled loops will also drop because the manual cross connects required for the transfer of copper pairs become unnecessary.

It is therefore not surprising that Verizon continues to oppose IDLC unbundling so vehemently. That should not, however, deter the Department from finding that consistent with its obligation to cost a forward-looking, TELRIC-compliant network, IDLC unbundling is technically feasible. Verizon's cost models should be adjusted to reflect this change in the manner recommended by WorldCom.

2. Verizon's Fill Factors Are Too Low And Do Not Reflect What An Efficient Carrier In A Forward-Looking Network Would Achieve

Verizon's proposed fill factors for its outside loop plant substantially inflate the cost of UNEs by including excessive amounts of spare capacity. A brief hypothetical may put that statement into context. Assume the total universe of loops consists of one hundred loops, each of which has an investment cost of one dollar. The total loop plant investment is therefore $100. A fill factor of 40% means that only 40 loops are available to recover the $100 investment. Spreading the investment costs over the 40 loops available to generate revenues results in a per loop charge of $2.50. In essense, when buying one loop, a carrier is paying for two-and-a-half. Verizon's proposed fill factors likewise force CLECs to pay for spare facilities they can never use while subsidizing Verizon's unfettered access to those same spare facilities to serve its own customers. This result – requiring CLECs to pay for facilities that Verizon can use to compete against them – is anticompetitive and discriminatory. WorldCom therefore recommends that Verizon's low fill factors be adjusted upward to levels more consistent with what an efficient carrier in a forward-looking network could achieve.

a. Verizon's Distribution Fill Factor of 40% Is Too Low; WorldCom Recommends a 64% Fill Factor

Verizon uses a distribution fill factor of 40%. Exh. VZ 36 (Recurring Panel Dir.) at 78. To arrive at that number, Verizon begins with the assumption that two distribution cable pairs are required for every zoned living unit (whether or not the living unit has actually been built). Id. at 78-79. Verizon concedes that based on that assumption, the "average residential demand" is 1.2 lines per living unit, which translates to a 60% fill factor. Id. at 79. But citing two major contributing factors, construction "breakage" and designing for long-term demand,

Verizon makes a series of adjustments designed to reduce arbitrarily and substantially the distribution utilization level to 40% – far too low for a forward-looking network.

WorldCom is not alone in this criticism. In its *Massachusetts §271 Order* the FCC was similarly critical:

> In addition, commenters have pointed out that Massachusetts used substantially lower fill factors in calculating its UNE-loop rates than this Commission has used in its USF cost model. ***For copper distribution cable, which affects loop rates, Verizon used a fill factor of 40 percent for metro, urban, and suburban zones.*** In the *SWBT Kansas/Oklahoma Order*, the Commission found that a fill factor of 30 percent for distribution cable was too low because it assumed that too large a percentage of capacity would be idle for an indefinite time, contrary to TELRIC's presumption of an efficient network. The Commission noted that it adopted fill factors ranging from 50 to 75 percent for the USF cost model, that the Kansas Commission adopted a 53 percent distribution cable fill factor, and that the New York Commission adopted a 50 percent distribution cable fill factor. ***We question whether the low fill factor used in Massachusetts is appropriate without a state-specific justification.***

Id. at ¶39 (emphasis added). Verizon has presented no state-specific evidence in this proceeding justifying the use of a fill factor in Massachusetts that is lower than in other parts of the Verizon region, or the regions of other ILECs for that matter. The state-specific evidence Verizon *did* provide only confirms that its proposed fill factor is not forward looking. Verizon's response to RR-DTE 83 indicates a statewide average distribution fill of 38.5%, almost identical to its 40% proposal. In its *SWBT Kansas/Oklahoma Order*[20], the FCC held that "[t]he ALJ's decision [in a state proceeding upholding SWBT's proposed 30% fill factor] violates TELRIC ***because it used***

[20] *In the Matter of Joint Application by SBC Communications Inc., et al., for Provision of In-Region, InterLATA Services in Kansas and Oklahoma*, Memorandum Opinion and Order in CC Docket No. 00-217 (rel. January 22, 2001) ("*SWBT Kansas/Oklahoma Order*").

current fill, and refused to consider the forward-looking fill or assume that the fill factor would increase over time." *Id*. at ¶80 (emphasis added).

WorldCom submits that to make Verizon's modeled distribution plant forward-looking and consistent with TELRIC, the numbers Verizon used in making its adjustments must themselves be changed, as must Verizon's initial assumption that two lines per zoned living unit are required in all cases to be built. After making the modifications suggested by WorldCom below, Verizon's distribution fill factor climbs to over 64%.

i. The Assumed Number of Pairs Per Living Unit Must Be Reduced

The first modification that must be made is Verizon's assumption that it must build out two pairs per zoned living unit. As discussed by AT&T/WorldCom witness Michael Baranowski:

> I think that a two-pair-per-living-unit guideline for network engineering may be an assumption -- and I understand it's a longstanding assumption in the telecom industry. I don't think it's relevant to the proceeding we're in here, which is one where we're trying to calculate the forward- looking cost of serving today's demand with some reasonable estimates or adjustments for future anticipated growth.
>
> So in this situation, where a lot is known about today's demand and a lot is known about the demographics and what has taken place in the network historically, there's enough information to be able to more specifically tailor a design criteria that is something less than two lines per living unit. I don't disagree that, if you're venturing into an unknown or a brand-new development, where you have no historical basis for knowing what the service is going to be or what the demand requirements are going to be, two lines per living unit may be a reasonable minimum. But it's different here, where we know what demand is and we know what the patterns have been over time.

Tr. 2148 (Vol. 11, Jan. 29, 2002).[21] Given that an operating assumption for purposes of reconstructing a TELRIC network is that the anticipated level of demand is known, it is appropriate to adjust the two lines per zoned unit assumption downward. WorldCom recommends that the figure be modestly changed to assume the existence of enough distribution plant to serve 1.6 lines per zoned living unit, enough to meet the average demand of 1.2 lines per unit and still have spare capacity left over.

ii. Inappropriate Adjustments Must Be Eliminated

To get down to its proposal, Verizon chips away at the assumed utilization of distribution cable with purportedly "forward-looking" adjustments designed solely to increase costs. For instance, Verizon estimates that "on average 90 percent of the zoned units have been built, and hence the current maximum potential demand is 90 percent of the ultimate demand" (Exh. VZ 36 (Recurring Panel Dir.) at 79), which is the same as lowering utilization by ten percent. But by "assuming reduced utilization at the beginning of the analysis and not making subsequent adjustments, Verizon implicitly assumes that the spare for undeveloped parcels will remain forever." Exh. AT&T 23 (Baranowski Reb.) at 22.

> Under this approach, revenues from these parcels will never be available to defray the investment in spare placed solely for their benefit. Moreover, Verizon has not established that these parcels are likely to be developed within the projected life of the outside plant spare. In effect, Verizon is providing spare capacity designed

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[21] Verizon has claimed that "[t]he two pair allocation has been proven by experience to be the lowest allocation per potential customer location that accommodates demand variability without excessive cost." WCOM-VZ-4-1 at 2. However, Verizon also admits that: (1) it has no documents to support that assumption (*see id*. at 1), and; (2) this "industry practice" dates back to prior to the divestiture of AT&T in 1984 (*see id.* at 2), a time when local telephone monopolies were governed by rate-of-return regulation rather than by alternative regulation plans designed to encourage and reward efficiency.

> to be available to serve additional demand created when undeveloped parcels are ultimately developed, but makes no offsetting adjustment to reflect that the overall cost per working line will decline as that excess plant is converted from "spare" to "revenue producing" once the demand materializes.

Id. at 22-23. As Mr. Baranowski further points out, the FCC addressed this issue in *USF Inputs Order*[22]:

> If we were to calculate the cost of a network that would serve all potential customers, it would not be consistent to calculate the cost per line by using current demand. In other words, it would not be consistent to estimate the cost per line by dividing the total cost of serving all potential customers by the number of lines currently served.

Exh. AT&T 23 (Baranowski Reb.) at 24 (citing *USF Inputs Order* at ¶58). WorldCom thus recommends that this 10% utilization reduction be eliminated in its entirety.

Similarly, WorldCom recommends the elimination of another ten percent reduction of utilization proposed by Verizon to account for customers not served by Verizon facilities (*i.e.*, those customers without telephone service altogether or who have service through the facilities of another provider). First, this approach fails to consider that until such time as current Verizon customers migrate to another carrier they will continue to use Verizon's facilities and contribute a revenue stream. And second, Verizon fails to account for the fact that facilities left spare by one customer become available to serve other existing or future customers. *See* Exh. AT&T 23 (Baranowski Reb.) at 24-25.

Making the adjustments described herein increases Verizon's starting fill from 60% to 75% (*i.e.*, the average usage of 1.2 lines/unit where assumed number of pairs per unit is

1.6 rather than 2.0), which is then reduced by 5% because of churn (as in Verizon's model), and by an additional 10% because of breakage (as in Verizon's model). The result is a distribution fill factor of 64.125%, which is much more appropriate for an efficient forward-looking network. For the foregoing reasons, WorldCom recommends that this figure be substituted for Verizon's 40% distribution fill when calculating loop costs.

b. Verizon's Feeder Fill Factors Are Too Low

Verizon proposes a copper feeder fill of 55.2%. Far from being an estimate of what is achievable in a forward-looking network, Verizon simply took its existing copper feeder fill and dubbed it forward looking. *See* Exh. ATT-VZ-2-24 ("Verizon MA does assert that the existing copper cable fills reflect the most economic cost of providing copper feeder plant in a forward looking network"). The extremely low copper feeder fill factor prescribed by Verizon not only increases costs by including more spare capacity than is foreseeably needed, it increases the risk that the facilities will become technically obsolete years before they are ever used. *See* Exh. AT&T 28 (Donovan Reb.) at 7.

As explained by AT&T/WorldCom witness John Donovan, for copper feeder cable, "generally accepted outside plant engineering practice calls for building sufficient spare pairs to allow reinforcing (adding new copper feeder cable facilities) every 3 to 5 years. At 3 percent growth per year, this would equate to allowing a 3 to 5 year growth margin of 9% to 15%"; with a fill factor of 80%, there would still be "sufficient spare capacity to handle 3 to 5

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[22] *In the Matter of Federal-State Joint Board on Universal Service*, CC Docket 96-45, and *Forward Looking Mechanism for High Cost Support for Non-rural LECs*, CC Docket 97-160, Tenth Report and Order, No. FCC 99-304 (rel. November 2, 1999).

years worth of growth and churn." Exh. AT&T 28 (Donovan Reb.) at 9. WorldCom recommends that the Verizon model's copper feeder fill be substantially increased, to 80%.

With respect to fiber feeder, Verizon recommends a 60% fill factor. Exh. VZ 36 (Recurring Panel Dir.) at 83. As explained by Mr. Donovan, fiber fill should be at 100% with an allowance for doubling the number of fibers per remote terminal site for full redundancy, resulting in an effective fill of 50%. Exh. AT&T 28 (Donovan Reb.). It should be noted that Verizon's 60% fiber fill also anticipates full redundancy, so Verizon's effective fiber fill is 30%. *See id.* at 46. There is no reason to have this much spare capacity. With technologies such as wave division multiplexing, which allow for the simultaneous transmission of multiple data streams over the same fiber strand, the amount of cable recommended by Verizon generates investments "with far more optical fibers than will be necessary to meet the service needs addressed in this proceeding." *Id* at 9-10.

c. Verizon's Assumed Fill for Remote Terminal Plug-In Cards is Too Low

As admitted by Verizon, installing additional digital loop carrier ("DLC") channel unit plug in cards requires less advance planning than other loop plant components, and therefore the installation intervals are shorter. Exh. VZ 36 (Recurring Panel Dir.) at 89. Notwithstanding this admission, Verizon uses a 80% fill factor for its remote terminal plug-in cards. Stated another way, for cost study purposes, Verizon installs 20% of spare capacity. As pointed out by Mr. Donovan, assuming a high 3% annual growth in second lines, it would take almost seven years for Verizon to exhaust the idle spare capacity sitting on its DLC RT shelves (assuming the cards themselves did not become obsolete during that lengthy period). Exh. AT&T 28 (Donovan

Reb.) at 10 & n.15. Given the relative ease with which DLC plug-in cards can be installed, and taking account of the "generally accepted standard in the industry" to install enough plug-in cards for "existing service plus 6 months growth (1½% spare at 3% per year growth)" (*see id*. at 11), WorldCom recommends that the Department increase this fill factor to 90%, as suggested by Mr. Donovan.

3. Distribution Loop Lengths Are Unsubstantiated

In determining the length of its distribution plant, Verizon identified the longest distribution pair in each distribution area and assumes that the average distribution cable length in that area is half the length of the longest pair. Tr. 1835 (Vol. 9, Jan. 9, 2002); Exh. VZ 38-A-P (Recurring Panel Surreb.) at 35. Verizon claims that by using this method, it is being conservative and is likely understating cable lengths. *Id.* However, that conclusion is based on the assumption that houses within a distribution area are "evenly dispersed." *Id.* at 36 Verizon has presented no evidence supporting the assumption that consumers are "evenly dispersed" within distribution areas. This convenient conclusion is instead based entirely on Verizon witness Livecchi's subjective experience. Tr. 1837-38 (Vol. 9, Jan. 25, 2002).

That Verizon's loop length assumptions are based on an unsupported assumption regarding customer locations is, to say the least, a curious turn of events. In its analysis of the "Hatfield model" in 1996, the Department leveled criticism on Hatfield for doing essentially the same thing:

> The creation of the outside plant based on [population data] is unrealistic because, in essence, the model is placing houses and business where they do not currently exist...there are at least some circumstances in which this formulation will be far afield of the

> actual manner in which a local distribution system will be built….[such a model] has the clear potential, given the configuration it adopts, to present skewed results with regard to local loop plant investment.

Consolidated Arbitrations Phase 4 Order at 21. Given that the HAI model sponsored by AT&T in this case is based on geocoded customer location data, it appears that it provides the Department with the best evidence of actual loop lengths in a forward-looking network configuration.

4. Verizon's Use of EF&I Factors for Installing Factory Assembled Digital Loop Carrier Equipment is Inappropriate and Far Too High

Verizon's EF&I factor for the installation of DLC equipment is flawed in much the same way its switch EF&I factor is flawed, namely, the aggregation of disparate equipment types and installation costs does not accurately reflect the material-cost-to-installed-cost ratio for equipment that would be newly installed in a forward-looking network. The application of Verizon's EF&I factor to factory-assembled DLC equipment is a particularly egregious example of how Verizon is rigging the deck to overcharge CLECs.

As Mr. Donovan explained, DLC equipment comes pre-assembled by the vendor, and its cost to install is very minor in relation to its material cost. Exh. AT&T 28 (Donovan Reb.) at 13-15. Application of Verizon's across-the-board EF&I factor generates absurdly high installation costs that are neither realistic nor forward looking. *Id.* In contrast, the engineering and installation hours recommended by Mr. Donovan provide a much more rational measure of EF&I costs for the installation of DLC cabinets. WorldCom thus recommends that the Department reject the Verizon-proposed EF&I factor in favor of Mr. Donovan's proposal that

specific costs for appropriately billed engineering and installation hours be used in calculating the installed costs of DLC equipment.

5. Verizon Engineering Survey Does Not Even Attempt to Identify Efficient Feeder or Distribution Routes

Verizon argues that its "existing routes are the best estimate [of efficient-forward-looking feeder routes] based on the physical reality of a network actually developed to serve Massachusetts" Tr. 1832 (Vol. 9, Jan. 25, 2002). However, Verizon performed no analysis in reaching the conclusion that the current feeder routes of its embedded plant, upon which its feeder length calculations are based, would be the same as those of an efficient carrier installing feeder plant today. Instead, Verizon's conclusion is "based on the judgment of our engineers and our experts." *Id*. As discussed by Mr. Baranowski: "Basing a loop cost study on embedded base information violates TELRIC principles, and just does not make sense in constructing a least-cost network configuration that an efficient, competitive company would build today." Exh. AT&T 23 (Baranowski Reb.) at 12.

In addition, as demonstrated by the survey instructions used in gathering the data, "both the feeder and distribution outside plant structure are based on the structure in existence today, with no effort made to define the efficient, forward-looking structure." *Id*. at 13. That preliminary conclusion was confirmed by Verizon's subsequent response to ATT-VZ-14-32, which provided "Distribution Area Documentation Records" and related documents showing that the purportedly "forward-looking" loop routing in Verizon's cost study is essentially identical to the existing routing in of its embedded plant. Here again, it appears that the only evidence

before the Department that even attempts to reflect a forward-looking design of the outside loop plant is the HAI model sponsored by AT&T.

6. Verizon's Loop Study Fails to Account for Growth

While Verizon's engineering survey instructions "consider the provision of the current level of demand, utilizing forward-looking engineering guidelines and technologies, over the next several capacity additions"[23], Verizon fails to spread the costs of this additional demand over the additional demand itself. In other words, "today's customers are forced to bear the costs for facilities they will never use." AT&T Exh. 23 (Baranowski Reb.) at 33. To correct for this error, Mr. Baranowski included an estimate of 3% annual growth in the restatement of Verizon's loop rates. This adjustment properly adjusts the cost per line by decreasing costs as additional demand materializes. *See id*. at 33-34. This adjustment for growth was recently approved by the New York Public Service Commission in its UNE rate case. *See NYPSC Order* at 96-98. WorldCom urges that the Department adopt it here as well.

E. VERIZON'S INTEROFFICE TRANSPORT RATES ARE OVERSTATED

As discussed in the testimony of Steven Turner on behalf of AT&T and WorldCom, there are serious flaws in the way in which Verizon calculates its dedicated and common (shared) interoffice transport costs. For dedicated transport, these include:

?? The understatement of the capacity of the SONET rings, which results in significantly overstated costs for the circuits riding those SONET rings;

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[23] See Exh. AT&T 23 (Baranowski Reb.) at 33 & n.20 (citing Verizon's response to AT&T-VZ-14-31).

- The improper inclusion of Digital Cross-connect System ("DCS") costs on most dedicated transport circuits regardless of whether the CLEC elects this element;

- The use of an installation factor for transport equipment that is significantly higher than Verizon's own data demonstrates to be reasonable, and;

- The use of a fill factor for DS1 to DS0 multiplexing that does not adequately account for how this element is used by the CLEC.

In addition, with respect to common transport:

- Because Verizon used the dedicated transport cost study for DS1 Dedicated Transport and STS-1 Dedicated Transport as the underlying cost element for common transport, the cost changes resulting from the correction of the flaws identified above should be incorporated into the common transport study, and;

- Verizon significantly overstated the distances between its central offices in calculating common transport costs.

It is also important to remember that while Mr. Turner's analyses may focus only on a particular subset of interoffice costs (*e.g.*, one particular type of circuit), the changes he recommends are generally applicable throughout Verizon's studies and should therefore be carried through to all situations where the logic of Verizon's inputs or assumptions are flawed.

The restated rates for dedicated transport are listed at pages 17-18 of Mr. Turner's rebuttal testimony (Exh. AT&T 23). WorldCom urges the Department to act on Mr. Turner's recommendations and adjust Verizon's interoffice transport models accordingly.

1. Verizon Understates the Number of Ports per SONET Node

Verizon understates the number of ports that must be utilized at each SONET node to provide 48 DS3s on the SONET ring. By doing so, Verizon significantly overstates its

investment per DS3 circuit resulting in inflated dedicated interoffice transport costs. As explained by Mr. Turner:

> Since the bulk of the costs associated with SONET rings is a fixed cost based on physically establishing the SONET node, the vast majority of the investment must be made irrespective of whether one DS3 is in service or 48 DS3s are in service at the particular SONET node. In performing its cost analysis, Verizon-MA averages this total cost across the number of ports that are assumed at the SONET node. As a result, it is vitally important to accurately determine the average number of ports per node so as to not misstate this average investment per port.

Exh. AT&T 16 (Turner Reb.) at 6. Based on the assumptions made in Verizon's model, the mathematically correct number of ports per node is 25. Verizon, however, includes only 16 ports, thereby spreading the node costs over too few ports. *See id.* at 5-7. By significantly understating the number of ports per node for DS3s, Verizon has commensurately overstated the investment per DS3 in its cost calculation, which ultimately inflated its claimed interoffice dedicated transport costs. This conclusion was later confirmed with the production of proprietary Verizon engineering documents, as discussed in Mr. Turner's surrebuttal testimony. *See* Exh. AT&T 17-P (Turner Surreb.) at 10-11. Per Mr. Turner's recommendation, the number of ports per ring in Verizon's study should be 25, not 16.

2. DCS Costs Should Not Be Averaged Into Verizon's Interoffice Transport Costs

Digital Cross-connection System, or DCS, allows for telecommunications providers to electronically cross connect different speeds of dedicated transport on to one another. "In other words, this piece of equipment allows the telecommunications carrier to take multiple DS1 dedicated transport circuits, entrance facilities, or loops and place them (also

referred to as grooming) onto a DS3 circuit that can then be carried to another location." Exh. AT&T 16 (Turner Reb.) at 10.

In the *Local Competition Order*, the FCC made it clear that while CLECs were permitted to have access to DCS, they were likewise free to choose not to purchase this element. *See id.* at ¶447. In accordance with the terms of the *Local Competition Order*, the interconnection agreement between WorldCom subsidiary MCImetro Access Transmission Services, Inc. and Verizon provides in Section 10.2.11 that Verizon "offer Dedicated transport together with and separately from DCS wherever DCS equipment is available." Exh. AT&T 16 (Turner Reb.) at 12.

In restating Verizon's cost study, Mr. Turner did not recalculate the cost for DCS; rather, he has separately identified its costs so that it is no longer automatically included in interoffice transport costs. *Id*. at 13. WorldCom recommends that the Department adopt this change.

3. Verizon's Multiplexing Fill Factors Should Be Set at 1.0

A CLEC purchasing DS1 to DS0 multiplexing equipment purchases the entire capacity of the equipment. Whether or not the capacity is actually used by the CLEC, Verizon is being compensated for the entire capacity. *See* Exh. AT&T 16 (Turner Reb.) at 13-14. Because Verizon bears no financial risk as a result of underutilized multiplexing equipment, it makes no economic sense for the equipment to have a fill factor assigned to it. *Id*. at 14. Per Mr. Turner's recommendation, WorldCom submits that Verizon's fill factor for DS1 to DS0 multiplexing equipment should be set at 1.0.

4. Verizon's "In Place" Factor is Inflated

Verizon has proposed an in-place factor for transmission equipment of 53.2 percent, a figure significantly greater than the 36.4 percent it presented in the New York UNE proceeding. *See* Exh. AT&T 16 (Turner Reb.) at 15. As discussed by Mr. Turner, in his experience the in-place cost for transmission equipment should be in the 30 percent range, and there is no reason to believe that installation costs in Massachusetts should be 46 percent higher than in New York. *Id*. Moreover, Verizon provided no information or documentation that would account for this huge disparity. *Id*.

In surrebuttal, Verizon responded to Mr. Turner's criticism by noting that the New York factor was based on 1997 purchases, while the 1998 factor was based on 1998 purchases, suggesting that a decrease in material prices over that one-year period accounted for the massive year-over-year increase in installation costs. Exh. VZ 38-A (Recurring Panel Surreb.) at 93. Mr. Turner debunked that excuse at the hearing. After being referred to Verizon's testimony, Mr. Turner had the opportunity to comment on it:

> Q. In your opinion, would this justify an EF&I factor in Massachusetts 46 percent greater than that proposed in New York?
>
> A. Absolutely not.
>
> Q. And could you explain that, please?
>
> A. First of all, pricing of this equipment isn't changing that fast, that you would get a 46 percent increase in the installation factor in just one year.
>
> Secondly, they could have supported, if they had provided contracts for this -- Normally these contracts are

> multiyear in nature, and the only way that this would have been supportable is if they had indicated that they actually have a new contract between '97 and '98 that dramatically lowered the cost per unit of their equipment.
>
> I followed this very closely. This is not the time frame when equipment prices started dropping rapidly for transport equipment. They started dropping rapidly in 2000. 1999, 2000, 2001, you started seeing SONET equipment prices dropping at extremely rapid rates.
>
> So I don't believe between '97 and '98 you would have experienced that change in equipment prices, keeping labor approximately the same or maybe slightly more. You could not have gotten a 46 percent increase in your overall installation factor from a TELRIC perspective in one year.

Tr. 1512-14 (Vol. 8, Jan. 24, 2002). As such, pursuant to Mr. Turner's recommendation, WorldCom requests that Verizon's in place factor for transmission equipment be reduced to the 36.4 percent figure it proposed in New York.

5. Verizon Has Significantly Overstated The Weighted Average Distance Between its Wire Centers in Developing Common Transport Costs

Finally, for purposes of billing common transport, Verizon's cost study assumes that the average distance between wire centers is 37.52 miles. *See* Exh. AT&T 16 (Turner Reb.) at 20; Verizon Workpaper Part C-2, Section 3, Line 5. In his rebuttal testimony, Mr. Turner (1) identified the appropriate way for Verizon to develop a weighted average of the distance between its wire centers, (2) criticized Verizon for failing to identify precisely how it arrived at its input, and (3) criticized the input itself, recommending instead that the Department substitute a 12 mile input for Verizon's 37 mile entry.

First, as to the appropriate way to determine common transport distances, Mr. Turner explained that Verizon "should have evaluated how many minutes of transport traverse each of its cross sections (transport between any two wire centers) and used these minutes to weight the mileages between these same cross sections. By doing this, Verizon-MA would have developed a weighted average distance based on the number of minutes traversing its switched network." Exh. AT&T 16 (Turner Reb.) at 19.

Second, with respect to Mr. Turner's criticism of Verizon's failure to adequately explain how it arrived at its results, Verizon responded in surrebuttal that it "developed the average miles by examining the actual mileage of every local and toll circuit in Massachusetts." Exh. VZ 38-A-P (Recurring Panel Surreb.) at 94.

While that answered Mr. Turner's "how did Verizon calculate this" question, it also confirmed Mr. Turner's third criticism – that the calculation is inappropriate:

> They have affirmatively said that they calculated their distance from simply taking circuit mileages, and that's just on its face wrong. So in other words, if you had two central offices in downtown, that would probably have a very close proximity to one another and have a very high level of usage between one another, you wouldn't just want to take the one mile -- let's just say, arguably -- one mile between those offices and average it with, say, a 20-mile distance that you might find out in Springfield between two offices that might not have a lot of traffic in common. You would want to weight that one mile with however many millions of minutes that you had there and then take the miles in Springfield and weight it with the number of minutes there, which would likely be lower.
> And that's what I was suggesting, is that in places where I've seen weighted-average calculations done, you tend to get distances that are around 12 miles.

Tr. 1516-17 (Vol. 8, January 24, 2002). At the hearing, Verizon witness Anglin asserted that Verizon was doing "exactly" what Mr. Turner suggests, but then went on to explain that Verizon was doing something far different. Rather than developing a weighted average based on the minutes that travel over the circuits between offices, Verizon weights the average distance based on the number of trunks between offices. Tr. 2501 (Vol. 13, Feb. 1, 2002). And not only is it different from what Mr. Turner suggests, it is absolutely not appropriate for three reasons.

First, it assumes that the number of trunks in Verizon's embedded network is an appropriate indicator of what an efficient carrier in a forward-looking network would have. As discussed in the section on switch costs above, however, Verizon utilizes its trunks inefficiently. It is therefore inappropriate to conclude that the number of trunks Verizon used in its calculations capture forward-looking efficiencies.

Second, and more important, it is simply wrong to assume that looking at the number of trunks is an adequate substitute for measuring the number of minutes because trunk efficiency increases as the size of a trunk group increases. Taking Verizon's hypothetical from the hearing (*see* Tr. 2500 (Vol. 11, Jan. 29, 2002)): a central office has 500 circuits running to another central office 10 miles away, but only 10 circuits running to a central office 50 miles away. Verizon's weighting methodology assumes that the amount of traffic on the 500 circuits is proportionally the same as that on the 10 circuits, *i.e.*, that the increase in traffic is linear and those 500 circuits carry 50 times the amount of traffic as the 10 circuit group. In truth, each trunk in the 500 group would carry about twice as much traffic as a trunk in the 10 circuit group. The Erlang B table the Department used at the hearing proves the point that efficiency increases dramatically as the assumed number of trunks grows.

Third, trunk groups are usually installed in multiples of 24 trunks, *e.g.*, as a DS-1, not as DS-0 circuits. Larger trunk groups more efficiently fill a DS-1. Again, Verizon's method overstates costs.

F. Verizon's Annual Cost Factors Artificially Increase Its Costs

After Verizon has calculated its investments and loaded them to determine in place costs, it then applies a number of annual cost factors ("ACFs") ostensibly for the purpose of translating the installed investments into annual costs for UNEs. Verizon uses its ACFs as an opportunity to further drive up its costs with phantom expenses and sleight-of-hand calculations. As discussed below, there are numerous corrections that are required before Verizon's ACFs can be used to determine TELRIC-compliant annual costs.

1. Verizon's Forward-Looking to Current Factor Inappropriately Inflates Forward-Looking Expenses And Should Be Rejected By The Department

Given that the TELRIC construct is specifically designed to capture *forward-looking* costs, a "forward-looking-*to-current*" cost factor, which by its very name goes in the wrong direction, should be viewed with suspicion. In this case, the suspicion is warranted. Verizon's forward-looking-to-current ("FLC") factor is, as its name suggests, a factor designed to take expenses that are forward-looking and inflate them back to current levels. As discussed in Mr. Baranowski's testimony, this factor is inconsistent with TELRIC and should be rejected by the Department.

The purported justification for the FLC factor is as follows: if an expense-to-investment ratio is developed with current expenses and embedded investments, the application of that ratio to forward looking investments will understate expenses if forward-looking investments are lower than embedded investments. Verizon's proposed solution is to divide its historical expenses by .8, thereby increasing them to compensate for this understatement of expenses. *See* Exh. VZ 36 (Recurring Panel Dir.) at 59-60. The problem with the FLC factor, however, is that it assumes that only investment levels will decline in the forward-looking environment. Verizon's justification for the FLC is flawed because it is based on the false premise that forward-looking expenses will not also decline. *See* Exh. AT&T 23 (Baranowski Reb.) at 34-36. The technology mix, age of equipment and efficiency levels assumed in the forward-looking network are all different than that of the current network. As such, it is wholly improper to assume that historic expense levels, which are based on aging embedded plant and its concomitant inefficiencies, will remain constant. *See id*. 36-39. Per Mr. Baranowski's recommendation, WorldCom urges the Department to reject Verizon's FLC factor.

2. Verizon's RTU Factor Is Inflated And Must Be Adjusted Downward

The RTU ACF "is based on a ratio of annual RTU software costs and total investment associated with either switching or digital circuit equipment." Exh. VZ 36 (Recurring Panel Dir.) at 153. It accounts for roughly ten percent of the total switch cost usage charges proposed by Verizon. Exh. AT&T 20 (Pitts Surreb.) at 10. In 1999, one of the years Verizon looked at when developing its RTU ACF, there was an accounting rule change that caused a significant spike in the RTU costs recorded on Verizon's books. As revealed by Exh.

ATT-VZ-12-2-S-P, the 1999 figure, once adjusted to remove the effect of this accounting change, is significantly lower than what Verizon used in its RTU factor cost study. As discussed by Ms. Pitts, "[i]nserting the correct 1999 expenditure number into [Verizon's RTU factor workpaper, Part G-9, workpaper page 1of 3] in the RTU Cost study decreases the RTU factor by approximately twenty-six percent." WorldCom submits that the appropriate way to account for Verizon's expenses without skewing the results is to use the actual expenditures for the year. Verizon's RTU ACF should be adjusted accordingly.

3. Verizon's Joint and Common Cost Factor Must Be Adjusted To Account for Merger Savings

Verizon itself has touted that the "synergies" resulting from the Bell Atlantic/GTE merger should be measured in billions of dollars. *See* Exh. CC-10 (Apr. 13, 1999 Form S-4). At the same time, Verizon argues that merger savings should not be separately accounted for in calculating its UNE costs because these savings are already incorporated into a "productivity offset." Exh. VZ 38-A-P (Recurring Panel Surreb.) at 12. But Verizon has failed to support that assertion with any proof, other than Mr. Anglin's vague reference to a discussion with internal Verizon economists who, not surprisingly, confirmed for him that Verizon's projected productivity assertions capture merger savings. Tr. 1867 (Vol. 9, Jan. 25, 2002). Moreover, as Mr. Baranowski points out, Verizon's UNE operating expenses were developed based on the ratio of 1999 operating expenses to 1999 investment. Exh. AT&T 23 (Baranowski Reb.) at 41 (citing Verizon Cost Study Part G-2 Common Overhead). "To the extent that the 1999 operating expenses have not yet been purged of all embedded inefficiencies and Verizon has already quantified the level of merger savings, those merger savings should be reflected on a forward-

looking basis." *Id.* Indeed, much of the information in Verizon's cost studies dates from prior to the closing of the Bell Atlantic/GTE merger and therefore could not reflect the merger-related synergies and savings that have benefited Verizon since then.

The remaining question for the Department is: what should those merger savings be? Mr. Baranowski initially identified a 2.5% reduction in Verizon's joint and common cost factor but further noted that recognition of merger savings of 3.57% was justified based on Verizon's own public statements about the beneficial effects of the merger. *Id.* at 42 & n. 25 (citing Exh. AT&T 25 (Mercer Dir.) at its exhibit RAM-3). In light of the foregoing, WorldCom submits that a 3.57% reduction in Verizon's joint and common cost factor is warranted. The Department should require that this cost factor be modified accordingly.

4. Verizon's Network ACF Fails to Properly Reduce Maintenance and Repair Costs Associated with New Plant

In developing its maintenance and repair expense ratio for metallic cable, Verizon uses its embedded plant, but adjusts the actual repair expense by 5 percent to reflect "Latest Design Standards." *See* Exh. AT&T 23 (Baranowski Reb.) at 43 (citing Verizon Cost Study Part G-5 – Network Factors). This exceedingly minor adjustment (which Verizon provides no explanation for) falls far short of the adjustment required to capture the maintenance and repair benefits of an all new metallic cable facility. *Id.*

In a new, forward-looking network envisioned in a TELRIC study, both repair expenditures associated with defective pairs and rearrangement expenses will decline from their historic levels. *Id.* In recognition of the significant savings associated with the upkeep of new

plant, Mr. Baranowski's restatement of Verizon's rates includes a more appropriate 30% reduction to both repair and maintenance expenses. *Id.* This adjustment is consistent with the New York PSC's recent decision, in which Verizon was ordered to reduce its network ACF by 30%. *See NYPSC Order* at 66-68. WorldCom recommends that Verizon be required to make a similar adjustment here.

5. Verizon Fails to Properly Incorporate Anticipated Productivity Gains

In New York, Verizon "assumed productivity savings of 2% above inflation for network related expenses (primarily maintenance) and 10% above inflation for non-network-related expenses." *NYPSC Order* at 53. Here, according to Verizon, "[t]here are two general factors applied in the study. One of them is the productivity offset, and then we also consider inflation over the same time period. One offsets the other." Tr. 1720-21 (Vol. 9, Jan. 25, 2002). There is nothing in the record in this case that would explain how or why Verizon cannot realize in Massachusetts the real productivity gains it has assumed for itself in New York. At minimum, the "insufficiently ambitious" 3.3% per year net-of-inflation productivity gain Verizon proposed in New York (*see NYPSC Order* at 53) should apply as well in Massachusetts. Verizon's cost studies should be modified accordingly.

6. Verizon's Assumed Advertising Expenses Should Be Disallowed

Verizon's wholesale marketing ACF should be removed from Verizon's cost study. At the outset, the notion that purchasers of UNEs might possibly need to be reminded of their supplier's identity or products is laughable. Second, with this ACF, Verizon is trying to

collect real money from CLECs for imaginary ads. Verizon witness Michael Anglin knew of no specific examples of Verizon engaging in "market stimulation" advertising for its wholesale UNE products. Tr. 1726-27 (Vol. 9, Jan. 25, 2002). Not surprisingly, Mr. Anglin was also unaware of any brand-awareness advertising undertaken by Verizon directed to its CLEC customers. *Id.* at 1728-29. Third, to the extent Verizon *did* have any advertising, whatever brand awareness or market stimulation that followed would inure to Verizon's benefit; CLECs should not be forced to subsidize Verizon's attempts to grow its business.

III. VERIZON'S NON-RECURRING COST STUDY IS NOT TELRIC-COMPLIANT AND GENERATES EXCESSIVE NON-RECURRING CHARGES

TELRIC-compliant non-recurring charges are essential to the development of competition in Massachusetts. Inflated NRCs can serve as barriers to competitive entry in the same manner as excessive recurring charges. Put another way, resolving UNE recurring cost issues correctly will be of little comfort to would-be competitors if Verizon's proposed NRCs are inflated.

AT&T/WorldCom witness Richard Walsh describes in his testimony how Verizon's non-recurring cost model ("NRCM") violates TELRIC costing principles by:

- assuming out-moded and inefficient technology;
- charging for manual tasks that are unnecessary;
- including in NRCs costs that should be recovered through recurring rates, and;
- including assumptions that have no purpose other than to inflate rates.

Per Mr. Walsh's recommendations, the Department should require Verizon to make the necessary changes to its NRCM to bring it into compliance with the FCC's TELRIC rules.

First, Verizon's NRCM must be made to conform with efficient technology assumptions. For instance, as discussed in the recurring charges section above, the inclusion of universal digital loop carrier technology in Verizon's models does not comport with the TELRIC requirement of an efficient, forward-looking, least cost network construct. The presence of UDLC in Verizon's cost studies works to inflate Verizon's non-recurring charges, *e.g.*, by increasing the amount of manual labor required to provision UNE loop orders. *See* Exh. AT&T 14 (Walsh Reb.) at 11

Second, Verizon's NRCM does not reflect the efficient use of OSS, but instead assumes too high a level of manual intervention in the service ordering process. *See id.* at 12. The resolution of orders with CLEC-caused errors in format or content should be the rejection of the orders back to the CLEC by Verizon's OSS. *See id*. at 15. Verizon, however, has modeled a resolution process that involves Verizon's correction of information so that the order can continue through the provisioning process. *Id.* This "fall out" from the efficient, electronic ordering process via OSS generates the need for significant manual intervention. This intervention is unnecessary "[b]ecause the OSS should be detecting and delivering notice of such errors." *Id*. at 16. Per Mr. Walsh's recommendation, WorldCom submits that fall out should not exceed 2 percent in a forward-looking network construct. *Id.*

Verizon similarly models a provisioning process that fails to reflect the efficient use of OSS. Exh. AT&T 14 (Walsh Reb.) at 17. As with the ordering process, errors should be

processed back to the CLEC rather than attended to manually by Verizon personnel. *Id.* at 18. If the order does not contain errors, then the assignment of facilities should in almost all cases be done by an OSS programmed to pick the most appropriate facilities. *Id.* at 18-19. Verizon's NRCM, however, shows the existence of several work groups engaged in the provisioning process. Of particular concern is the MLAC, whose function is to assign outside plant for non-flow-through service orders. The significant role that the MLAC is to play in Verizon's loop provisioning model indicates that Verizon is not appropriately assuming the efficiencies of a forward-looking operations support system. For Verizon's model to more accurately reflect the efficient use of OSS in the provisioning process, Mr. Walsh recommends that fallout for the MLAC also be set at two percent. Exh. AT&T 14 (Walsh Reb.) at 20; *see also id*. at 20-28 for additional examples of Verizon workgroups performing tasks of questionable value in a truly forward-looking network construct).

The third major problem category with Verizon's NRCM is that it improperly seeks to recover through non-recurring charges for tasks that are more appropriately viewed as for the benefit of the network in general, and therefore recurring in nature. For instance, fallout associated with database or system maintenance should not be recovered in non-recurring rates at all; given that a correctly populated database benefits Verizon and all CLECs using or relying on the accuracy of the data, it is more appropriate that these tasks be recovered through recurring rates. Exh. AT&T 14 (Walsh Reb.) at 19. Field cross connects at the serving area interface are another example; the connection made will benefit not only the CLEC and its customer, but over time it will also benefit other CLECs and Verizon itself.

Fourth, there are numerous examples of Verizon seeking to load its NRCs with inappropriate charges. For example, the Verizon NRC rate structure seeks to collect from CLECs both the charge to connect a new customer and the charge to disconnect the customer. CLECs should not have to pay to disconnect a loop at the time it is being ordered. This violates fundamental principles of cost causation and serves only to inflate the charges CLECs must pay in order to enter the market. Exh. AT&T 14 (Walsh Reb.) at 36. Another example is Verizon's 2-wire hot cut process which, as explained by Mr. Walsh, results in inordinate and expensive work times being assessed against the CLEC. *See id*. at 47.

Without going through an exhaustive list of all the individual deficiencies in Verizon's NRCM, it nevertheless becomes clear that the problems are systemic and arise from Verizon's fundamentally flawed view of what a TELRIC-compliant, efficient, forward-looking network is. The FCC's recent *Rhode Island §271 Order* is instructive in that it unequivocally states that the appropriate "assumption" for purposes of "TELRIC pricing" is "a forward-looking network built from scratch, given the location of the existing wire centers." *Id.* at ¶34. Verizon's nonrecurring cost model is, at core, based on Verizon's existing network, and by definition it does not reflect all the efficiencies of a new carrier entering the market. As such, WorldCom urges the Department to purge Verizon's model of the inherent inefficiencies and unfair practices identified in Mr. Walsh's testimony. Only then will the Department be able to set nonrecurring rates that comply with the FCC's TELRIC rules.

IV. Conclusion

WorldCom respectfully requests the Department to (1) require Verizon to make the specific changes to its cost models identified herein, (2) require Verizon to make all other changes warranted by the evidence adduced in this proceeding, and (3) adopt TELRIC-compliant UNE rates that will allow statewide UNE-based competition.

Respectfully submitted,

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Dated: New York, New York
March 5, 2002

CERTIFICATE OF SERVICE

I hereby certify that I have this day served the foregoing upon each person designated on the attached service list by email and either U.S. mail or overnight courier.

Dated: New York, New York
March 5, 2002

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