

stated that BellSouth should have applied a factor for declining cost characteristics, and a forward-looking productivity factor. (WorldCom Brief at 5-6, citing Porter Testimony at 5-7)

Consistent with the forward-looking approach, the Staff recommended against allowing BellSouth's proposed Residual Recovery Requirement (RRR) because the RRR would cause the forward-looking prices to revert back to historical, embedded-cost prices that are conceptually the same as rate of return or rate-based prices.

Discussion

The Commission agrees with the Staff and certain intervenors that allowing BellSouth's proposed Residual Recovery Requirement would run counter to the goal of moving Georgia's telecommunications marketplace toward competition, and would contravene the directive of the 1996 Act at Section 252(d)(1)(A) that UNE prices are to be based on the cost "determined without reference to a rate-of-return or other rate-based proceeding." The proscription in Section 252(d)(1)(A)(ii) against traditional rate-of-return or rate base methodologies certainly supports, if not mandates abandoning the traditional method of establishing rates to recover all embedded costs. The Commission's previous Orders in this docket (December 6, 1996) and in Dockets No. 6415-U/6537-U (September 18, 1996) established a presumption that prices should be based upon TELRIC, as a forward-looking methodology. BellSouth was afforded in this docket an opportunity to show otherwise, but the Commission concludes that the forward-looking TELRIC methodology adopted herein is appropriate under the statutes and reasonable under all the circumstances.¹⁰

The Commission further concludes that BellSouth is not entitled to claim the RRR in order to be "made whole" under state law either, because BellSouth elected alternative regulation under the Georgia Act. Moreover, the forces of competition as well as the Georgia Act and 1996 Act have rendered traditional monopoly guarantees of embedded cost recovery obsolete. As the U.S. Supreme Court has stated, even the Due Process clause is only applied to prevent "governmental destruction of existing economic values. It has not and cannot be applied to insure values or to restore values that have been lost by the operation of economic forces." *Market Street Railway Co. v. Railroad Commission*, 324 U.S. 548, 567 (1945). BellSouth's proposed RRR would fluctuate in amount, depending upon the forward-looking TELRIC calculation, and simply adds to the TELRIC costs the amount that would result in full recovery of historical, embedded costs. Essentially the RRR would result in BellSouth recovering its embedded costs in a manner consistent with fully distributed costs under traditional rate-of-return or rate base regulation. The way in which BellSouth developed and

¹⁰ AT&T's Proposed Order filed October 20, 1997, indicates that AT&T considers the reasonable allocation of forward-looking joint and common costs to be separate from, and additional to, TELRIC costs. AT&T Proposed Order at 6-9. Although the Commission recognizes the basis of AT&T's view, this Commission does not make such a distinction in this case. Accordingly, in adopting a forward-looking TELRIC approach, this Commission also endorses the concept of a reasonable allocation of forward-looking joint and common costs.

proposed the RRR shows that even BellSouth does not consider the associated costs to be part of the forward-looking or economic cost approach under Section 252(d) for establishing cost-based rates for UNEs and interconnection. Thus the RRR falls under the category of values lost by the operation of market forces under the *Market Street Railway* analysis.

It should be noted, similarly, that BellSouth's proposed RRR represents only BellSouth's view of what it would be entitled to recover for its embedded costs. It is a matter of speculation as to whether, had the Commission conducted a traditional rate-of-return or rate base proceeding, the Commission would have agreed with the amount of and rate design for any such embedded cost recovery.

It is a well-established principle of statutory construction under both Georgia law and federal law that words generally bear their usual and common meaning and that the words in a statute should be given their ordinary meaning. See *Ardestani v. Immigration & Naturalization Service*, 502 U.S. 129, 130 (1991); O.C.G.A. § 1-3-1(b). Although Sections 251 and 252 of the Act are clear when read as a whole, it is equally important for the Commission to consider the intent of Congress in discharging its responsibilities under the Act. Although the evidence presented in this docket is quite voluminous, the application of the law to that evidence is not difficult. The pricing standards contained in the Act require that rates be based on cost, but not on historical or embedded costs. If set pursuant to this basic standard, such rates will act to promote competition in Georgia's local exchange market and satisfy the intent of the 1996 Act as well as the pertinent provisions of the Georgia Act.

The Commission does not agree with BellSouth's attempt to argue confiscation under the U.S. and Georgia constitutions. Numerous parties raised similar constitutional concerns in the appeal of the FCC's Interconnection Order. In its opinion on review of that Order, the U.S. Court of Appeals for the Eighth Circuit noted these concerns, but concluded that such claims were not yet ripe for review. *Iowa Utilities Board*, 120 F.2d at 818. There are several reasons why the confiscation argument does not apply to BellSouth's RRR. These include the *Market Street Railway* analysis; the fact that BellSouth is no longer subject to traditional regulation under the Georgia Act, and under Section 252(d); and not least, the fact that recovery of economic costs in UNE, interconnection, and for that matter collocation rates will adequately compensate BellSouth for the services which it must provide to CLECs under the Act.

In addition, the proposal of applying the RRR only to the loop and switch port element would artificially inflate the price of these elements relative to the price of other elements in a way that results in discriminatory rates in violation of Section 252(d)(1) of the 1996 Act. The Commission concludes that allowing BellSouth's RRR (which BellSouth priced at \$5.83 for the loop) would artificially inflate the prices that consumers must pay for local exchange services, would create a substantial barrier to entry, and would be discriminatory, contrary to both the 1996 Act and the purpose and letter of the Georgia Act.

B. User-Adjustable Input Assumptions

Each cost study includes major assumptions that can be adjusted. The following subsections of this Order contain discussions of certain major assumptions that have a significant impact upon the resulting UNE rates.

1. Cost of Capital

BellSouth must earn a reasonable return on its investment as a part of recovering the appropriate costs in this proceeding. A reasonable return, often referred to as "profit," should be considered part of the costs that an ILEC should receive because the cost of capital is a necessary part of making the investment that makes the unbundled network elements and other facilities available. Therefore, although BellSouth is no longer subject to traditional "rate of return" regulation, the cost of capital is one of the costs that must be considered in determining cost-based rates in this proceeding. The 1996 Act at Section 252(d)(1) provides that the rates for interconnection of facilities and equipment and for network elements shall be based on the cost, and "may include a reasonable profit." Classic economic theory holds that the cost of providing a good or service must necessarily include a reasonable return in order to enable the investment necessary to carry on the business. "[T]he rate of return includes profit (in the traditional sense), as well as interest on debt capital and dividends on preferred stock."¹¹

The Commission must make a determination with respect to the following three items: (1) what is the proper capital structure; (2) what is the proper cost of debt; and (3) what is the proper cost of common equity. In its analysis of the evidence and its determination of the appropriate capital structure, cost of debt and cost of equity the Commission should be guided by the principles set forth by the U.S. Supreme Court in *Bluefield Water Works and Improvement Co. v. Public Service Commission of West Virginia*, 262 U.S. 679 (1923) and *Federal Power Commission v. Hope Natural Gas Company*, 320 U.S. 602 (1944). Essentially, these cases require that the return on common equity set by the Commission be commensurate with returns on investments and enterprises with similar risks; that the return is adequate to ensure the confidence of the financial markets; and is sufficient to allow the Company to maintain its credit worthiness and to allow it to attract capital as required on reasonable terms.

The U.S. Supreme Court has affirmed these standards in more recent decisions in *Federal Power Commission v. Memphis Light, Gas & Water Division*, 411 U.S. 458 (1973); *Permian Basin Rate Cases*, 390 U.S. 747 (1969); and most recently in *Duquesne Light Company and Pennsylvania Power Company v. Barasch*, 109 U.S. 609 (1989). Although this case does not involve traditional rate-of-return regulation, these standards remain an appropriate reference for purposes of determining cost of capital as a part of cost-based rates.

¹¹ Charles F. Phillips, Jr., *The Regulation of Public Utilities* (3rd Ed., Publ. Util. Rpts. 1993), at 375-376.

In this proceeding, the Commission received the expert testimony of three witnesses relating to the fair and reasonable rate of return on common equity. BellSouth's witness, Dr. Billingsly, did not submit direct testimony but did submit rebuttal testimony to the direct testimony of the other two witnesses, Dr. Cornell on behalf of AT&T/MCI, and Dr. Legler on behalf of the Staff. In his rebuttal testimony, Dr. Billingsly also testified to the reasonableness of the Company's proposed cost of capital including the cost of common equity, essentially presenting the Company's affirmative showing in this area. All of these financial experts presented detailed explanations of several methodological approaches to the determination of the cost of equity.

All three of the expert witnesses applied in various ways the three financial models generally found acceptable by the Commission over the years. BellSouth witness Billingsly applied the Discounted Cash Flow model, the Capital Asset Pricing Model (CAPM), and the Risk Premium approach. Although Dr. Billingsly set out to confirm the reasonableness of the Company's requested overall return, he concluded that the current cost of equity capital for BellSouth is within a range of 14.83% to 15.28%. His estimates included an adjustment for flotation costs. His DCF model results produced a range from 14.93% to 15.28%; his CAPM analysis produced a range from 14.83% to 14.93%; and his risk premium approach produced a range from 14.29% to 15.15% based on the overall equity market as measured by the Standard & Poor's 500 Index. (Billingsly Testimony, page 4, lines 10-21)

AT&T/MCI witness Cornell applied the DCF method and the CAPM method. Dr. Cornell estimated the cost of equity to be in a range from 10.64% to 11.05%. From this range he selected the midpoint, 10.85%, as his recommended cost of equity. His overall range reflects the midpoints of his estimates of the financial models. The actual DCF range was 8.56% to 11.91%. (Cornell Testimony, page 14, line 20), and the CAPM range was 10.97% to 11.14%. The Staff submits finds that it would be more accurate to characterize Dr. Cornell's range as from 8.56% to 11.14%, somewhat broader than he suggests.

Staff witness Legler utilized a Discounted Cash Flow analysis, a Risk Premium analysis, and a Capital Asset Pricing Model analysis. Dr. Legler recommended a cost of common equity of 11.3%, the midpoint of his range of 10.3% to 12.2%. Dr. Legler updated his original estimates in his rebuttal testimony filed on August 29, 1997. In contrast to Dr. Billingsly, Dr. Legler recommended that no flotation cost adjustment be applied. Dr. Legler applied the financial models to data for BellSouth, the Bell Regional Holding Companies, and a group of independent telecommunication companies. He reported his results for these groups of companies, and found considerably broader ranges of estimates than his recommendation would imply.

BellSouth asserted that the reference in 47 U.S.C. § 252(d)(1)(B) to a "reasonable profit" means a profit that is over and above the recovery of all costs, including the cost of capital. However, BellSouth stated, it has not specifically sought a profit in addition to its cost of capital. (BellSouth Brief at 52.) BellSouth stated that it accepted the FCC's "suggestion" at Paragraph 702 of Order 96-325 that the currently authorized rate of return at the federal or state level is a reasonable

starting point for TELRIC calculations, and thus based its cost studies on the currently authorized FCC return on investment of 11.25 percent. Based on a capital structure of 40 percent debt and 60 percent equity, this would translate to a return on equity of 13.42 percent and a cost of debt of 8 percent. (BellSouth Brief at 52.)

Discussion

The Commission adopts the cost of capital presented by Staff witness Dr. John B. Legler in this proceeding, including the mid-point of the range he presented for the cost of equity capital. Dr. Legler's analysis was forward-looking and took account of the changing risks in the increasingly competitive telecommunications marketplace in Georgia. Dr. Legler's analysis assessed investor expectations for telecommunications companies in general, and BellSouth in particular, in the current environment of increasing deregulation and competition. This market-determined approach incorporating investor expectations thus reflects investors' forward-looking requirements for return on equity capital.

The Commission does not accept BellSouth's assertion that the "reasonable profit" referred to in 47 U.S.C. § 252(d)(1)(B) means a profit over and above the costs including cost of capital. While this point may be moot since BellSouth did not seek such an explicit additional profit, the Commission notes that BellSouth's interpretation would run counter to established pricing principles that the reasonable profit is incorporated within the concept of cost of capital, precisely because that is the profit expected by investors - the "cost" to be covered - in return for committing capital.

The U.S. Supreme Court has made it clear that the setting of just and reasonable rates involves a balancing of the interests of investors and ratepayers. *Hope, supra*, 320 U.S. at 603. While these standards were established in the days of "traditional" ratemaking, they are still appropriate for a case such as this wherein the Commission must assess the appropriate return as a part of BellSouth's costs. The cost of debt and the cost of equity generally move in the same direction, though not necessarily in lock-step. The financial models employed by the expert witnesses are helpful in making the necessary determinations, but the results of these models must be tempered with reason and informed judgment. In this regard, the Commission must use its own expertise in judging the credibility and reliability of the testimony presented by the witnesses, and exercise its own expertise in evaluating the financial climate.

The Cost of Common Equity

As the Consumers' Utility Counsel succinctly put it, the question regarding cost of equity is how much the company must earn in order to induce investors to hold and to continue to buy its common stock. Although the Commission should not adhere to one particular theory or methodological application to determine the cost of equity, it should test the estimates and recommendations presented to it against the standards discussed above to determine the reasonableness of the approaches used by the witnesses. With these standards in mind, the

Commission may carry out its responsibilities to engage in a careful analysis of the evidence regarding the cost of equity.

The financial models were applied in different ways. For example, Dr. Cornell used a multi-stage version of the DCF model. While the multi-stage version of the DCF model has an apparent advantage in the degree of sophistication, ultimately judgment must be used in selecting the required growth rates. The Commission finds that this version of the model does not necessarily produce superior results compared to the more simple version of the model, nor is there less subjectivity in the selection of the growth rates. The Commission also notes that Dr. Billingsly used a version of the DCF model which takes into consideration the quarterly timing of dividend payments. Using the quarterly version of the DCF model will produce higher estimates of the cost of equity. However, it is not necessary for ratepayers, or in this case purchasers of services, to be required to provide that added or incremental return. Shareholders can obtain this increment to the return simply by investing the dividends they receive.

The Commission finds that Dr. Legler's recommended range is the result of sound judgment that reflects a forward-looking approach rather than the arithmetic averaging technique favored by the other witnesses. Having thoroughly reviewed the testimony of the witnesses, the Commission finds that the differences in the recommendations are based largely on the comparison or proxy groups chosen by the witnesses in the application of the financial models. Dr. Cornell and Dr. Legler chose to use telephone companies in their analyses. Dr. Billingsly chose to use a group of 20 companies from a population of 390 firms in his analysis. Dr. Billingsly used a method known as cluster analysis to select this group of companies. Dr. Billingsly stated that as a portfolio or group of companies, he believed that the group was of comparable risk to BellSouth. He acknowledged that individually the companies were not comparable in riskiness to BellSouth. But based on the measures of risk that he chose to use, these were the 20 companies closest in riskiness to BellSouth. No company could be substituted for one of the twenty and make the group more comparable. Therefore, these companies must be close to one another's riskiness. Companies comparable in riskiness should have reasonably comparable expected returns. But as shown on Exhibit No. RSB-3 of Dr. Billingsly's testimony, the individual results for the companies are not comparable or closely grouped around the averages he reports. The results based on ZACKS growth rates range from 11.61% for Chevron to 20.22% for Motorola. The Staff agreed with Dr. Cornell's statement that if we "were to accept the results of his cluster analysis, then one would have to believe that the risk of the network element leasing business was more similar to the risks faced by Coca Cola, McDonalds and WalMart stores, as examples, than to the risks faced by BellSouth's parent company BellSouth (which owns LEC's and the underlying network elements)." (Cornell, Surrebuttal Testimony, page 2, lines 13-17). The Staff disagreed with Dr. Billingsly's assertion that Dr. Cornell's and Dr. Legler's surrogates or proxies are inappropriate, and submitted in this case that telecommunications companies are a better comparison group to BellSouth than the group of predominately non-utility companies used by Dr. Billingsly.

Some of the testimony touched on "flotation cost" as being a factor to include in the cost of equity calculations. Flotation costs are such items as stock underwriting fees. The Consumers' Utility Counsel agreed with Staff witness Legler that if no new stock is issued, as has been the case with BellSouth since 1984, and none is planned, then no flotation factor is relevant. (CUC Brief at 34, citing Legler Direct at 42.) Further, the CUC pointed out, BellSouth is planning to eliminate stock through a billion dollar repurchase, thereby actually reducing the current float; and there is no reason to suggest that an equity issue will be made in the foreseeable future. (CUC Brief at 34.)

Based on all of the evidence on the record, the Commission adopts the recommendations of Staff witness Dr. Legler regarding the cost of common equity for BellSouth. Dr. Legler used two basic methods to estimate BellSouth Telecommunication's cost of equity capital: (1) applications of finance theory; and (2) the comparable earnings approach. Contrary to the CUC's suggestions (CUC Brief at 33-34), Dr. Legler's approach was inherently forward-looking and did not simply calculate an embedded or historical equity cost. In performing his analysis, Dr. Legler used three financial models acceptable to the Commission: the Discounted Cash Flow method; the Risk Premium method; and the CAPM. In applying these models, Dr. Legler used financial data for BellSouth, the Bell Regional Holding Companies, and a group of independent telephone companies. Based on these analyses, he recommended a range for the cost of common equity from 10.3% to 12.2%, with a midpoint of 11.3%. Dr. Legler recommended that the midpoint be used for purposes of calculating the overall cost of capital.

The Commission concludes that as a matter of fact, law, and regulatory policy, the Staff's recommendations regarding BellSouth's return on equity capital are reasonable, appropriate, reflect a forward-looking approach and will allow BellSouth the opportunity to earn a fair, just and reasonable return on equity for purposes of establishing cost-based rates in this proceeding. Therefore, the Commission adopts Dr. Legler's recommended midpoint of 11.3% as the Commission-authorized return on (*i.e.*, cost of) equity capital for purposes of computing the costs in this proceeding.

Cost of Debt

The Commission finds that the cost of debt should be consistent with the capital structure (discussed below). BellSouth's embedded cost of debt as of June 30, 1997 was 6.44%. The Consumers' Utility Counsel suggested that a forward-looking analysis should use only the current or most recent yield for BellSouth's bonds, rather than the embedded cost of debt. (CUC Brief at 32-33.) BellSouth claimed that the current forward-looking cost of debt would be at least 7.50%. (Billingsly Testimony, page 5, lines 12-13.)

However, singling out the current or most recent debt will not necessarily be the best forecast for forward-looking debt costs, since the cost of debt can be expected to vary over future years. BellSouth's current embedded cost of debt reflects a range of debt costs over time, so it represents a reasonable proxy for a range of debt costs over future years. From another point of view, it does

not appear necessary for BellSouth to issue new long-term debt in the amount implied by the adopted capital structure to finance the subject assets. Accordingly, any cost rate authorized in excess of the actual embedded cost of debt would flow to equity and increase the return to common equity. The Commission agrees with its Staff that this would not be just or reasonable, and concludes that the appropriate cost of debt to apply in this proceeding is the Company's current rate of 6.44%. The Commission notes that BellSouth's witness Dr. Billingsly used this rate in one of his tests of the reasonableness of the overall requested return of 11.25%. (Billingsly Testimony, page 5, lines 5-10.)

Capital Structure

The Commission recognizes that BellSouth's capital structure has reflected an increasing equity ratio over the last several years, which generally tends to increase the overall cost of capital, but there is no evidence that BellSouth has taken explicit actions to effect this change. For example, BellSouth has not issued additional common equity to increase the ratio represented by equity over debt. Furthermore, BellSouth did not seek to have market-based ratios used as a substitute for book values. The CUC suggested (CUC Brief at 34) that Staff witness Dr. Legler's use of BellSouth's current capital structure was consistent with an embedded cost approach, rather than a forward-looking approach. However, even if such a contention were theoretically valid, there is no clear evidence of how a forward-looking capital structure would vary from the current capital structure.

Based on the thorough review in this record, the Commission concludes that it is appropriate to use the most recent available actual capital structure, and finds that this capital structure adequately reflects what is likely to be a forward-looking capital structure. The Commission therefore adopts BellSouth's actual capital structure as of June 30, 1997, consisting of 41.68% debt and 58.32% equity, for purposes of calculating the weighted average cost of capital for this proceeding.

The Overall Cost of Capital

Using the Commission's conclusions, the overall rate of return is derived as computed in the following table:

	<u>OVERALL RATE OF RETURN</u>		
	<u>Ratio (%)</u>	<u>Cost (%)</u>	<u>Cost (%)</u>
Long-Term Debt	41.68%	6.44%	2.68%
Common Equity	58.32%	11.30%	6.59%
Total	100.00%		9.27%

Therefore the overall rate of return for computing costs in this proceeding is 9.27%.¹²

¹² This has the effect, by way of example, of reducing BellSouth's proposed 2-wire analog loop recurring (monthly) rate by \$1.81. These decreases in rates are stand-alone adjustments. This means that when

2. Depreciation

Depreciation expense is one of the major costs that must be considered in establishing the cost-based rates in this proceeding. Both of the cost models presented by the parties contain assumptions regarding depreciation expense, which in turn is a function of the length of the plant lives. The longer the plant life, the lower the depreciation rate and the lower the depreciation expense per year that is factored into the cost methodology.

AT&T and MCI submitted testimony recommending use of the projection lives underlying the depreciation rates prescribed by the FCC in its 1995 prescription of depreciation lives for BellSouth in Georgia. Further, their testimony stated that the FCC required that only forward-looking costs be used in the setting of plant lives and the calculation of costs must be based upon the expected economic lives of newly placed plant. The Staff stated that the FCC used statistical studies of the most recent prescribed factors and each carrier's most recent retirement patterns, carriers' plans, and current technological developments and trends. The FCC staff always used a forward-looking approach to setting depreciation rates and rarely uses historical data.

AT&T/MCI witness Majoris recommended the use of regional economic lives consistent with depreciation lives used for public reporting purposes. MCI noted that these financial book lives are conservatively biased to protect shareholders, not the interest of ratepayers. (MCI Brief & Proposed Order at 20, citing Majoris Direct at 12-13.) The Hatfield Model used projection lives and future net salvage percent prescribed for BellSouth in Georgia in 1993 by the FCC. MCI stated that the FCC's projection lives are of a forward-looking nature as confirmed by empirical tests. (*Id.*) These depreciation rates are also specific to Georgia.

BellSouth proposed depreciation lives consistent with those it uses for public reporting purposes and regulatory reporting in Georgia. (Caldwell/Zarakas Direct at 9.) The proposed lives used in BellSouth's TELRIC cost studies were based on BellSouth's 1995 and 1996 Depreciation Studies, which contain detailed explanations of methodology, data, and analysis that BellSouth contended support the asset lives and other depreciation parameters presented in the studies. (BellSouth Brief at 50, citing Cunningham Rebuttal at 6-8 and attached Depreciation Studies.) BellSouth claimed that the FCC depreciation lives for establishing depreciation rates are too long and anti-competitive because actual lives are shorter than those prescribed by the FCC and do not allow BellSouth to recover its investment. BellSouth further claimed that the FCC lives are too long because of normal equipment mortality, and that the FCC has not looked forward enough to properly assess the impact of technological evolution and increasing competition to determine appropriate

each adjustment is made singly (on a stand-alone basis) to BellSouth's study, it has the stated effect. However, when all the adjustments are made, the interactive effect results in a total unified adjustment that is different from the mere addition of the stand-alone adjustments. For example, the cost of capital adjustment itself tends to reduce the effect of all other stand-alone adjustments because it reduces the overall return associated with the capital investment portion of costs.

forward-looking lives. Finally BellSouth claimed that because of the Georgia Act at O.C.G.A. § 46-5-169(8), it is able to establish its own depreciation rates (BellSouth Brief at 49-52.)

AT&T asserted that BellSouth's depreciation rates are not state-specific, would recover BellSouth's investment faster than a competitive market would permit, and thus would be discriminatory. AT&T/MCI witness Majoros testified that over a decade ago, the FCC directed its staff to put less emphasis on historic data in estimating productive lives, and to pay "closer attention to company plans, technological developments and other future-oriented analyses."¹³ Recently, he added, the FCC reaffirmed its forward-looking orientation in connection with the simplification of its depreciation prescription practices.¹⁴ Mr. Majoros also analyzed and presented evidence showing that the FCC's projection lives for depreciation have been forward-looking. (Majoros Direct at 4-7.)

Mr. Majoros also compared BellSouth-Georgia historical lives and retirement patterns to the FCC-prescribed lives and retirement patterns for the major accounts. He found that the FCC's prescribed projection lives are generally much shorter than the recent historical indications. Additionally, the FCC's prescribed retirement patterns are much more accelerated than indicated by recent historical experience. He concluded that the FCC's prescribed lives and retirement patterns as set forth in the FCC's most recent prescription of BellSouth-Georgia's depreciation rates are forward-looking, and recommended their use in this proceeding (Majoros Direct at 8-9.)

The Staff recommended that for purposes of the assumptions contained in the cost studies in this proceeding, the Commission use the plant lives and depreciation rates as prescribed by the FCC for BellSouth's operations in Georgia. The Staff stated that these should be appropriate for the cost study methodology and model assumptions, unless and until such time as the FCC enters into any new rulemaking on the matter. The FCC is fully aware of the increasingly competitive telecommunications marketplace, as evidenced by the FCC's First Report and Order in the interconnection docket (CC Docket 96-98) dated August 1996, which followed lengthy proceedings. Certainly the 1996 Act, which was enacted in early 1996, was preceded by lengthy Congressional proceedings and much public discussion which included the FCC. Therefore the depreciation rates developed by the FCC for its 1995 proceedings included consideration of the increasingly competitive market. In addition, the FCC's orders and the evidence presented in this case show that the FCC-prescribed lives and rates are forward-looking and are reasonable for use in the cost studies in this proceeding. The Staff's recommendation has the effect of reducing BellSouth's proposed 2-wire analog loop recurring (monthly) rate by \$0.94.

¹³ *Report on Telephone Industry Depreciation, Tax and Capital Expense Policy, Accounting and Audits Division, FCC* (April 15, 1987) ("AAD Report") at 8.

¹⁴ *In re Simplification of the Depreciation Prescription Process, CC Docket No. 92-296* ("Prescription Simplification" proceeding), Third Report and Order (Order 95-181, May 4, 1995) at 6.

Discussion

For purposes of the assumptions contained in the cost studies in this proceeding, the Commission will use the plant lives and depreciation rates as prescribed by the FCC for BellSouth's operations in Georgia. These are appropriate for the cost study methodology and model assumptions, unless and until such time as the FCC enters into any new rulemaking on the matter. The FCC is fully aware of the increasingly competitive telecommunications marketplace, as evidenced by many FCC orders in recent years including the FCC's First Report and Order in the local competition docket (CC Docket 96-98) dated August 1996, which followed lengthy proceedings. Certainly the 1996 Act, which was enacted in early 1996, was preceded by lengthy Congressional proceedings and much public discussion which included the FCC. Therefore the depreciation rates developed by the FCC for its 1995 proceedings included consideration of the increasingly competitive market. In addition, the FCC's orders and the evidence presented in this case show that the FCC-prescribed lives and rates are forward-looking and are reasonable for use in the cost studies in this proceeding. This adjustment has the effect of reducing BellSouth's proposed 2-wire analog loop recurring (monthly) rate by \$0.94.

While BellSouth is correct that the Georgia Act at O.C.G.A. § 46-5-169(8) provides that a company electing alternative regulation (such as BellSouth) "shall not be required to seek regulatory approval of its depreciation rates or schedules," the Georgia Act does provide at O.C.G.A. § 46-5-168(b)(9) that the Commission has the authority to "[e]stablish reasonable rules and methodologies for performing cost allocations among the services provided by a telecommunications company." The very purpose of this docket is not to direct BellSouth what depreciation rates to use for pricing its retail business, but instead to establish the appropriate cost methodologies to be incorporated in the cost models to set unbundled network costs. Therefore O.C.G.A. § 46-5-168(b)(9) is the appropriate statutory reference under the Georgia Act.

Moreover, the statutory purpose in the Georgia Act for BellSouth not requiring this Commission's approval for depreciation schedules is to permit BellSouth the pricing flexibility afforded by alternative regulation under the Georgia Act for retail services. Alternative regulation, which BellSouth elected in July 1995, provides price caps for basic local services (residential and single-line business) and pricing flexibility for other local services. The Commission no longer has direct rate regulatory authority over those rates and therefore need not issue directives to BellSouth to specify the associated depreciation rates. However, the Georgia Act vests the Commission with new authority to require BellSouth to provide interconnection and unbundling, and if necessary (as in this proceeding) to determine the reasonable rates, terms and conditions. O.C.G.A. § 46-5-164(a), (c), (d) and (g). As a part of this process, the Commission must determine a reasonable cost methodology. Therefore this case does not involve BellSouth obtaining regulatory approval of its depreciation rates or schedules, but does require reasonable assumptions about the depreciation expenses to be included in the cost studies used for setting the rates subject to the Georgia Act and the 1996 Act.

Further, this proceeding is primarily conducted under Sections 251 and 252 of the federal 1996 Act. That Act and the FCC's implementing decision placed the authority and responsibility for selecting the depreciation lives to be used for cost-based rates under Sections 251 and 252 with this Commission.¹⁵

3. Fill Factors

Feeder and distribution cable fill factors are designed to recover BellSouth's investments in spare feeder and distribution facilities. BellSouth stated that utilization rates and fill factors mean the same thing. With respect to a facility that can support multiple users, these terms refer to the percentage of the facility's total capacity that is being used. The utilization rates and fill factors are important in cost studies because the cost of a facility is divided among the users. The fewer the users, the higher the cost per user. Therefore a higher utilization rate yields a lower cost per user, while a lower utilization rate yields a higher cost per user.

BellSouth contended that it complied with the FCC's directive in Paragraph 683 of FCC Order 96-325 that cost studies be based on "a reasonable projection of actual total usage." BellSouth based its calculations on an average utilization level for materials and equipment required in provisioning UNEs. (BellSouth Brief at 46, citing Caldwell, Tr. 37, 468-473.) BellSouth criticized intervenors for ignoring the projected actual usage and basing their studies on fill at relief levels. Fill at relief levels are the points at which, for engineering planning purposes, that a facility is so full that the company will install another facility. For example, if the fill at relief for a 1000-user switch is 78 percent, a company will plan to install an additional switch when the switch has 780 or more users. BellSouth argued that the fill at relief figures do not represent expected actual usage and should therefore be rejected. (BellSouth Brief at 47.)

BellSouth accounted for such costs in its studies by calculating the direct investment required to provide the feeder and distribution portions of the loop and then increasing the feeder and distribution investments to account for spare, by dividing the calculated direct investment by a utilization factor. For distribution cable, BellSouth used a factor of 43 percent. The 43 percent factor added an additional \$1.33 to each directly identified \$1.00 of distribution cable investment to account for spare, unused investment. The resulting investment used to compute costs was thus equal to 233 percent of directly identified investment.

AT&T described fill factors as multipliers which increase the investment in transmission facilities that are in use in order to take into account the fact that some spare capacity is needed in those facilities for administrative and maintenance purposes. Spare capacity also results from unavoidable mismatches between demand and available equipment sizes. The greater the spare capacity, the higher the cost. AT&T argued that BellSouth's fill factors are not forward-looking, are not consistent with the principle of cost causation, and would permit BellSouth to overcharge in

¹⁵ See FCC First Report and Order, ¶ 29.

significant amounts. (AT&T Proposed Order at 22, citing Wood, Supplemental/Rebuttal at 84-85) AT&T charged that BellSouth provided no support to suggest that its use of unadjusted, historical fill factors represents the same factors an efficient competitor would compute on a going-forward basis. (AT&T Proposed Order at 22, citing Caldwell/Zarakas, Tr. 570.)

As AT&T described it, BellSouth admitted that it uses fill factors reflecting spare capacity for future customers unrelated to the UNEs bearing these costs. (AT&T Proposed Order at 23, citing Caldwell, Tr. 574-75.) Therefore BellSouth's fill factors assume that CLECs purchasing loops to serve existing customers will pay the entire costs of this growth capacity indirectly through the fill factor, and will also pay BellSouth a second time (directly) when the CLECs utilize any of the excess capacity. AT&T charged that this would impair the CLECs' ability to compete on a level playing field, and would result in over recovery from Georgia consumers. (AT&T Proposed Order at 23.)

AT&T witness Ellison criticized BellSouth's utilization factors, including feeder and distribution fill factors. Mr. Ellison testified that reasonable utilization factors are appropriate in order to recover BellSouth's administrative spare and lumpy investment requirements, but that BellSouth derived its utilization factors from inappropriate historical data reflecting not only spare requirements for current capacity but spare placed to meet future service demands. Mr. Ellison joined AT&T witnesses Wood and Dr. Cabe in arguing that this type of factor is inappropriate. Mr. Ellison stated that the extra costs associated with not-yet-used spare capacity should be the responsibility of future demand, not imposed on current demand. He advocated that the Commission require BellSouth to calculate utilization using one of two options: (1) to size a reconstructed network to meet only current demand and then divide by current demand, or (2) to determine unit prices that take the eventual higher demand into account. (Ellison Supplemental-Rebuttal at 36-38.)

AT&T/MCI witness Carter also criticized BellSouth's fill factors for digital loop carrier ("DLC") and multiplexer ("MUX") equipment. He presented a calculation of 79 percent compared to BellSouth's 64.6 percent and 53 percent for DLC and MUX. (Carter Rebuttal at 22-24.) Mr. Carter asserted that based on a 9.3 year life, an annual growth rate of 3 percent and 90 percent fill at relief, the average fill over the life of the DLC housing, hardware and common plug-ins would be 79.4 percent. Alternatively, based on sizing for 10 years' demand, an annual growth rate of 3 percent and 90 percent fill at relief, the average fill over the 10-year period for the DLC housing, hardware and common plug-ins would be 79.1 percent. These are substantially higher factors than BellSouth's 64.6 and 53 percent used in BellSouth's TELRIC cost study. (Carter Rebuttal at 24.)

MCI stated that the Hatfield Model correctly matched current demand and the size of the network facilities necessary to serve the current demand. According to MCI, where the fill rates result from a comparison of current working lines with total lines placed to serve current demand, an acceptable fill factor results. Similar, a sound fill factor would result from a comparison of a projection of future working lines to total lines placed to serve current and future demand. In both cases, MCI stated, the Commission would be making an apples-to-apples comparison. (MCI Brief & Proposed Order at 13.) The fill factor developed by the engineering team for the Hatfield Model

included some limited amount of spare for growth, so MCI argued that its default fill factor should be considered to represent the low end of an acceptable range, and consequently the cost calculated using these factors should be considered conservatively high. (MCI Brief & Proposed Order at 13, citing Wood, Tr. 1331-1332.)

MCI similarly criticized BellSouth's proposed fill factors as being too low. MCI cited the testimony of AT&T/MCI witness Carter who stated that utilization excluding anticipated growth, or "fill at relief," is the appropriate fill factor for TELRIC calculations. Mr. Carter recommended a "fill at relief" for copper feeder of 90 to 95 percent for assigned copper feeder pairs and 85 to 90 percent based on working pairs. (MCI Brief at 31, citing Tr. 2024.) Further, according to MCI, BellSouth acknowledged that 85 to 90 percent is the appropriate "fill at relief" for copper cables. (MCI Brief at 31, citing Tr. 2035 and BellSouth's response to Staff's Third Set of Data Requests, Item No. STF-3-11.)

WorldCom also contended that the fill factors in BellSouth's study were too low, and stated that principles of efficient network design call for setting the fill factors to provide only as much spare capacity as is needed "to accommodate expected line growth and replace facilities that malfunction (*i.e.*, breakage) over the relevant planning period." (WorldCom Brief at 10, citing Porter Testimony at 13-14; FCC First Report and Order at ¶ 677.) WorldCom endorsed Mr. Porter's testimony that a proper forward-looking fill for copper feeder cable would be 85 percent, and for fiber optic feeder cable, 90 percent. (WorldCom Brief at 11-12, citing Porter Testimony at 15.) Based on Mr. Porter's criticisms of BellSouth's 53 percent fill factor for "plug in" channel units, WorldCom recommended a fill factor for this item of 95 percent to encourage BellSouth to manage channel units in the most cost-effective manner. For DLC cabinets, where BellSouth used a 74 percent fill factor, WorldCom asked the Commission to use Mr. Porter's recommended 90 percent fill factor. (WorldCom Brief at 12-13.)

The Staff recommended moderate increases to the fill factors that BellSouth proposed in its cost study. The Staff recommended increases of 5 percent for both copper feeder and copper distribution, compared to BellSouth's figures. The basis for the Staff's recommendation was that allowing BellSouth's fill factors would result in charging the CLECs too much for the unused capacity in the feeder and distribution cable, which represents inappropriate cost causation and also would have an inhibiting effect on competition. There is evidence that BellSouth's access line growth during 1996 was approximately 1,000,000 in its nine-state region, or roughly 250,000 in Georgia. Such growth indicates that BellSouth's proposed fill factors were somewhat understated. Therefore the Staff recommended 69.5 percent for copper feeder, and 48 percent for copper distribution, while keeping BellSouth's 74 percent for fiber feeder. The effect of the Staff's adjustment on the 2-wire analog loop recurring (monthly) rate was to reduce BellSouth's proposed rate by \$0.99.

Discussion

The Commission finds that the parties raised valid concerns that BellSouth's proposed fill factors should be adjusted. To illustrate by way of example, under BellSouth's method, if BellSouth installs a cable costing \$100 per month that is intended to serve a current demand of 10 people and a projected future demand of 40 people (50 pairs total), the cost of the cable per pair per intended customer is \$2 per month. BellSouth's method would allocate the entire cost of the cable only to the current customers, resulting in charges of \$10 per month. Although the \$10 per month charge allows recovery of the entire cost of the cable, it also would erect significant barriers to entry by requiring CLECs to purchase UNEs at inflated prices. Every additional pair sold to CLECs would then permit BellSouth to over recover an additional \$10 per month above the cable costs; and BellSouth may also use some of the additional pairs to provide services to its own retail customers. CLECs would be forced to pay for plant they do not use, while BellSouth could over recover or could drop its retail price to its own customers below the cost being charged to the CLECs.

The Commission finds that the Staff's recommended increases to BellSouth's fill factors are moderate and reasonable. These increases are 5 percent for both copper feeder and copper distribution, compared to BellSouth's figures. The Commission agrees that allowing BellSouth's fill factors to remain would result in charging the CLECs too much for the unused capacity in the feeder and distribution cable. This represents inappropriate cost causation and would have an inhibiting effect on competition. Therefore the Commission adopts the Staff recommendation of 69.5 percent for copper feeder, 48 percent for copper distribution, and BellSouth's 74 percent for fiber feeder. The effect of this adjustment on the 2-wire analog loop recurring (monthly) rate is to reduce BellSouth's proposed rate by \$0.99.

4. Loop Sample

The lengths of the loops, and their types of construction, are major cost drivers. BellSouth used a sample of 400 loops to characterize the composite physical characteristics of all its Georgia loops. The sampled loop characteristics included loop length, typical cable sheath sizes and proportions, structure mix requirements, bridged tap requirement, and feeder/distribution interface location. BellSouth witnesses Caldwell and Zarakas testified to BellSouth's process which indicates the significance of the loop sample in the cost study. (Zarakas and Caldwell Panel at 8-9, 11-12.) BellSouth's Loop Model stores the specific characteristics of an average loop in Georgia, as well as a weighted vendor price table for components in the loop. This model was used to develop the material costs for narrowband loop and loop-related UNEs. (Zarakas and Caldwell Panel at 17.)

BellSouth witness Smith testified regarding the development of the loop sample. (Smith Direct at 4-10.) However, he admitted under cross-examination that although he included all types of loops in collecting his initial sample data, BellSouth omitted several types of loops from the sample it subsequently used for its cost study. The omitted loops included ESSX lines which tend to be substantially shorter than single-line business loops.

The CUC pointed out that the PBX and ESSX loops omitted from BellSouth's sample are among the shortest loops in the full panoply of loop types, and that it is logical to assume that the omitted categories of loops are more like the business stratum of loops retained in the study rather than the residential stratum. Business loops in general tend to be shorter than residential loops. Therefore, the recurring costs for the omitted types of loops should be less than the costs for loops retained in the loop studies. In addition, removing certain categories of loops from the sample indicated that BellSouth assumed CLECs will not use each type of loop in the same proportions used by BellSouth, but this assumption is unsupported. The loop omissions subject BellSouth's study to non-random bias, undermining its statistical support. (CUC Brief at 12-13.)

WorldCom witness Porter criticized BellSouth's loop sample. He stated that this 1995 loop survey predated the Commission's decision not to rely on class of service distinctions. Loops are no longer classified by business versus residential use; one may say that "a loop is a loop" without regard to its use. Therefore, the survey skews "average" loop length because BellSouth designed it for use with a cost study that emphasized class of service distinctions. (Porter Rebuttal at 11.) Mr. Porter concluded that BellSouth did not conduct the survey with an eye toward assessing the average loop length for the kinds of short, digital loops (*e.e.*, ISDN, ADSL, and HDSL) that CLECs will seek. He explained that the loop sample should have included Centrex, coin, PBX, and special access loops, many of which are among the shorter loops in BellSouth's network. (Porter Rebuttal at 12.)

ACSI witness Kahn also pointed out that BellSouth's loop model based its calculations on an incomplete loop sample. Often customers taking multi-line services such as PBX trunks and ESSX tend to be located in office buildings or in downtown locations where, on average, there is greater loop density and loops are shorter. (Kahn Rebuttal at 54-55.) Dr. Kahn recommend that the loop sample be broadened to include both PBX trunks and ESSX lines. He estimated that these loops average between 15 to 20 percent shorter than loops provided for single-line services. Including such loops in the sample would provide a set of costs more representative of the entire body of loops provisioned by BellSouth in Georgia and available on an unbundled basis to the CLECs. (Kahn Rebuttal at 58-59.)

AT&T witnesses Ellison, Carter, Heikes, and Wells criticized BellSouth's loop sample, arguing that it does not support geographically deaveraged rates, is not statistically valid, improperly adjusted the loop characteristics to be forward-looking, contains "phantom costs" for digital to analog conversion equipment, and only sampled 2-wire loops but is used to calculate costs for 4-wire, ISDN, HDSL, ADSL, and 56/64 KBPS loops. (*E.g.* Ellison Supplemental-Rebuttal at 28-31.) This proceeding is to establish a price for all BellSouth's Georgia loops, and in order to compile a valid representative sample of the costs of all Georgia loops, the sample must be drawn randomly from the entire population of BellSouth's loops in Georgia. (Heikes, Tr. 1836-37.)

BellSouth's loop sample was drawn from a universe that excluded approximately 20 percent of its loops. Almost one-half of the excluded loops consisted of ESSX and MultiServ loops. The remaining excluded loops consisted of various business service loops, primarily business trunks.

BellSouth actually drew loop samples for residence loops, single-line business loops, business trunks, public stations, semi-public stations, COCOT lines, toll terminals, ESSX stations, and alarm circuits. Omitting so many of these types of loops for the cost study contributed to overstating BellSouth's loop costs. (Ellison Supplemental-Rebuttal at 32-36.)

The Staff agreed that BellSouth's loop sample was not representative of its customer population. BellSouth should not have excluded ESSX (Centrex, MultiServ), coin, PBX trunks, and special access loops. Therefore the Staff recommended a specific adjustment to correct BellSouth's omission of the shorter multi-line business loops from the loop sample. The appropriate adjustment was described by Dr. Kahn and can accordingly be developed by mathematical calculation. This adjustment simply adds back into the loop sample the appropriate multi-line loops (ESSX lines and PBX trunks) using BellSouth's data, and recalculates the direct loop cost with this corrected sample. MultiServ refers to the same multi-line service as ESSX, which is an earlier version of such service. For purposes of making the calculation, the Staff found reasonable the testimony of ACSI witness Kahn who stated that the MultiServe (ESSX, PBX) loops average 15 percent shorter than the other business lines such as single-line business. The Staff stated that this is a conservative assumption that would not overstate the impact of the adjustment. Incorporating this assumption, the Staff's adjustment results in reducing BellSouth's 2-wire analog loop recurring (monthly) rate by \$0.25. The Staff's adjustment is mathematically set forth below:

Loop Sample Adjustment		
Default loop direct cost (per BellSouth cost study) = \$15.99		
BellSouth's residential weight	77.96 %	
BellSouth's business weight	22.04 %	
Residence loop cost (assuming residence = 100 % of loops) = \$ 17.27		
Business loop cost (assuming business = 100 % of loops) = \$ 11.05		
* CRIS Data Weightings:		
Residential lines	2,237,610	67.38 %
Business access lines ("small business")	632,422	19.04 %
Business (ESSX, PBX) ("large business")*	450,822	13.58 %
Total lines	3,320,854	100.00 %
Recalculation of loop sample cost:		
Residential line share	(0.7796) (\$ 17.27)	\$ 13.46
Business line share	(0.1287) (\$ 11.05)	\$ 1.42

Business (ESSX, PBX) line share	(0.0917) (0.85) (\$11.05)	\$ 0 86
Total		\$ 15 74
Adjustment: \$ 15.99 minus \$ 15.74 = \$0.25		
* See BellSouth response to Staff's Third Set of Data Requests. Item No. STF-3-5		
** Ratio of business access lines and business ESSX and PBX trunks to the total business weighting (22.04%) contained in BellSouth's cost study.		

Discussion

The Commission agrees that BellSouth's loop sample was not representative of its customer population, because it excluded ESSX (Centrex, MultiServ), coin, PBX trunks, and special access loops. Therefore the Commission adopts the Staff-recommended adjustment to correct the omission of the shorter multi-line business loops from the loop sample, as described above.¹⁶

5. Other Inputs and Assumptions

The parties also disagreed about other user-adjustable inputs and assumptions. These included drop wire length (AT&T Proposed Order at 24; BellSouth Brief at 27-28), structure sharing (BellSouth Brief at 28-29), bridge tap, cable size, and tapering (BellSouth Brief at 29-31), copper/fiber crossover, and loading factors (AT&T Proposed Order at 25, 26), switching issues (AT&T Proposed Order at 26-28), BellSouth Brief at 31-32), and shared and common costs (although the models calculated these allocations, the user could adjust the inputs and assumptions) (MCI Brief & Proposed Order at 16-17; BellSouth Brief at 48-49).

The defects WorldCom asserted in BellSouth's study include its failure to adopt a forward-looking or efficient network design, as well as its use of embedded costs of labor and materials; cost of capital that does not reflect accumulated depreciation; a "gross-up" for statutory federal and state tax rates rather than the effective tax rate BellSouth expects to pay; the application of factors for inflation and the Telephone Plant Index ("TPI") to costs of materials; the copper/fiber breakpoint (copper cable for loops up to 12,000 feet and mostly fiber optic cable with some copper thereafter); and the assumption of universal digital loop carrier ("UDLC") for every loop. (WorldCom Brief at 2, 8, 13-16.)

¹⁶ This adjustment results in reducing BellSouth's 2-wire analog loop recurring (monthly) rate by \$0.25. As discussed previously, this is a stand-alone adjustment.

The Consumers' Utility Counsel stated that they have not been able to identify scientifically valid averaged prices for loops, but that it is intuitively inherent in the evidence presented that those prices should be somewhere between the prices proposed by BellSouth on the one hand, and AT&T, MCI and other intervenors on the other hand. The CUC stated that the most scientific approach is for the Commission's Staff to combine those elements from both parties' studies that are scientifically verifiable and that, when utilized in the models presented, best protect the interests of consumers and assure reasonable cost for universal access to telecommunications services. (CUC Brief at 39.) The Commission recognizes the CUC's concerns and expressed goals, and believes that the approach used in this Order of adopting certain Staff-recommended adjustments is an appropriate one that will result in just, reasonable, and nondiscriminatory cost-based rates.

Therefore, the Commission has decided to adopt those Staff-recommended adjustments that are expressly described in this Order. The decision by the Commission not to adopt other adjustments should not be taken as a conclusive determination that no other adjustments would be meritorious or should be considered in future proceedings. However, the Commission does not choose to adopt such other adjustments at this time.

C. Rates for Unbundled Network Elements

The Commission's initial Procedural and Scheduling Order directed that the appropriate cost study must provide rates for the following:

1. Unbundled network elements (using the definitions stated in the FCC's rules at 47 C.F.R. Section 51.319):
 - (a) local loop
 - (b) network interface device
 - (c) local and tandem switching capability
 - (d) interoffice transmission facilities
 - (e) signaling networks, call-related databases, and service management systems
 - (f) operations support system functions
 - (g) operator services and directory assistance
2. Local call transport, i.e., the transmission and necessary tandem switching of local telecommunications traffic from the interconnection point to the terminating carrier's end office switch or equivalent facility that directly serves the called party.
3. Local call termination, i.e., the switching of local telecommunications traffic at the terminating carrier's end office switch and delivery of such traffic to the called party's premises.
4. Physical collocation and virtual collocation

5. Common costs that cannot be attributed directly to individual elements or services (see FCC rule, 47 C.F.R. Section 51.505).

1. **Rate Design for Switch Features (Vertical Features)**

BellSouth witness Varner sponsored BellSouth's proposed prices for unbundled vertical features. (BellSouth Ex. 2.) BellSouth's proposed price for a 2-wire analog line port without any features was \$2.53, and for a port with vertical features, \$7.07. In recognition of the fact that over 90 percent of customers use only three features or fewer, BellSouth also proposed an option that would allow CLECs to purchase a package port and any three features of their choice for \$5.07. (*Id.*, Varner, Tr. 186.)

MCI criticized BellSouth's proposal. MCI stated that BellSouth used the Switching Cost Information System ("SCIS") model to develop individual and overall costs for only 30 of the more than 1,000 vertical features potentially available, separate and apart from the price of the port. MCI added that, while SCIS may be an appropriate model for developing individual retail source rates and features, it was designed to determine the appropriate price for lease of the capabilities of the switch. In acquiring the ability to offer vertical services, a CLEC is leasing all the features and functions of the switch, including individual vertical services. BellSouth has allocated a "getting started" cost, or a form of fixed up-front overhead, to the traffic-sensitive minute-of-use element for vertical features, which according to MCI clearly violates cost causation principles. MCI explained that these "getting started" costs do not vary with the number of features ordered by a CLEC. Instead, they are driven by the computer processing time necessary to set up the features in the switch. As long as the switch has adequate capacity, there will not be additional investments when a CLEC adds a feature. Therefore, MCI concluded, BellSouth's use of a separate recurring charge for vertical features would be inappropriate and would result in over-recovery for vertical features. (MCI Brief at 32-33.)

AT&T charged that BellSouth vastly overstated costs of vertical features, and made no attempt to prove otherwise. AT&T also argued that BellSouth's switch prices do not reflect the actual discounts BellSouth now experiences and can anticipate in the future in its contracts with switch vendors. (AT&T Proposed Order at 27, citing Petzinger, Rebuttal at 4-5, 12-13.) Further, AT&T argued, BellSouth's cost studies assumed that every digital switch requires additional, expensive equipment to convert an analog signal to a digital signal the switch can use; yet efficient competitors will rely heavily on digital loop technologies that will provide digital, not analog, outputs.

AT&T witnesses Guedel, Ellison, and Petzinger opposed BellSouth's proposal to establish separate or additional charges for the features, functions, and other capabilities of the local switch, in addition to the port and usage component. One criticism was that requiring new entrants to follow a request process each time a new feature is needed would be a significant practical barrier to competition. Mr. Ellison also testified that the Hatfield model includes all of the costs associated with switching features and functions in the cost estimates associated with the port and usage

components of the switch. (Guedel Direct at 17, Ellison Supplemental-Rebuttal at 51-52; Petzinger Supplemental-Rebuttal Testimony.)

AT&T stated that the primary driver of vertical services costs is the cost of the switch processor. The cost of this processor is not traffic sensitive, so AT&T argued it should be included in the non-traffic sensitive cost of the port. In other words, the one-time costs of the processor are not affected by the amount of vertical services usage imposed on the network. AT&T stated that BellSouth's own cost studies confirm this, indicating that on average BellSouth's switch processors are only 44 to 54 percent utilized even at the point at which BellSouth retires those switches. (AT&T Proposed Order at 27-28, citing Petzinger, Rebuttal at 25.) As a consequence, AT&T urged, vertical services should not be assigned separate costs above and beyond the costs of the port.

BellSouth witness Varner opposed the AT&T proposal, arguing that it understates the price of local switching. BellSouth proposed per-element recurring and non-recurring costs for local switching and individual vertical features, and had not proposed a total price for the local switching UNE including vertical features. However, Mr. Varner recognized that the Eighth Circuit decision confirmed requirements of the FCC and this Commission that the local switching element include all offered vertical features. His response was to recommend adding up BellSouth's proposed charges for all the vertical features and adding them to the port charge, yielding a significant increase in the price. Mr. Varner added that "[t]he Court's decision and FCC's Third Order on Reconsideration appear to redefine what BellSouth is obligated to offer under the Act. As a result of these orders, BellSouth is analyzing its obligations under the Act and what additional services it may want to offer in the marketplace." (Varner Rebuttal at 18-20.)

BellSouth criticized the analysis of AT&T witness Petzinger in two respects. First, it contended that Ms. Petzinger's analysis ignored the basic principle of cost causation and the requirement that cost studies should be based on the total output of service. (BellSouth Brief at 33, citing Caldwell, Tr. 479.) Second, it argued that her analysis also ignored the specialized hardware that is required for many features, as well as the need to pay right-to-use fees to the vendor in order to access the features. (BellSouth Brief at 33, citing Caldwell, Tr. 479-480.) BellSouth contended that its Switching Cost Information System (SCIS) model uses capacity cost methodology, and that vertical features use switch capacity and should bear their proportionate share of the costs. (*Id.*)

Low Tech Designs, Inc. ("LTD") argued that BellSouth provides vertical service features to its retail customers on a pay-per-use basis and therefore should be required to provide them to its competitors on such a basis. LTD claimed that BellSouth's approach imposes inappropriate costs on competitors, and asked that BellSouth be required to provide a separate pay-per-use vertical service code feature activation charge that reflects its actual cost of providing vertical services on a pay-per-use basis. (LTD Brief at 1-2.) LTD also suggested that the Commission open a separate docket to explore the cost associated with the Advanced Intelligent Network (AIN) in more detail. (LTD Brief at 3.)

The Staff recommended that switch vertical features should not be priced as individual elements but incorporated within the unbundled switch port element. According to the Staff, this can be viewed as an aspect of UNE rate design. The Staff stated that there are costs associated with the provisioning of vertical features in the switch, as compared with the basic switch functions. Therefore the Staff recommended a two-tiered port charge: the basic UNE charge for the port element with no switch features, and the same charge plus \$6.00 for the port element that includes all features that are actually available in the switch. For purposes of this charge, "all features actually available" means the features that BellSouth currently makes available to its customers through the switch, and features that BellSouth makes available in the future to its customers through the switch.

AT&T argued that using BellSouth's approach, the vertical services costs proposed by BellSouth and those proposed by the Staff, when combined with the port charge and the switch usage charges, dramatically exceed even BellSouth's total embedded switch costs. (AT&T Reply Brief at 14; AT&T Proposed Order at 28.)

Discussion

Section 153(20) of the federal Act defines "network element" as not only the facility or equipment" used in providing telecommunications services, but also the "features, functions, and capabilities that are provided by means of such facility or equipment." The Commission previously decided that there should be no additional, separate charges for switch features in the AT&T-BellSouth arbitration (Docket No. 6801-U). This is also consistent with rulings of the FCC¹⁷ and the recent Eighth Circuit decision. In its regulations upheld by the Eighth Circuit, the FCC defined "local switching capability network element" to include, among other things, "all . . . features that the switch is capable of providing, including but not limited to custom calling [and] custom local area signaling service features." 47 C.F.R. § 51.319(c)(1)(i)(C)(2); see FCC First Report and Order, ¶ 413. The FCC stated that when a CLEC purchases the local switching element at the cost-based rate set by this Commission, it is entitled to receive the vertical features of the switch as part of that cost. FCC First Report and Order, ¶¶ 412, 816.

The Commission affirms that switch vertical features should not be priced separately as individual elements, but should instead be incorporated within the unbundled switch port element. However, the Commission has concern about adopting the Staff's proposal of a two-tiered port charge with \$6.00 being added for the inclusion of all switch features with the port element. The basic port (switch) element rate as recommended by the Staff is \$1.85, and it is not clear that raising it by \$6.00 tracks with particularity any extra costs that may be associated with the inclusion of vertical features. In addition, the Commission does not adopt a pay-per-use charge for vertical service code feature activation. The Commission also does not adopt the request for a separate docket regarding AIN costs. The port (switch) element rate shall remain at the \$1.85 level and the

¹⁷ FCC's First Report and Order, CC Docket No. 96-98 (August 8, 1996), ¶ 423.

Commission will not adopt additional, separate charges for any vertical features that CLECs choose to order with or as a part of this port (switch) element.

2. Geographic Deaveraging

The parties disputed whether and how UNE rates should be geographically deaveraged. BellSouth witness Varner testified to BellSouth's belief that deaveraging of UNE prices, specifically for unbundled loops, would necessitate dramatic rebalancing of retail prices. He stated that deaveraging the loop prices without simultaneous rebalancing of retail local exchange service rates would make it difficult, if not impossible, for BellSouth to compete with CLECs providing service using BellSouth's loops. The deaveraged loop price would be lowest in Atlanta where local exchange prices are the highest. Conversely, the loops in rural Georgia would be the highest priced, where local exchange rates are the lowest. Mr. Varner added that a universal service plan is a necessary but insufficient means to remedy this problem, because rate rebalancing would still be required even with an appropriately designed universal service fund. He suggested that the CLECs' request for deaveraging of UNE prices without retail rate rebalancing is a ploy to arbitrage BellSouth's price structure, to the ultimate detriment of consumers. Mr. Varner concluded that until such time as an appropriate universal service plan and rebalancing of retail rates are accomplished that correct for the UNE/retail pricing anomaly, the Commission should not implement deaveraged loop rates. (Varner Rebuttal at 13-14.)

Although BellSouth does not support deaveraging for loop prices at this time, BellSouth did submit deaveraged loop prices calculated by the use of the Benchmark Cost Proxy Model ("BCPM"). BellSouth did not submit the BCPM itself in this case, but merely the results showing loop costs categorized into three "zones" based on its retail rate groups: for Zone A, \$16.81 (Rate Group 12); for Zone B, \$18.57 (Rate Group 7), and for Zone C, \$33.87 (Rate Groups 2 and 5). When BellSouth submitted its revised cost study, again using the BCPM for calculation purposes only, BellSouth showed deaveraged costs of \$15.99 for Zone A (Rate Group 12), \$17.66 for Zone B (Rate Group 7), and \$32.22 for Zone C (Rate Groups 2 and 5). As BellSouth noted, the residential basic exchange rate in urban areas (Zone A) is more than 44 percent higher than the same rate in rural areas (Zone C). The business basic exchange rate in urban areas is more than twice that rate in rural areas. Conversely, the deaveraged 2-wire loop cost computed by BellSouth for urban areas would be about 50 percent lower than the loop cost in rural areas. This underscores BellSouth's contention that deaveraging would necessitate rate rebalancing, at least in the absence of universal service support.

BellSouth witness Varner testified regarding BellSouth's Supplemental Response to Staff's First Set of Data Requests, Item 1-9 (CUC Ex. 1), regarding the limitations of BellSouth's models when considering universal service purposes and deaveraging. BellSouth stated that its Loop Model is not appropriate for universal service purposes because (1) the model only produces statewide average costs, as opposed to costs disaggregated by small areas; (2) the FCC has indicated it will consider only the Hatfield Model and the BCPM for universal service purposes; (3) it is inappropriate to add UNE costs together and conclude that the sum represents universal service costs, because

UNE costs are wholesale costs while universal service costs are retail, and (4) UNE costs are specific to a given company, while universal service costs represent the cost of any efficient provider in a given area.

The Consumers' Utility Counsel noted that although several of the CLEC's witnesses cited the FCC decision in the Ameritech case¹⁸ as mandating deaveraging, none cited the Eighth Circuit's decision in the *Iowa Utilities Board* decision with respect to that issue. The Eighth Circuit's July 18, 1997 decision voided the FCC's rule requiring at least three (3) geographically deaveraged zones in each state for the purpose of pricing UNEs. (CUC Brief at 19.) The CUC strongly urged the Commission not to deaverage loop prices until or unless there is a commitment to and implementation of an adequate system for high cost assistance. (CUC Brief at 19-21, 22-26.)

AT&T witness Ellison argued that state averaged loop prices would advantage BellSouth by allowing it to charge loop rates greatly in excess of its costs in the more densely populated urban and suburban areas. He argued that these "excessive rates" would effectively establish a price floor for BellSouth's competitors significantly above its costs. According to Mr. Ellison, BellSouth could then game this price floor to realize monopoly profits, engage in a price squeeze, or both. He asserted that BellSouth's arguments (by witness Scheye) for delaying deaveraging until local rates are rebalanced are misleading, and that the greatest initial harm from averaged rates would fall to residential and small business customers. Mr. Ellison stated that any imbalances that are identified can be dealt with in universal service reform proceedings by rate rebalancing, targeted explicit subsidies, or a combination of both. (Ellison Supplemental-Rebuttal at 24, 49-50.)

AT&T proposed that loop rates be geographically deaveraged according to loop density and distance patterns (distance from the local switch), at the wire center level. AT&T did not propose geographically deaveraged rates for other elements at this time because the cost information is not yet sufficiently disaggregated to support additional geographic deaveraging. AT&T witness Ellison testified that deaveraging at the wire center level would be a more practical alternative to deaveraging at the Census Block Group ("CBG") level, although he recommended that the Commission also institute proceedings to determine the feasibility of moving to CBG-specific pricing at a future date. (Ellison Supplemental-Rebuttal at 47-50.)

WorldCom argued that federal law requires deaveraged loop rates, on the basis of Section 252(d)(1) calling for pricing "based on the cost," and Section 254(f) pertaining to universal service mechanisms. With respect to the latter, WorldCom argued that the replacement of implicit with explicit subsidies requires the Commission not to geographically average loop rates that provide subsidies from the sale of service in urban areas to rural areas. (WorldCom Brief at 17-18.) WorldCom added that deaveraging loop rates is sound public policy, because otherwise BellSouth

¹⁸ *In the Matter of Application of Ameritech Michigan Pursuant to Section 271 of the Communications Act of 1934, as Amended, to Provide In-Region, InterLATA Services in Michigan*, Memorandum Opinion and Order No. 97-298 (released 8/19/97).

would enjoy a competitive advantage over new entrants and also receive additional profits from selling below-average-cost loops at average prices to its competitors. WorldCom challenged BellSouth's arguments against deaveraging, stating that the 1996 Act does not support BellSouth's attempt to link deaveraging to some potential future proceeding on retail rate rebalancing. (WorldCom Brief at 18-20.)

The Staff recommended that the Commission not require geographic deaveraging of the rates set in this proceeding. The Staff agreed that geographic deaveraging should not precede the development and implementation of specific, predictable universal service support mechanisms. The Staff stated that geographic deaveraging at this time would be premature, would hurt customers in rural areas, and would stymie competition (especially facilities-based competition) in rural areas.

The Staff recommended that the Commission not require geographic deaveraging of the rates set in this proceeding. The Staff stated that geographic deaveraging should not precede the development and implementation of specific, predictable universal service support mechanisms. Such mechanisms are being developed for intrastate purposes in Docket No. 5825-U with respect to the Universal Access Fund under the Georgia Act, and for interstate purposes by the FCC pursuant to Section 254 of the 1996 Act. However, neither of these proceedings is close to the final development and implementation of universal service support mechanisms.

Discussion

The Commission will not require geographic deaveraging of the rates set in this proceeding. The Commission agrees that geographic deaveraging should not precede the development and implementation of specific, predictable universal service support mechanisms. Such mechanisms are being developed for intrastate purposes in Docket No. 5825-U with respect to the Universal Access Fund under the Georgia Act, and for interstate purposes by the FCC pursuant to Section 254 of the 1996 Act. Neither of these proceedings is close to the final development and implementation of universal service support mechanisms. The Commission concludes that it would be premature, would hurt customers in rural areas, and would stymie competition (especially facilities-based competition) in rural areas, to geographically deaverage the UNE rates at this time.

The CUC is correct that the Eighth Circuit vacated the FCC's rule that would have required deaveraging of UNEs. Further, the Eighth Circuit has ruled subsequent to the FCC's Ameritech decision that the FCC may not attempt to impose pricing rules contrary to the Court's July 18, 1997 decision, so this further supports this Commission's determination that UNE prices should not be geographically deaveraged at this time.

3. Rates for Interim Number Portability

Although interim number portability was not specifically identified in the Commission's initial Procedural and Scheduling Order, and is the subject of a separate Commission docket (No. 5840-U),