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, hardwire 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 p rice 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 FCC[17] 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, E18.57 (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 case[18] 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

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[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),

there was some dispute among parties regarding the appropriate rates for interim number portability. AT&T proposed that there be no charge imposed by either BellSouth or new entrants for interim number portability. According to AT&T witness Ellison, having no charge would be consistent with the FCC's First Report and Order and Further Notice of Proposed Rulemaking in CC Docket No. 95-116 (released July 2, 1996), while BellSouth's proposal to charge the full costs on interim number portability to new entrants does not meet the FCC's requirements. (Ellison Supplemental-Rebuttal at 54.) Mr. Ellison cited the FCC's July 2, 1996 Order at paragraph 138 as follows:

> [R]equiring the new entrants to bear all of the costs, measured on the basis of incremental costs of currently available number portability methods, would not comply with the statutory requirements of section 251(e)(2). Imposing the full incremental cost of number portability solely on new entrants would contravene the statutory mandate that all carriers share the cost of number portability.

(Ellison Supplemental-Rebuttal at 54-55.) Mr. Ellison added that the FCC established two criteria for competitive neutrality in cost recovery for number portability (at paragraphs 132 and 135 of the FCC's July 2, 1996 Order): (1) preventing one service provider from obtaining an appreciable, incremental cost advantage over another service provider; and (2) preventing a disparate effect on the ability of competing service providers to earn normal returns on their investment. He recommended that this Commission adopt the third of three alternatives suggested by the FCC. The suggested mechanisms included:

(1) a distribution of costs based upon total working telephone numbers in an area;
(2) a distribution of costs based upon total revenues minus carrier-to-carrier revenues; and
(3) a mechanism that requires each carrier to pay for its own costs of currently available number portability measures.

To support adoption of the third suggestion, Mr. Ellison stated that the action only affects interim number portability (which will become obsolete within the next 12 to 18 months); the capability of providing interim number portability currently exists in the switching equipment of both the incumbent LECs and the new entrants (no additional investment should be required); and it is unlikely that significant revenues will be affected since demand for this service should grow slowly. (Ellison Supplemental-Rebuttal at 55-56.)

However, as a fallback position in the event the Commission prefers a mechanism requiring monetary payments, Mr. Ellison recommended a mechanism adopted by the New York commission (the Department of Public Service) for the New York metropolitan area: add switching plus transport costs, multiply by total ported minutes, and then divide by the total working telephone numbers provided by NYNEX. The charge per working telephone number times the number of ported

telephone numbers used by the new entrant would equal the charge per new entrant. The new entrant would charge the incumbent the same rate for similarly ported numbers. (Ellison Supplemental-Rebuttal at 56-57.)

The Staff recommended that the rate for interim number portability be that which resulted from the cost calculations produced by the BellSouth TELRIC model as adjusted for the Staff's recommendations.

Discussion

The Commission adopts the Staff's recommendation that the rate for interim number portability be that which results from the cost calculations produced by BellSouth's cost model, with the adjustments adopted by the Commission as discussed elsewhere in this Order. This produces a reasonable, cost-based rate for this proceeding.

4. Rates for Recombined Loop and Port UNEs

Some of the parties including AT&T and MCI renewed their request that the Commission allow UNE pricing when a CLEC requests the loop and port UNEs in order to provide a service that replicates BellSouth retail service, without adding any functions or capabilities of the CLEC's own (other than operator services). AT&T witness Ellison asked the Commission to eliminate its current restrictions regarding purchase of network element combinations. He argued that these restrictions greatly limit the scope of competition by effectively limiting competitive alternatives for most customers to resale, eliminate competition for the major elements of access service, eliminate effective regulation of BellSouth's prices and earnings, and ultimately greatly harm the consumer. (Ellison Supplemental-Rebuttal at 4-5, 6-16, 60-61.)

BellSouth witness Varner disagreed with the proposal by AT&T and MCI for a "UNE Platform" that would combine or recombine UNEs as an alternative to resale. BellSouth does not offer the "UNE Platform." Mr. Varner stated his view that the Eighth Circuit's July 1997 decision allowed CLECs to combine unbundled elements, but also made it clear that the ILEC is not required to do the combining. (Varner Rebuttal at 22.)

BellSouth charged that the intervenors' assumption that BellSouth will provide CLECs with a combined loop and port is legally flawed, ignoring this Commission's previous rulings on recombination as well as the Eighth Circuit's decision on the issue. BellSouth noted that this Commission has repeatedly held that if a CLEC combines unbundled network elements to create services identical to BellSouth's retail offerings, without adding any of its own functions or capabilities, the CLEC must pay the retail price less the applicable wholesale discount. In addition, BellSouth referred to the Eighth Circuit's decision in *Iowa Utilities Board v. FCC*, 120 F.2d at 813, to the effect that the incumbent is not obligated under the 1996 Act to combine network elements for

the CLECs. BellSouth also objected to the intervenors' raising the recombination issue in this proceeding. (BellSouth Brief at 17-21.)

AT&T also attempted to raise new arguments that BellSouth's cost studies seek to force CLECs to undertake recombination of the UNEs on BellSouth's terms under the "most inefficient conditions imaginable." (AT&T Proposed Order at 16.) AT&T cited the example of BellSouth insisting that all loops must undergo expensive conversion from a digital signal to an analog signal when no CLEC will require such conversion. Further, argued AT&T, BellSouth's proposal would require that CLECs erect buildings or purchase collocated space each time they want to recombine UNEs, when the nonrecurring costs related to collocation alone could represent many thousands of dollars. AT&T also expressed concern that BellSouth's definition of the network elements effectively limits the choices CLECs have regarding the efficient recombination of these elements. (AT&T Proposed Order at 16-18.)

The Consumers' Utility Counsel took no position on the merits of whether "rebundling" or the combination of UNEs should be leased at UNE prices or treated as resale, other than to observe that the Commission should conform with the Eighth Circuit's rulings on the issue. (CUC Brief at 29-31.)

The Staff recommended that the Commission affirm its previous decision in the arbitration dockets on this issue. AT&T, MCI, and Sprint raised this same argument to the Commission in those proceedings, and the Commission ruled against them that the recombination of BellSouth UNEs in a manner that replicates BellSouth's services, without adding any CLEC functions or capabilities (other than operator services), should be treated as resale.

Discussion

The Commission affirms its decision in the arbitration dockets on this issue (AT&T-BellSouth, Docket No. 6801-U; MCI-BellSouth, Docket No. 6865-U; Sprint-BellSouth, Docket No. 6958-U). The Commission's most recent discussion of this issue occurred following the Eight Circuit decision and was recorded in the Sprint-BellSouth arbitration docket as follows:

> The Commission reaffirms its previous decision in the AT&T-BellSouth arbitration, Docket No. 6801-U, that establishing different pricing methodologies for resold services and for UNEs is consistent with the Act, the FCC's valid regulations, and the intent of Congress in adopting the Act. The Commission's decision was not to deny recombined or rebundled UNEs to CLECs, but merely to adopt appropriate pricing and related terms and conditions when recombined UNEs are essentially resale because they replicate the incumbent LEC's retail services without adding any CLEC functions or capabilities (other than operator services).

> Congress provided different pricing mechanisms for the two distinct ways to enter local markets -- through resale, or through the CLEC's own facilities which can also combine with the incumbent LEC's unbundled network elements. When the new entrant provides its customers with service identical to BellSouth's services by using only BellSouth's network elements, it is essentially reselling BellSouth's services. For such a situation, Congress directed that the reseller pay BellSouth's retail rates minus a wholesale discount based on the costs BellSouth can avoid as a result of selling to the reseller. 47 U.S.C. § 252(d)(3).
>
> The Commission also reaffirms its corollary decision in the Order Ruling on Arbitration in GPSC Docket No. 6801-U that it shall conduct a generic proceeding to develop appropriate long-term pricing policies regarding recombination of unbundled network elements.
>
> Following the Commission's decision at the July 15, 1997 Administrative Session to approve the arbitrated agreement as filed, over Sprint's objections, the Eighth Circuit Court of Appeals issued its decision in *Iowa Utilities Board, et al. v. FCC*, No. 96-3321 (8th Cir., July 18, 1997). The Court vacated the FCC's pricing rules primarily on the ground that pricing authority for resale and UNEs is delegated to the states, not the FCC. The Court also stated that the incumbent LEC should not be required to perform the function of rebundling UNEs. This implies that if the incumbent LEC does perform the rebundling function for the CLEC, the price to the CLEC may be different from the mere total of the underlying UNE prices. The Commission concludes that the Eighth Circuit's decision does not preclude, and is consistent with the previous arbitration decisions affirmed in this Order.

Order Approving Arbitration Interconnection Agreement, Docket No. 6958-U (August 7, 1997), at 10-11. Moreover, the Eighth Circuit issued its Order on Petitions for Rehearing on October 14, 1997 affirming that ILECs have no duty to provide unbundled network elements on a rebundled or recombined basis to new entrants, and vacating FCC Rule § 51-315(b-f) on this point. The Court stated:

> [Section] 251(c)(3) does not permit a new entrant to purchase the incumbent LEC's assembled platform(s) of combined network elements (or any lesser existing combination of two or more elements) in order to offer competitive telecommunications services. To permit such an acquisition of already combined elements at cost based rates for unbundled access would obliterate the careful distinctions Congress has drawn in subsections 251(c)(3) and (4) between access to unbundled network elements on the one hand and the purchase at wholesale rates of an incumbent's telecommunications retail services for resale on the other.

In light of the rulings by the Eighth Circuit Court of Appeals, this Commission adopts no change in its previously stated policy on this issue.

Indeed, the Commission notes that this proceeding is not, and was not intended to be the "generic proceeding" to develop appropriate long-term pricing policies regarding recombination of unbundled capabilities that was envisioned in the Commission's December 4, 1996 Order Ruling on Arbitration in Docket No. 6801-U. The Commission's December 6, 1996 Procedural and Scheduling Order did not identify recombination as an issue to be considered in this case, and following a pre-hearing conference on December 16, 1996, the Hearing Officer held that recombination would not be an issue in this proceeding. Therefore the Commission need not consider any newly-raised allegations pertaining to the method(s) of recombining the UNEs, and it would not be appropriate for the Commission to reconsider its policy on the recombination issue in this proceeding, especially given the Eighth Circuit's recent decisions.

III. OTHER COST-BASED RATES

A. Nonrecurring Costs

Nonrecurring costs ("NRCs") are one-time charges associated with UNEs and are incurred, for example, when a CLEC orders a loop and a BellSouth service technician must take action to provision the order. Thus costs associated primarily with the ordering and provisioning of UNEs are reflected as nonrecurring charges for each such element. BellSouth divided its costs into recurring and nonrecurring costs, taking steps to allocate costs consistent with cost-causation principles. (Caldwell/Zarakas, Tr. 397-410.) BellSouth criticized the models sponsored by intervenors (the Hatfield, NRC, and Collocation models) on the basis that they apparently have not undergone even cursory review to ensure consistency in the treatment of recurring and nonrecurring costs. (BellSouth Brief at 8, citing Walsh, Tr. 2738.)

BellSouth witness Mr. Reid testified that BellSouth's approach for including forward-looking shared and common costs in its TELRIC cost studies utilized cost causative principles, as prescribed in the Cost Allocation Manual ("CAM") used by BellSouth, to develop appropriate shared and common costs factors. (Tr. 1032.) BellSouth's methodology, among other things, applied shared costs to nonrecurring activities through the use of the shared labor factor.

To develop its shared labor factor, BellSouth calculated the relationship by work force group between various shared costs which were attributed on the basis of salaries and wages by the total salary and wages for a Company work group. The resulting shared labor factor was used as a component in the TELRIC labor rate. (Reid Surrebuttal at 23-25.) BellSouth witness Mr. Reid argued that this methodology is an appropriate procedure, and asserted that AT&T merely disagreed with BellSouth's approach for recognizing costs associated with certain nonrecurring activities on a cost-causative basis.

The Consumers' Utility Counsel stated that BellSouth's proposed NRCs for UNE provisioning appear to severely inhibit the development of competition, and to discriminate against CLECs. (CUC Brief at 26.)

AT&T offered into evidence the rebuttal testimony of witness Art Lerma who criticized BellSouth's shared and common cost model as an unreliable and unacceptable means for calculating the shared and common costs for the shared labor rates used to establish prices for BellSouth's unbundled network elements. First, he stated that the model is not forward-looking, because it was based largely upon the embedded historical costs of BellSouth's current network. Next, Mr. Lerma questioned the accuracy of the outputs of the model. He asserted that many of the inputs are based on untested and unsupported data inputs and overall criticizes the complexity of the model. Finally, he stated that BellSouth's shared and common cost model contained numerous methodological errors. Specifically, he stated, these relate to the improper treatment of recurring costs as nonrecurring in the shared labor factors, improper attribution bases for assigning shared and common costs, and overstatement of expected costs for a local carrier service center and inadequate data to support the expected costs. (Lerma Rebuttal at 5-6.)

AT&T alleged that BellSouth erred in its methodology for calculating shared labor factors in that its model includes recovery for recurring costs. AT&T further stated that BellSouth's shared labor factors were used to determine a portion of shared costs that BellSouth believes should be recovered via the TELRIC labor rates used to price out nonrecurring costs. (Lerma Rebuttal at 30.) According to Mr. Lerma, "BST improperly assumed that recurring wholesale expenses in account/cost pools that are attributed based on salary and wages should be recovered via the shared labor rate factors and subsequently, the labor rates applied to calculate non-recurring prices." (Lerma Rebuttal at 30-31.)

AT&T also criticized the CAM attribution approach used by BellSouth to determine the portion of shared and common costs attributable to the sale of UNEs. AT&T stated that BellSouth's approach resulted in wholesale expenses for specified account/cost pools being recovered through shared labor factors as nonrecurring costs without any showing that recurring expenses have been excluded. (Lerma Rebuttal at 31.) Mr. Lerma recognized that some of the costs in the specified account/cost pools may include some increment of nonrecurring costs, however, BellSouth failed to provide supporting documentation to determine the increment of nonrecurring costs that may be attributable to certain cost pools. Because of the lack of sufficient data, AT&T proposed an adjustment to the shared labor rate factors in BellSouth's model to reflect alternative attribution bases for those cost pools attributed using salary and wages. (Lerma Rebuttal at 33.) The resulting attribution basis shifted recovery from the shared labor rate factors to the shared cost factors used to calculate recurring TELRIC rates. This adjustment reduced the shared labor rate factors to zero.

AT&T witness Ellison stated that BellSouth's proposed service order charges for loops and ports, taken together, would result in a nonrecurring charge of $104.73 to new entrants for migrating the combined existing network element combinations of an individual customer. He calculated that

these charges would "unnecessarily" add $6.97 to AT&T's equivalent monthly costs of serving the typical residence (assuming the customer remained with AT&T for 15 months). He asked the Commission to approve instead a cost of 23 cents ($0.23) as proposed by AT&T witness Walsh. (Ellison Supplemental-Rebuttal at 28.)

AT&T witnesses Ellison, Walsh and Hyde also supported alternative approaches to certain NRCs based upon a nonrecurring cost model and based upon critique of BellSouth's nonrecurring cost studies. Some of that critique addresses BellSouth's proposal to include cost recovery for OSS electronic interface development within NRCs, which is an issue discussed in the next section. In general, Mr. Ellison stated, the Commission must not foreclose through excessive nonrecurring rates the otherwise viable competition that could result through efficiently priced recurring rates for network elements. (Ellison Supplemental-Rebuttal at 58.)

MCI argued that the Non-Recurring Cost Model ("NRCM") sponsored by it and AT&T is consistent with the 1996 Act's pricing standards at Sections 251(c) and 252(d) and would promote competition in Georgia's local exchange markets. MCI and AT&T developed the NRCM using a forward-looking cost methodology and a "bottoms up" estimate of the costs. (MCI Brief at 36-37, citing Tr. 2647-48.) Their NRCM assumed that pre-ordering, ordering, provisioning, repairs, maintenance, and billing processes are handled electronically through OSS in a highly automated, accurate and rapid manner with little or no human intervention. A major driver of high NRCs is labor time, with time-consuming human intervention. MCI stated that on a forward-looking basis, well-managed OSS should provide a minimal "fallout" rate, so the NRCM assumed a "conservative" fallout rate of 2 percent. MCI also suggested that OSS investment results in efficiency gains, and that in some cases no recovery in recurring or nonrecurring rates is necessary. (MCI Brief at 37-39, citing Tr. 2568-60, 2648-51, 2650).

MCI also argued that the NRCM incorporated the efficiencies of Local Digital Switches, Integrated DLC with a GR-303 interface, Digital Cross-Connect Systems and Synchronous Optical Network ("SONET") rings for transport, which provide for the maximum electronic flow-through for provisioning. MCI charged that BellSouth's nonrecurring cost model did not incorporate these efficiencies and hence overestimated manual intervention costs. (MCI Brief at 39.) MCI also stated that the NRCM recognizes, wherever possible, migrations[19] and installations[20] as mechanized. While BellSouth modeled installation NRCs to include the cost of disconnection, the NRCM separates installation and disconnection for costing and pricing purposes. AT&T/MCI witness Richard Walsh testified that the rationale is twofold: (1) it recognizes that BellSouth should only receive disconnection revenues at the time of disconnection, which also eliminates a "time value of money"

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[19] Migration occurs when a customer with existing service requests a change of local service provider. (Tr. 2665-67.)

[20] Installation is the establishment of any new (or additional) service for an existing customer. (Tr. 2665-67.)

concern; and (2) the disaggregation of installation and disconnection costs and prices also allows the new entrant to benefit from long-standing, efficient practices with respect to Dedicated Inside Plant ("DIP") and Dedicated Outside Plant ("DOP"). (MCI Brief at 39-40, citing Tr. 2660.) MCI stated that the DIP and DOP processes allow for rapid activation or de-activation of services at an end user location without the need for physical disruption of the facility because a command from the OSS to the network element will either activate or de-activate the service. MCI added that BellSouth's current disconnect policy adheres to this principle, and urged that new entrants obtain the same benefits from the DIP and DOP processes as BellSouth. (MCI Brief at 40.)

MCI argued that BellSouth's NRC cost study did not use forward-looking, least-cost, most efficient technology and network architecture, and thus overstated necessary work functions, travel times, fallout of orders, and time necessary to complete other tasks. For example, MCI stated, BellSouth assumed manual intervention at the Local Customer Service Center ("LCSC") rather than least-cost, most-efficient OSS modeling assumptions despite FCC requirements regarding electronic interfaces. (MCI Brief at 40-, citing Tr. 2563, 2654-61, 2667, 2881-83.)

WorldCom asserted that BellSouth's NRC study yielded overstated results because it assumed that BellSouth must: (1) perform a circuit layout for every loop; (2) dispatch a technician into the field to provision every loop order; (3) treat every loop, in many respects, as if it is ordered alone; (4) perform expensive testing on every loop; (5) allow for a 20 percent "fallout" rate; and (6) apply a coordination charge to "new," in additional to existing loops. (WorldCom Brief at 20-

BellSouth countered intervenor arguments that high NRCs are a barrier to entry by stating that all business ventures carry the necessity for assuming some degree of risk and investment, and that the AT&T/MCI attempt to eliminate all but a small amount of NRCs is a ploy to shift the risk of investment associated with their entry onto BellSouth's shoulders. (BellSouth Brief at 36-37.)

BellSouth also criticized the Nonrecurring Cost Model advocated by AT&T and MCI on various grounds, including the "most central assumption" that UNE orders would automatically flow through the ordering and provisioning process using currently available OSS, processes and procedures with little or no manual intervention. According to BellSouth, this "dream may perhaps some day materialize" using Bellcore's Telecommunications Management Network ("TMN") architecture. BellSouth acknowledged that, taken at face value, the TMN architecture is not in fact assumed in the AT&T/MCI study; but stated that the study does assume that current OSS will lead to the same automatic flow-through as a theoretical system that BellSouth characterized as "pie in the sky." (BellSouth Brief at 37.) BellSouth also criticized the AT&T/MCI Nonrecurring Cost Model for its assumptions regarding dedicated facilities, and testing. (BellSouth Brief at 39-41.)

The Staff concurred with AT&T that BellSouth used improper attribution bases for attributing the shared costs. The Staff agreed that BellSouth did not provide the Commission with sufficient information to allow a determination of the amount, if any, of nonrecurring costs in specific cost pools. Therefore the Staff recommended removal of the shared costs associated with labor rates for

UNE costs, with a corresponding slight increase in the recurring UNE rates. This increases BellSouth's proposed 2-wire analog loop recurring (monthly) loop rate by $0.28, but reduces the nonrecurring charge. The NRC associated with the 2-wire analog loop becomes $42.54.

The Staff had recommended that BellSouth's disconnection portion of the NRC charge, in the amount of $11.00, be removed from the up-front NRC and only charged at the time of any subsequent disconnection. BellSouth's proposal had been to calculate costs for the prospective disconnection of the UNE and charge those as part of the NRC applied at the time of connection. The Commission is not convinced that BellSouth has made an adequate showing that imposing the disconnection portion of the charge would be fair and nondiscriminatory. In various situations such as with residential customers, BellSouth does not impose a disconnection charge. Moreover, when a disconnection occurs, it is most likely that the customer is switching providers rather than entirely disconnecting (or that another customer is taking the place of the old customer), so it could be double-recovery to charge for work involved in disconnecting which occurs at the time of the new connection for the new CLEC or new customer, because there will be a new NRC for that new connection. There was also evidence (Tr. 2660) that in many instances, de-activation of services at the end user's location does not require physical disruption of the facility. The Commission does not adopt BellSouth's proposed disconnection charge within the nonrecurring charges, which means the Commission also does not adopt the Staff recommendation of collecting the disconnection charge as a nonrecurring charge later at the time of disconnection.

The following table reflects the Commission's adoption of the Staff's recommendation regarding the shared costs associated with labor rates for purposes of the nonrecurring charges:

Shared Labor Factors

Work Force Group Factors	BellSouth	AT&T	Advocate Staff
Address & Facility Inventory (AFIG)	0.4858	0	0
Installation & Maintenance Center (IMC)	0.4858	0	0
Installation & Maintenance Spec Svcs	0.4858	0	0
CO Installation & Maintenance – Circ. & Fac.	0.2752	0	0
Trunk & Carrier Group (TCG)	0.4569	0	0
Circuit Provisioning Group (CPG)	0.2752	0	0
Access Customer Advocate Center (ACAC)	0.4280	0	0
Work Management Center (WMC)	0.4304	0	0
Network Plug-in Administration (PICS)	0.2752	0	0
Outside Plant Engineering	0.4858	0	0
Customer Point of Contact – ICSC	0.4437	0	0
Network Services Clerical	0.4851	0	0
OSPC	0.4858	0	0
OPAC	0.4858	0	0
CRT	0.4858	0	0
COIM – SW. EQ.	0.2752	0	0
RCMAG	0.2752	0	0

SW/TRK BASED TRANS	0.2752	0	0
COIMA-SFTWR	0.2752	0	0
NRC	0.4304	0	0
PAR	0.4304	0	0
EBAC	0.4304	0	0
BRC	0.4304	0	0
RRC	0.4304	0	0
FG10	0.2092	0	0
FG20	0.4304	0	0
CABS Acctg	0.4437	0	0
POTS OP	0.3106	0	0
DA OP	0.3106	0	0
Coin Coll	0.4437	0	0
Coll Rep – Res	0.4437	0	0
Coll Rep – Bus	0.4437	0	0
BO Svc Rep – Res	0.4437	0	0
BO Svc Rep – Bus	0.4437	0	0
Compt Cler	0.4437	0	0
Acct Exec	0.4437	0	0
Systems Des	0.4437	0	0
Svc Cons	0.4437	0	0
Total IOT & OSP	0.4858	0	0
Total COE	0.2752	0	0
Other than IOT, COE & OSP	0.4859	0	0

B. Electronic Interface (OSS) Cost Recovery

BellSouth proposed cost recovery of electronic interface costs associated with operational support systems ("OSS"). BellSouth's proposed rate design would require each CLEC to pay an initial $100.00 charge, and a recurring charge of $50.00 per month, plus a nonrecurring charge of $10.76 for each order placed.

The Consumers' Utility Counsel, as part of its concern that BellSouth's proposed NRCs appear to inhibit competition, stated that as a policy matter the Commission should move as many as possible of the reasonable costs of OSS to the recurring charges. (CUC Brief at 26-27.)

AT&T requested that the Commission not address recovery of electronic interface costs associated with operational support systems (OSS) in the current proceeding, but in a separate proceeding that can address the details of BellSouth's cost estimates, determine what is being provided in BellSouth's proposal, and examine the extent to which such charges should apply to BellSouth and the new entrants. AT&T witness Ellison testified that the BellSouth cost submissions in this proceeding require extensive analysis by examiners experienced in the design and costing of computer operations support systems. However, he added that if the Commission does address these charges in the current proceeding, it should reject BellSouth's proposed cost recovery method and should closely examine BellSouth's costs and arrangements. Mr. Ellison criticized as an exercise of "monopoly power" BellSouth's proposal of recovering the one-time costs for developing interfaces

directly and solely from requesting carriers in the form of special nonrecurring charges. Mr. Ellison's recommended alternative would be a sharing of the costs in a "competitively neutral" manner on the basis of relative use, *i.e.* by calculating unit charges to carriers by spreading the costs across all lines (all demand), including the lines still served by BellSouth. (Ellison Supplemental-Rebuttal at 58-60.)

AT&T argued that the Commission's Supplemental Order in Docket No. 6352-U provided that the costs of "gateway" OSS interfaces be recovered from the industry, and that recovery of all OSS-related costs solely from CLECs would be contrary to this ruling and poor public policy besides. AT&T added that BellSouth has failed to present sufficient evidence to show what portion of the OSS costs it seeks are allowable.

BellSouth witness Varner testified in rebuttal to a proposal by AT&T/MCI witness Cabe who proposed that such costs must simply be borne by the carrier incurring the cost, as "a sort of ante required to enter the new local exchange market" (Cabe Direct at 36). Mr. Varner stated that BellSouth should not be required to absorb costs such as OSS costs, and that if these costs are not recovered from the CLECs who cause them, then they will have to be recovered from other customers. He argued that the CLECs are the primary beneficiaries of these systems and as such they would provide for the cost recovery. Mr. Cabe had suggested (Cabe Direct at 37) that ILECs have a strong incentive to misuse cost information and impose OSS costs on new entrants that serve as a barrier to entry, and Mr. Varner responded that BellSouth's incentive to provide and encourage the use of efficient OSSs rather than to impose costs that serve as a barrier to entry. (Varner Rebuttal at 15-18.)

The Staff agreed that the CLECs should be required to pay for at least some portion of BellSouth's costs of developing the OSS electronic interfaces, but noted that little documentation was provided in the record regarding the reasonableness of the total amounts now sought to be recovered. The Staff also expressed concern regarding the rate design that BellSouth proposed. The Staff therefore recommended a different rate design that would be more conducive to competition. The Staff recommended removing the OSS charges from within the per-order service (nonrecurring) charges, in order to avoid "chilling" the placing of orders. The Staff also recommended review of the proposed OSS cost recovery amounts, and any further review of the associated rate design, after BellSouth has implemented the long-term electronic interfaces that are currently projected for completion by December 1997.

Specifically, the Staff recommended an initial charge of $200 per CLEC, and a monthly charge of $550.00 per CLEC, for the use of electronic interfaces. The monthly $550.00 charge would include up to 1,000 orders. There would also be an additional monthly charge of $110.00 per thousand orders above the first 1,000. There would be no OSS charge within the per-order service (nonrecurring) charge.

Discussion

The Commission addressed the question of cost recovery for BellSouth's development of electronic interfaces for OSS in its Supplemental Order in Docket No. 6352-U. The Commission ruled therein that all costs incurred by BellSouth to implement these interfaces shall be recovered from the industry; although the Commission added that it would resolve any disputes regarding this matter. The Commission concludes that the CLECs should be required to pay for at least some portion of BellSouth's costs of developing the OSS electronic interfaces. However, it is true that little documentation was provided in the record regarding the reasonableness of the total amounts now sought to be recovered. The Commission will direct BellSouth to file further information on its proposed OSS cost recovery amounts, so that the Commission and its Staff may further review these costs and the associated rate design, after BellSouth has implemented the long-term electronic interfaces that were projected for completion by December 1997. The Commission Staff may make a recommendation to the Commission as to whether any further proceedings would be appropriate, following such review.

The Commission also agrees that a different rate design for the CLECs would be more conducive to competition. Thus for the rates to be charged at this time, OSS charges shall be removed from the per-order service (nonrecurring) charge, in order to avoid "chilling" the placing of orders. The initial charge for recovering OSS interface costs to be paid by each CLEC that uses the OSS interfaces shall be $200, and there shall also be a monthly charge of $550.00. The monthly $550.00 charge includes up to 1,000 orders. There shall also be an additional monthly charge of $110.00 per thousand orders above the first 1,000 each month.

C. Collocation

Collocation occurs when a CLEC shares space with BellSouth in order to provide its services. Collocation can be either physical collocation, when the CLEC uses space on BellSouth's premises, or virtual collocation which incorporates use of the CLEC's off-site equipment. In physical collocation, the CLEC uses space belonging to the ILEC to place equipment necessary for interconnection or access to unbundled network elements. 47 U.S.C. § 251(c)(6). Virtual collocation is the process by which the CLEC obtains this access when space limitations prohibit actual use of ILEC property for the placing of CLEC equipment.

The parties presented sharply differing views regarding physical collocation costs. In particular, the parties debated the construction and costs for space preparation which BellSouth proposed should be handled on an "Individual Case Basis" ("ICB") with individually negotiated charges. BellSouth proposed that a CLEC submit an inquiry, and then a BellSouth planner will verify the floor plan, and confer with the Network Capacity Management department about the projected two-year growth of BellSouth equipment. Collocators have the option of providing for their own two-year growth by requesting or reserving this additional space with their Bona Fide Firm Order. The planner will consider the ingress / egress so that, optimally, CLECs can reach their space without