breakpoints, amount and type of pair gain equipment, and use of appropriate fill factors ensures that SWBT's cost studies represent forward-looking technology.

Level of Data.

AT&T and MCI state that most of the HCM inputs are based on nationwide expected values, and that these inputs are appropriate for costing Texas telephone network costs because SWBT experiences cost conditions similar to other large telephone companies[6]. They also pointed out that the HCM does use some SWBT Texas-specific data with the ARMIS and depreciation inputs[7]. However, TELRIC costs should reflect the costs that the ILEC expects to incur in making network elements available to new entrants. The Arbitrators believe that the Texas-specific SWBT inputs generally best reflect these costs. The inputs assumed by the HCM are much too general to be relied upon in costing SWBT's Texas network. The Arbitrators understand that many of the HCM's inputs, such as cable costs, are readily changeable by the user. However, such inputs as labor costs and times, which may be expected to vary widely on a nationwide basis, are less readily changeable. However, while the Commission believes that SWBT's company- and Texas-specific inputs are generally more appropriate for use in computing TELRIC, it does not necessarily believe the specific value of all inputs are necessarily correct. Further discussion of the appropriate values for inputs will be considered elsewhere in this award.

Completeness and ability to modify.

In its current configuration, the HCM is unable to separate recurring and non recurring charges, distinguish between different types of DA and operator services, or capitalize operations support costs.[8] The inability of the HCM to separate recurring and nonrecurring costs increases the danger of over- or under-recovery of costs in rates.

SWBT used a discussion of manhole costs to provide an example that the HCM does not include all of the costs required to provided unbundled network elements. SWBT implies that HCM only applies forward-looking costs to the Petitioners' conception of a theoretical network rather than to a fully developed telecommunications network. Therefore, the HCM may neglect many of the costs associated with actually

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[6] Tr. 3376-3379.

[7] Tr. 3377.

[8] Tr. at 3606-3607.

designing, engineering, and installing a network. Further, SWBT maintains that the HCM does not provide the complete cost of an unbundled element and that other costs associated with unbundling must be added to the HCM TELRIC results.[9]

One of the HCM's main attractions is its ease of operation. As a self-contained model, 490 user interface adjustments allow some flexibility in its use.[10] While these input options are available to the user, many such inputs as fill factors and depreciation may require considerable manipulation before entering into the model. In addition, there is a large degree of underlying data that is not subject to user inputs. Overall, the HCM is a much simpler model than the SWBT models.

SWBT, on the other hand, has a large number of component studies which must be fit together to develop the complete TELRIC. SWBT makes no apology for the complexity of its cost studies, arguing that it is their complexity that assures that the TELRIC are complete and accurate. While SWBT's cost studies are complex, inputs can be adjusted, but not in a single computer interface.[11]

The Arbitrators must balance the requirement of accurate cost results with the ability to understand the models producing the results. Nevertheless, the Arbitrators do not want the issue of user-friendliness to outweigh considerations of completeness, the appropriate reflections of SWBT's network design, or appropriate separation of nonrecurring charges. The Arbitrators are also concerned that, after spending significantly more time reviewing the HCM than has been done in this proceeding, the FCC has as yet been unable to fully endorse the HCM as an appropriate TELRIC model.

Degree of cost methodology review/burden of proof.

Neither SWBT's cost models nor the HCM has undergone a complete audit in this proceeding. Because of the accelerated nature of the proceeding, parties have not been able to engage in the extensive discovery necessary to fully understand and verify the accuracy of each of the results of the cost models. At the same time, the Arbitrators believe that it is not the usual process in any costing proceeding for parties to verify the validity of each of the hundreds or even thousands of calculations contained in a cost study. The typical level of review concentrates on the general

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[9] Tr. at 3392.

[10] Tr. at 3286-3290.

[11] Tr. at 3320-3323.

methodology of the study, the overall logic of the calculations and the appropriate value of the inputs that most greatly affect the eventual cost. Parties may also verify a sample of the calculations used in the study.

Need to select one Model.

In order to develop accurate costs, one must apply correct input values into the most theoretically accurate cost model. Even the main proponent of the HCM argued it is best to pick a cost model and then battle over the input values.[12] In this proceeding, there is sufficient evidence in the record to inform and support decisions regarding the values of key model inputs and methodologies. Other minor inputs have not been addressed. For economy of effort, it is better to select one model. SWBT can spend its time preparing and presenting the cost studies in a manner that makes its methodology and choices of inputs and assumptions readily apparent to all. Likewise, Petitioners can expend their efforts learning the SWBT methodology and auditing the calculations and underlying data. Otherwise, both parties will have to be engaged in double efforts to prepare cost studies and explain them to others at the same time they attempt to learn another methodology and prepare recommendations for changes.

Sources of Investment Data.

SWBT maintains that the underlying investment used to develop TELRIC is the actual vendor price that SWBT would face if it were to buy the forward-looking equipment today. The Arbitrators find that SWBT's approach to identifying investment is reasonable. SWBT has represented that it has made all of its underlying cost information available to the petitioners under the terms of the protective agreement.[13] Petitioners continue to argue that they have not had enough time to review the material and work their way back through the studies to verify the underlying investment.[14] In the further cost study review required by the Award, Petitioners may prove the investment in SWBT cost studies is not the vendor price SWBT actually faces. Absent rebuttal evidence from the Petitioners as part of further cost study review, SWBT's vendor prices will be deemed approved.

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[12] Tr. 3356 (Testimony of Dr. Mercer).

[13] Tr. at 4397.

[14] Tr. at 2979-2981.

Provision for the preparation of TELRIC studies.

SWBT shall correct their cost studies pursuant to the specific instructions detailed in this Award. SWBT's revised cost studies must be filed with the Commission by January 15, 1997.

Further Cost Study Review.

While SWBT is correcting its cost studies, SWBT must work with the Petitioners so that they are able to understand the operations of all of the cost models SWBT relies upon, including but not limited to: SCIS, CCSCIS, NCAT, COSTPROG, and LPVST. SWBT shall provide a reasonable amount of training in the use of the cost studies for Petitioners' personnel. Upon the completion of SWBT's revised cost studies, Petitioners shall be given until March 14, 1997 to review and file comments with the Commission related to those parts of the cost studies that have not been determined in this proceeding. Until cost studies are approved for various services/elements, the interim rates established in this Award shall apply. The Arbitrators strongly encourage parties to negotiate final TELRIC-based rates based on the findings in this Award, and thus hasten the implementation of permanent rates.

63. The record evidence supports the following requirements for properly constructing an efficient network configuration for economic cost models:

(a) the loop segment of the model must be configured using "hub and spoke" topology; the interoffice segment must be configured using "fiber ring" topology.

(b) redundant and diverse fiber routes must be configured to achieve 99.99% availability of end-to-end connectivity;

(c) digital loop carriers (DLCs) with high speed transmission capability must be included in the model, deployed only to extend loops to subscribers located more than 12,000 feet (12KF) from a central office. The cut-over point from copper to fiber occurs at 12KF from the serving central office. The Arbitrators find the 12KF limit for copper loop length necessary to accommodate forward-looking ADSL technology;

(d) of the DLCs, 25% must be integrated DLCs, while the remaining 75% must be universal DLCs.

(e) switch locations must be at existing central office locations, and outside plant and structure installation routes must follow existing rights-of-way.

64. The Arbitrators find that the digital switching technology used in the SWBT cost studies represents forward-looking technology.

General Inputs.

65. The Arbitrators find that, generally, utilization assumptions based on average expected usage rather than full or near-full capacity are most appropriate. Full or near-full capacity assumptions would usually not constitute a reasonable projection of the actual total usage of the element. Specific utilization factors are provided elsewhere in the Arbitrators' Award.

66. The record evidence supports the following as reasonable levels of capacity utilization (fill factors) for the following network equipment:

(a) *Switch*
(1) *Processor*: 90%
(2) *Lines*: 89.5%. The Arbitrators find SWBT's assumptions and calculations are more reasonable than the evidence provided by AT&T and MCI.

(b) *Feeder Cable*: underground feeder: 79.2%
buried cable: 75%
aerial cable: 75%

The Arbitrators conclude that the growth rate assumed by SWBT must be reduced by at least two-thirds to account for the effect of facilities-based competition. The Arbitrators find that the HCM failed to consider various types of feeder plant such as underground, buried, and aerial cable. SWBT cost studies must use the same fill factors for feeder stubs and DLCs.

(c) *Distribution Cable*: 40%. This is the fill factor approved by the Commission in Docket No. 14659. The 40% factor must be used in the SWBT LPVST model. SWBT must place the cable for ultimate service requirements.

(d) *STP Processor Capacity*: 40% for each STP; 80% in total for the STP pair. The Arbitrators agree with AT&T that the link utilization factor will increase when permanent number portability is implemented. The fill factor for link utilization shall be 32% (80% of the maximum 40% link utilization factor).

(e) *STP Ports*: 80 percent (80%).

(f) *Trunks*: The cost study must assume 27 Hundred Call Seconds (CCS) traffic per trunk, and must include six (6) lines per trunk in urban areas and 12 in rural areas.

These assumptions take into account the expectation that internet/data calls will typically last longer than voice calls.

(g) *Conduits*: 50%, when the conduit is used for installing both copper and fiber facilities.

67. FTA96 §252 allows the Arbitrators to set a forward-looking cost of capital without conducting a traditional rate of return proceeding.

68. The record evidence supports a cost of capital (rate of return) of 10.36. The cost of capital is computed as follows:

Common Equity:	58.11%	12.25%	7.12
Long Term Debt:	37.26%	8.00%	2.98
Short Term Debt:	4.63%	5.72%	.26
	100.0%		10.36

69. The Arbitrators find that the record evidence demonstrates that SWBT must use the Average Service Life and Future Net Salvage Value depreciation method prescribed by the FCC, effective June 1996, to calculate the depreciation rates for depreciable plant account categories. SWBT must use the following formula for calculating economic depreciation rates:
Economic Depreciation Rate = (100-Future Net Salvage %) / (Average Service Life).

The Arbitrators find that the depreciation rates listed in Appendix C to this Award are reasonable.

Inputs -- SWBT Studies.

70. The record evidence shows that some level of historical data must be used in preparing TELRIC studies. The Arbitrators recognize the need to balance the use of historical data with concerns that the data reflect forward-looking conditions and expectations. The Arbitrators' conclusions regarding use of historical data will be reviewed in the implementation phase of these proceedings. The Arbitrators will consider adjustments to the most recent historical data to reflect forward-looking conditions.

71. The general methodology used by SWBT to calculate operating expense and capital cost annual cost factors (ACF) is reasonable. However, SWBT presented

insufficient evidence to establish the appropriateness of its inflation factors, and the inflation factors must be removed from SWBT's studies. The Arbitrators will consider adjustments to the inputs to the ACFs to reflect forward-looking conditions.

Forward-Looking Common Costs.

72. The Arbitrators will consider calculations of forward-looking common costs in the implementation phase of these proceedings, after SWBT has filed the cost study revisions required by this Award. However, the Arbitrators find that, based on the record evidence, a reasonable common cost allocator would be in the range of 10% - 15.5%.

Review of Costs and Prices.

73. In order for SWBT's cost study to be used to develop the cost of the unbundled loop, the following modifications to SWBT's basic level and basic rate interface (BRI) loop studies (including cost development for the cross-connect, NID, and 5 dB loop conditioning must be made:

(a) *Cross-connect costs*: The cost of the cross-connect jumper used to provide 2- and 4-wire analog loops must be recovered separately from the loop in a non-recurring charge. SMAS and SARTS for 2-wire loops shall be priced separately using TELRIC methodology.

(b) *Sharing of pole costs:* When it calculates pole costs, SWBT must decrease its investment in poles by 22% to account for sharing facilities with cable television (CATV) and other facilities-based providers. This 22% factor is derived in the following manner. First, the pole must be divided into two different types of investment: usable and unusable. The usable investment, which constitutes the top 60% of the pole is available for attaching cables. The "unusable" investment is the bottom 40% of the pole that must support the upper 60%. By law, no cable may be attached to the unusable part of the pole for safety reasons. These two parts of the poles are shared in different ways. It is reasonable to assume that one-quarter of the top 60% of each pole owned by SWBT will be shared with other companies on a forward-looking basis. However, per FTA 96, two-thirds of the percent of the top 60% assumed to be used by non-ILEC companies should be assumed shared in the bottom 40%[15]. Averaging the one-quarter in the top 60% of the pole with the one-sixth[16] in the bottom 40% yields approximately 22%[17]. In addition,

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[15] FTA 96 §224(e)(2).

[16] 25% * 2/3 = 16.67%, or approximately 1/6.

SWBT shall also account for sharing leasing costs on the poles it leases from electric companies in its pole costs. The leasing cost per loop installed on a leased pole shall be equal to the total pole leasing costs incurred by SWBT divided by the total number of loops SWBT carries on these poles. When the per-loop leased pole costs (weighted by the percentage of total loops SWBT has on leased poles) are added to the per-loop owned pole cost (weighted by the percentage of total loops SWBT has on leased poles) described above, the result would be the total per-loop pole cost This pole calculation methodology may require refinement. If this methodology does not fully capture the intricacies of SWBT network practices, SWBT may propose refinements to this methodology prior to performing its loop studies. The Arbitrators reserve the right to review and approve or reject any refinements proposed by SWBT. This decision applies to all of SWBT's TELRIC loop studies.

(c) *Sharing of conduit costs:* When it calculates conduit costs, SWBT must reduce them by one-third, to account for sharing with CATV and other facilities-based providers. SWBT must apply this methodology in all of its loop studies.

(d) *Calculation of pole and conduit costs:* SWBT must develop pole and conduit costs that are not dependent on the cost of the cable they support. Therefore, pole and conduit costs will be determined independent of the LPVST model. Pole costs for each cost driver combination (CDC) should be developed as follows: (1) SWBT determines the average loop length and the average amount of aerial cable associated with an average loop; (2) SWBT determines the number of poles needed for the average amount of aerial cable, and calculates the total pole cost; (3) The pole cost must be multiplied by a factor representing the relative capacity of the pole a unit of "loop" will use (*see* ¶73(b) of this Award), then adjusted for the sharing percentage described above. The same general methodology must be used to derive conduit costs. The Arbitrators' decision on this issue applies to all of SWBT's TELRIC loop studies.

(e) *Costs of 2-wire and 4-wire loops*: The record evidence demonstrates that it is inappropriate to calculate 4-wire loop costs by doubling SWBT's 2-wire loop costs. The Arbitrators order SWBT to file a separate 4-wire TELRIC loop study, using an 80% distribution cable fill factor (as well as appropriately adjusting for all other equipment that will not be duplicated for a 4-wire loop). The new study should reflect the additional costs of a 4-wire loop, such as extra investment in feeder cable or terminations needed to provide the second pair of wires, but shall not include additional distribution cable beyond that in the 2-wire study. A diagram depicting the equipment necessary to provide 2-wire and 4-wire loops is provided as Appendix D to the Award. In addition: (1) the

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[17] 25% * 60% + 16.67% * 40% = 21.67%, or 22% when rounded.

Arbitrators require that the costs of the cross-connect jumper (between the main distribution frame (MDF) and the cross-tie cable) used to provide 2- and 4-wire analog loops be recovered separately from the loop in a non-recurring charge; and (2) SMAS and SARTS tie cable cross-connects for 2-wire loops shall be unbundled (in accordance with the Arbitrators' Unbundled Network Elements decision) and priced separately using TELRIC methodology. These requirements apply to all of SWBT's TELRIC loop studies;

(f) *Cost driver levels and deaveraging*: The Arbitrators find that, until the completion of state and federal proceedings regarding universal service support mechanisms, a statewide average rate for unbundled loops is appropriate. When it files revised loop studies, however, SWBT must report TELRICs separately for each CDC, so that sufficient information will be available to the Commission in the event loop rates are deaveraged in the future. SWBT's revised studies must use four new loop distance cost drivers, with three break points between the levels: (1) 12,000 feet (12KF), the break point the evidence shows is the most reasonable copper/fiber technology break point; (2) the loop distance that is the median for all loop lengths less than 12KF; and (3) the loop distance that is the median for all loop lengths greater than 12KF. These requirements apply to all of SWBT's TELRIC loop studies.

(g) *More information or additional revisions necessary:* (1) In all of its TELRIC loop studies, SWBT must remove the application of the frame building investment factor to any investment associated with lines that terminate to the switch rather than to an MDF.[18] (2) The Arbitrators have not yet received an investment binder supporting SWBT's DS-1 network access connection (NAC) costs, and therefore are not in a position to rule on its validity. The changes in the loop studies required by the Award must be incorporated in the SWBT DS-1 NAC study. (3) SWBT must prepare a digital loop carrier (DLC) study for the unbundled DLC required by the Arbitrators. (4) SWBT must prepare a dark fiber TELRIC study for the unbundled dark fiber required by the Arbitrators.

74. SWBT must make the following additions and modifications to its local switching and analog, Basic Rate Interface (BRI) and Primary Rate Interface (PRI) line-side switch port cost studies:

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[18] SWBT witness Moore agreed that SWBT's use of MDF costs on the 25% integrated pair gain factor that does not terminate to an MDF is inappropriate. In response to staff clarifying questions, Mr. Moore stated: "If the question is getting to the point, have we included an MDF on those 25 percent and should not have, the answer is 'yes'." Tr. 3521

(a) The Arbitrators find that SWBT's switching studies require additional wire center cost driver levels. The filed cost driver levels provide insufficient information on how costs differ with wire center sizes. The following levels should be included in the revised SWBT TELRIC studies: (1) up to 10,000 working lines; (2) 10,001 to 20,000 working lines; (3) 20,001 to 40,000 working lines; and (4) more than 40,000 working lines. SWBT may propose alternative cost driver break points if it believes they are more appropriate due to changes in switching technology; in no event, however, shall SWBT provide less than three cost driver levels. The Arbitrators find that deaveraging is not appropriate at this time, as discussed elsewhere in the Award.

(b) As discussed above, the Arbitrators find that SWBT did not use appropriate wire center size cost driver levels in performing its local switching TELRIC study. Due to these cost driver levels, SWBT may have an inappropriately stratified sample methodology. This concern should be addressed by the use of additional cost driver levels in SWBT's revised TELRIC studies.

75. SWBT's suggested interim rates for interoffice transport are reasonable. SWBT must filed an interoffice transport study by January 15, 1997.

76. The Arbitrators agree with SWBT and the Petitioners that tandem switching does not need to be deaveraged. The record evidence does not provide enough information to support a finding approving SWBT's tandem switching cost study methodology. SWBT must provide the equations and inputs necessary to compute the total tandem setup and MOU investments for each wire center cost driver combination (e.g., small to small, large to small, etc.) developed behind Tab 2 and reported behind Tab 1 of the tandem switching TELRIC investment study.

77. Neither SWBT nor the Petitioners filed cost studies for specific operations support systems elements. Any rates proposed by SWBT for these elements shall be considered interim rates. The rates will be subject to revision and replacement after SWBT's cost studies have been filed and reviewed. Operations support systems elements cost studies shall be filed with the Commission by January 15, 1997.

78. SWBT's rates currently offered to other ILECs are reasonable interim rates, and shall be used until SWBT files operator services and directory assistance TELRIC cost studies. SWBT must file the studies with the Commission by January 15, 1997.

79. SWBT's transport proxy rates are reasonable, and shall be used as interim rates until permanent rates are approved. The costs of providing transport and termination are generally the same as those used to provide local switching and interoffice transport;

SWBT must reflect in its termination costs the changes ordered by the Arbitrators in its local switching study.

80. The Arbitrators find that the costs in the white pages study SWBT filed on October 18, 1996 may include internal SWBT costs that are inappropriately passed on to competitors. Therefore, the Arbitrators believe that a simpler method, using only third-party contract costs plus any distribution costs not included in third party contract costs, should be used to calculate white pages costs. This methodology will yield white pages costs on two different bases: per-book and per-printed page per year. The methodology SWBT shall use to develop the per-book cost is as follows. The most recent cost of the annual third-party contract costs associated with printing white pages listings less the costs of providing "informational" or "advertising" pages shall be divided by the most recent estimate of total number of books produced annually. The result will be a per-book cost of printing white pages listings. For the per-printed page per year cost, the annual third-party contract costs associated with printing white pages informational pages shall be divided by the number of such pages printed per year. The result will be a per-printed page per year cost.

Using the two costs described above, a total white pages expense for a provider (either SWBT or a competitor) can then be calculated as follows. If it can be assumed that SWBT has only one competitor, the white pages directory costs can be divided into four types of costs: (1) the cost of listings (assume these are 45% of directory costs in this example), (2) the cost of SWBT's informational pages (assume 30%), (3) the cost of the LSP's informational pages (assume 20%), and (4) the cost of mandated or jointly-provided pages (e.g., emergency services, government listings) (assume 5%). The total costs the LSP will pay will be a function of the size of the phone book (how many listings), the number of informational pages the LSP has (20% of the book in this example), the number of mandatory or jointly-provided pages, and the number of phone books produced for the LSP's customers and for SWBT's customers. For the books that the LSP orders from SWBT for its own customers, the LSP will pay 70% of the cost of producing the book (45% of the book for the listings, 20% for its informational pages, and 5% for mandated or jointly-provided informational pages) multiplied by the number of copies the LSP orders for its customers. SWBT's cost for providing the book to the LSP's customers will be 30% multiplied by the number of copies of the book the LSP orders for its customers. In contrast, for SWBT's own customers, it will pay a total amount derived by multiplying 80% (45% plus 30% plus 5%) by the number of SWBT customers. The LSP will pay 20% of the cost of providing these books to SWBT's customers. Using this methodology, the costs of providing phone books shall be shared between providers.

The Arbitrators order SWBT to file a white pages TELRIC study using the per-book and per-printed page per year methodology described above. In the study, SWBT should deaverage the white pages costs into the following zones:

Directories of 0 to 15,000 copies for all providers (including SWBT)
Directories of 15,001 to 50,000 copies for all providers (including SWBT)
Directories of 50,001 to 200,000 copies for all providers (including SWBT)
Directories of 200,001 to 500,000 copies for all providers (including SWBT)
Directories of 500,001 to 1,000,000 copies for all providers (including SWBT)
Directories of 1,000,001 to 2,000,000 copies for all providers (including SWBT)
Directories of greater than 2,000,000 copies for all providers (including SWBT)

At this time, the Arbitrators do not require that SWBT deaverage the white pages rates. The Arbitrators may consider appropriate deaveraging of white pages rates when the results of the revised local switching and local loop studies are obtained, reviewed, and approved.

Pricing Issues.

81. SWBT should recover most non-recurring charges (NRCs) at the time they are incurred. The price of the NRCs must be based on TELRIC studies, but until those studies are approved by the Commission, current SWBT tariffed rates shall apply. In the case of collocation cages, however, LSPs may pay SWBT over time. In such cases, SWBT shall reduce the LSP's charges appropriately when another LSP begins utilizing the facility originally built for the first LSP. Should a carrier cause SWBT to build a collocation cage and then not use the facility (or all the facility), the LSP must reimburse SWBT as if it was using the facility. SWBT must give the LSP in such circumstances the opportunity to sublet the cage (or part of the cage) to another LSP if it does not use all or part of the facility.

82. SWBT must perform a TELRIC cost study that develops the costs of changing customers from SWBT to a competing LSP, and vice versa. SWBT must file the study by January 15, 1997.

83. The Arbitrators find that SWBT must provide cost justification for its fees for administrative approval of LSP requests for pole attachments and conduit space. SWBT shall file a study that develops these costs by January 15, 1997. *FTA96 §224(f)(1) and §251(b)(4). (AT&T, MCI)*

I. INTERIM RATES

84. In establishing interim rates, the Arbitrators find that the adjustments in SWBT cost studies required by this Award will lower SWBT's proposed prices in all instances. Since the prices proposed by Petitioners relying on HCM are consistently lower than those proposed by SWBT, the Arbitrators in certain cases use the prices developed through the use of HCM as a benchmark for calculation of interim rates.

85. *Loop Rates.* For 8 dB loops, the interim rate shall be the statewide averaged rate of $15, as developed for the interim rate in Docket 14659. For 5 dB loops, the interim rate shall be $17, as developed in the same docket. For the BRI loop, the interim rate shall be $38. This value is SWBT's BRI loop cost for its Geographic Zone 2 in the Unbundled Loop Study. The Arbitrators' reasoning for choosing this value is as follows: the interim rate of $15 for the 8 dB analog loop is almost exactly the same as the cost SWBT calculated for the 8 dB loop for Geographic Group 2 in its Unbundled Loop Study. Therefore, since the interim rate chosen for the 8 dB loop is basically the same as the cost calculated for Geographic Group 2, it should be so for the BRI loop. For the same reason, the interim rate for the DS-1 loop should be $105, SWBT's approximate DS-1 loop TELRIC for Geographic Group 2.

For the MDF to cage cross-connect rate interim rates, SWBT's rates as derived from its TELRIC studies should be used as interim rates, as there is no evidence on the record that other rates are more appropriate. Note that these interim rates do not include rates for jumper wire cross-connects for 2- and 4-wire 8 dB and 5 dB loops. Because the costs of such jumpers are expensed, there shall be no separate interim rate item for this jumper.

For interim dark fiber rates, the rates are based on the per-foot fiber cable (including contractor labor) and interduct (including additional contractor labor associated with the interduct) costs that SWBT developed and reported in its cost study support information[19]. To these costs, SWBT's current annual charge factors for fiber cable and conduit were applied to result in the TELRICs necessary for dark fiber on a per-foot basis. Rates were determined by applying SWBT's forward-looking common cost allocation factor to each cable and conduit TELRIC. These results shall be used as interim rates. These rates are as follows:

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[19] Bates Stamped pages 12712 and 12713 of binder labeled "Texas Additional Supporting Documentation Requested by AT&T 9/25/96 [General Request]".

(a) *Buried 24-Fiber Cable per foot, per month* : $0.069476 per cable or $0.002895 per fiber[20]

(b) *Underground 24-Fiber Cable per foot, per month*: $0.072601 per cable or $0.003025 per fiber

(c) *Buried 36-Fiber Cable per foot, per month*: $0.103425 per cable or $0.002873 per fiber

(d) *Underground 36-Fiber Cable per foot, per month*: $0.107864 per cable or $0.002996 per fiber

(e) *Conduit, per foot, per month*: $0.016320 per cable

86. *Switching Rates.* For the analog line-side switch port, the interim rate shall be the average of SWBT's rates and the HCM rate, or $1.95[21]. Because the HCM does not calculate line-side switch port costs for BRI or PRI, the interim rates for these elements will be 72% of the rates that SWBT reports, or $3.88 and $115.73, respectively[22]. The Arbitrators choose to use this percentage of these rates because the interim line-side port rate as calculated is approximately 72% of SWBT's line-side port cost.

For the local switching rate, the interim rates shall be computed by averaging the HCM local switching rate with an average of SWBT's three per-minute local switching rates of $0.003090, 0.003997, and 0.005042 weighted by the number of lines in each of the three rate groups. The average for the SWBT study rates is approximately $0.003906 per minute. When averaged with the HCM result of $0.0019 per minute, the resulting interim rate is $0.002903 per minute[23].

For the tandem switching rate, the interim shall be the average of the tandem switching rates derived from SWBT's tandem switching study and the HCM. This rate is $0.002453 per minute[24].

87. *Transport.* As discussed above, the interim rates for transport shall be the rates approved by the FCC for interstate dedicated switched transport.

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[20] $0.069476 per 24-fiber cable/24 fibers = $0.002895 per fiber. *See* "SWBT Texas Additional Support Documentation."

[21] ($2.35*1.155 + $1.19)/2 = $1.95.

[22] $4.66*1.155*72% = $3.88 and $139.16*1.155*72% = $115.73.

[23] ($0.003960 + $0.0019)/2 = $0.002903.

[24] ($0.002603*1.155 + $0.0019)/2 = $0.002453.

88. *Signaling.* For signaling links, there shall be two interim rates: one for DS-0 links and one for DS-1 links. The interim rates for each of these link types shall be averages of the SWBT rates for these links and the HCM link rate. For DS-0 links, this average is $41.04, and for DS-1 links, this average is $32.13[25].

For other parts of the signaling network interim rates cannot be determined by simply averaging the results of SWBT's and the Petitioners' studies, because the structure of the rates are different (e.g., for STPs, SWBT's rates are on a per-node basis, while the HCM calculates per-message costs). SWBT's rates will be used as the interim rates for all signaling equipment except for the links described above.

89. *Operations Support Systems.* For any operations support systems elements for which rates were actually filed in this proceeding, the SWBT rates are to be used as interim rates. The HCM does not separately calculate the costs of these elements, so the only evidence on the record is presented by SWBT.

90. *Operator Services Systems.* Because the HCM's one rate of $0.08 per call does not adequately capture the range of costs caused by all the different operator services and DA types of calls, the rates that SWBT has proposed, and currently offers to other LECs, shall be used as proxies.

91. *White Pages.* Because the white pages rates that SWBT developed must be averaged, and no other reliable white pages study is in evidence, the white pages interim rate for each white pages study element shall be an average (by rate group line count from the local switching study) of the three rates developed for that element in SWBT's most recent White Pages Study[26]. These elements and their interim rates are as follows:

Cost to Others for being in Directory, per book copy:

Per Copy	$2.5487
Delivery Cost, per Copy	$0.4985[27]
Cost of Listing Updates, per Copy	$0.2541
Total	$3.3013

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[25] ($56.57*1.155 + $16.87)/2 = $41.04 and ($41.03*1.155 + $16.86) = $32.13.

[26] Filed on October 18, 1996.

[27] This value is equal to the total Texas initial delivery cost multiplied by the percentage of deliveries that are initial deliveries plus the total Texas subsequent delivery cost multiplied by the percentage of deliveries that are subsequent deliveries.

Cost Per Page Per Year Any One Book	$1938.7379

92. *Non-Recurring Costs.* SWBT did compute TELRIC non-recurring costs (NRCs) for many of the activities, such as connecting a customer to SWBT's network, that cause one-time labor costs to be incurred. The HCM, however, does not calculate any such costs separately from the recurring costs that it develops. Because of the general paucity of evidence on the record as to what NRCs should be charged for the provision of various labor activities, the NRCs SWBT has proposed in this proceeding shall be used as interim rates until final rates are approved.

93. *Collocation.* The evidence on the record for collocation costs is sparse. Neither SWBT nor petitioners performed cost studies for these rates, and the Arbitrators find that the rates discussed for SWBT seem extremely high. The Arbitrators therefore find it reasonable to base interim rates on the average rates set in collocation agreements entered into by a sample of other RBOCs. The method for arriving at this average will be that proposed by TCG in its post-hearing brief.[28] The interim rates will be based on a simple average of the collocation prices included in agreements TCG has reached with Pacific Telesis, BellSouth, and NYNEX. The interim rates (both recurring and non-recurring) will remain in effect until a TELRIC study is approved by the Commission.

94. *Fees for administrative approval of LSP requests for pole attachments and conduit space.* The Arbitrators find that SWBT must provide cost justification for its fees for administrative approval of LSP requests for pole attachments and conduit space. Until cost-based permanent rates are set, the fees SWBT proposed at a price of $250 may be set no higher than $125.

95. The Arbitrators do not specifically impose any imputation requirements in this proceeding. Any imputation standards developed in the future should comport with the Commission's imputation rule (as developed in PUC Project No. 14360) and standards of PURA95 §3.454.

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[28] TCG Brief (October 18, 1996), at 41.

J. CONTRACT-RELATED LEGAL ISSUES AND FILING OF ARBITRATION AGREEMENTS

96. If the parties choose to include an intellectual property indemnity provision, the contract language proposed by AT&T, modified as follows, shall be used as the intellectual property indemnity provision rather than the language proposed by SWBT. The provision shall read as follows:

"The LSP understands that it is responsible for obtaining any license or right-to-use agreement associated with a network element purchased from SWBT, and further agrees to provide SWBT, prior to using any such network element, with either: (1) a copy of the applicable license or right-to-use agreement (or letter from the licenser attesting as such); or (2) an affidavit signed by the LSP attesting to the acquisition of any known and necessary licensing and right-to-use agreements. SWBT agrees to provide a list of all known and necessary licenses or right-to-use agreements applicable to the subject network element(s) within seven days of a request for such a list by the LSP. SWBT agrees to use its best efforts to facilitate the obtaining of any necessary license or right-to-use agreement. In the event such an agreement is not forthcoming for a network element ordered by the LSP, the parties commit to negotiate in good faith for the provision of alternative elements or services which shall be equivalent to or superior to the element for which the LSP is unable to obtain such license or agreement.

Each Party shall and hereby agrees to defend at the other's request, indemnify, and hold harmless the other Party and each of its officers, directors, employees, and agents (each, an "Indemnitee") against and in respect of any loss, debt, liability, damage, obligation, claim demand, judgment, or settlement of any nature or kind, known or unknown, liquidated or unliquidated, including without limitation all reasonable costs and expenses incurred (legal, account or otherwise) arising out of, resulting from, or based upon any pending or threatened claim, action, proceeding or suit by any third party for actual infringement of any patent, copyright, trademark, service mark, trade name, trade dress, trade secret or any other intellectual property right now known or later developed to the extent that such claim or action arises from the actions of the respective Parties, or failure to act, as required pursuant to this Agreement." *FTA96 §252(b)(4). (AT&T, MCI)*

97. The Arbitrators find that the contract language proposed by SWBT and AT&T concerning the effect of intervening law on an interconnection agreement is not, when considered as a whole, reasonable. If the parties choose to include an "intervening law" provision, the contract provision shall provide, in substance, as follows:

"This agreement is entered into as a result of both private negotiation between the Parties and arbitration by the Public Utility Commission of Texas (PUC), acting pursuant to FTA96, PURA95, and the PUC's Substantive Rules. If the actions of Texas or federal legislative bodies, courts, or regulatory agencies of competent jurisdiction invalidate, modify, or stay the enforcement of laws or regulations that were the basis for a provision of the contract required by the Arbitration Award approved by the PUC, the affected provision shall be invalidated, modified, or stayed as required by action of the legislative body, court, or regulatory agency. In such event, the Parties shall expend diligent efforts to arrive at an agreement respecting the modifications to the agreement required. If negotiations fail, disputes between the Parties concerning the interpretation of the actions required or provisions affected by such governmental actions shall be resolved pursuant to the dispute resolution process provided for in this agreement. The invalidation, stay, or modification of the pricing provisions of the FCC's First Report and Order in CC Docket No. 96-98 (August 8, 1996) and the FCC's Order on Reconsideration (September 27, 1996) shall not be considered an invalidation, stay, or modification requiring changes to provisions of the agreement required by the PUC Arbitration Award, in that the FCC's pricing provisions are not the basis for the costing and pricing provisions of the PUC's Arbitration Award." *FTA96 §252(b)(4). (AT&T, MCI)*

Filing of Interconnection Agreements.

98. ACSI, AT&T, MCI, MFS, and TCG shall each be responsible for filing individual interconnection agreements with SWBT that are consistent with the terms of this Award. The agreements must be filed with the Commission no later than 3:00 p.m. on November 19, 1996. ACSI, AT&T, MCI, MFS, TCG, and SWBT shall consult and cooperate with one another in preparing the agreements to be filed with the Commission, and the parties shall make every effort to resolve remaining disagreements prior to filing the interconnection agreement. If SWBT believes that aspects of the agreement filed by a Petitioner do not comply with the Arbitration Award, SWBT may file comments (limited to five pages) identifying the provisions of the agreement it believes are not in compliance with this Award To the extent disagreements remain, they may be addressed in more detail during the comment period prior to Commission approval of the agreements.

When interconnection agreements are filed on November 19, the parties shall make filings that state either: (1) that the filed agreement includes negotiated provisions (agreed to either before, during, or after the arbitration proceedings) that were not the subject of arbitration, as well as provisions required by this Arbitration Award; or (2) that the parties consider the entire agreement "arbitrated," and thus subject in its entirety to the review standards for arbitrated agreements stated in FTA96. If (1) applies, the parties shall identify which provisions are "Negotiated" and which are "Arbitrated."

IV. SCHEDULE FOR IMPLEMENTATION OF ARBITRATION AWARD

Pursuant to FTA96 §252(c)(3), the Arbitrators provide the following "schedule for implementation of the terms and conditions" of this Award and the parties' arbitration agreements. This schedule incorporates deadlines for: (1) the filing and approval of interconnection agreements consistent with this Award; (2) the filing, review, and approval of SWBT cost studies; (3) the implementation of permanent rates for the elements/services for which interim rates are set in this Award; and (4) the status reports on certain issues required by this Award. This schedule is, and should be considered, an integral part of the Arbitration Award in this proceeding.

November 19, 1996
ACSI, AT&T, MCI, MFS, and TCG file interconnection agreements with SWBT. If necessary, SWBT files comments on the filed agreements. *(See Award ¶98.)*

November 29, 1996
Deadline for comments on interconnection agreements from interested parties.

December 19, 1996
Commission approval of ACSI, AT&T, MCI, MFS, and TCG interconnection agreements.

December 31, 1996
SWBT and Petitioners submit agreed upon list of central offices and other SWBT premises where physical collocation should be offered. *(See Award ¶13.)*

January 15, 1997

1. Deadline for SWBT to file cost studies (revisions and new studies required by this Award) with the Commission. *(See Award ¶62.)*

2. SWBT files first monthly progress report regarding development and implementation of electronic interfaces. *(See Award ¶25.)*

February 15, 1997
SWBT files tariffs for collocation at designated central offices and other locations. *(See Award ¶13.)*

February 28, 1997
SWBT and the Petitioners report to the Commission on the status of SWBT's implementation of real-time electronic interfaces that allow LSPs to perform preordering, ordering, provisioning, maintenance and repair, and billing for resale services and unbundled network elements. *(See Award ¶25.)*

May 1, 1997
Deadline for parties to: (1) file negotiated permanent rates; and/or (2) request further arbitration on certain rate issues.-

June 13, 1997
Commission review of interconnection issues. The review will focus on the status of issues including, but not limited to, the following:

1. Industry standards concerning connectivity of SWBT switches with LSP service control points (SCPs). *(See Award ¶5.)*

2. The technical feasibility or further unbundling at the SWBT feeder distribution interface (FDI). *(See Award ¶8.)*

3. The workability of, and proposed alternatives to, the 15-step approval process required by SWBT for administrative approval of LSP requests for pole attachments and conduit space. *(See Award ¶17.)*

4. The implementation by SWBT of real-time electronic interfaces that allow LSPs to perform preordering, ordering, provisioning, maintenance and repair, and billing for resale services and unbundled network elements. *(See Award ¶25.)*

5. The status of LSP negotiations with SWBT regarding branding the cover of the white pages telephone directory. *(See Award ¶34.)*

6. The availability of hardware and software that would allow LSPs access to systems used in populating and editing the 9-1-1 database. *(See Award ¶46.)*

June 30, 1997
Petitioners designate additional collocation sites for tariffing, if necessary. *(See Award ¶13.)*

August 15, 1997
SWBT files tariffs for additional collocation locations, if necessary. *(See Award ¶13.)*

V. CONCLUSION

The Arbitrators conclude that the foregoing Arbitration Award, including the attached appendices, reflects a resolution of the disputed issues presented by the parties for arbitration. The Arbitrators find that their resolution of the issues complies with the standards set in FTA96 §252(c), the relevant provisions of PURA95, and the Commission's dispute resolution rules.

SIGNED AT AUSTIN, TEXAS the 7th day of November, 1996.

PUBLIC UTILITY COMMISSION OF TEXAS
FTA96 §252 ARBITRATION PANEL

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PAT WOOD, III, Arbitrator

_____
ROBERT W. GEE, Arbitrator

_____
JUDY WALSH, Arbitrator

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Pam Whittington	**John Gillespie**	**Nelson Parish**	**Ray Murray**
Roger Stewart	**Howard Siegel**	**Nara Srinivasa**	**Martin Wilson**
Diana Zake	**Kevin Zarling**	**Lisa Redkey**	**Carole Vogel**

APPENDIX A

STIPULATIONS FILED BY SWBT AND THE PETITIONERS

APPENDIX B

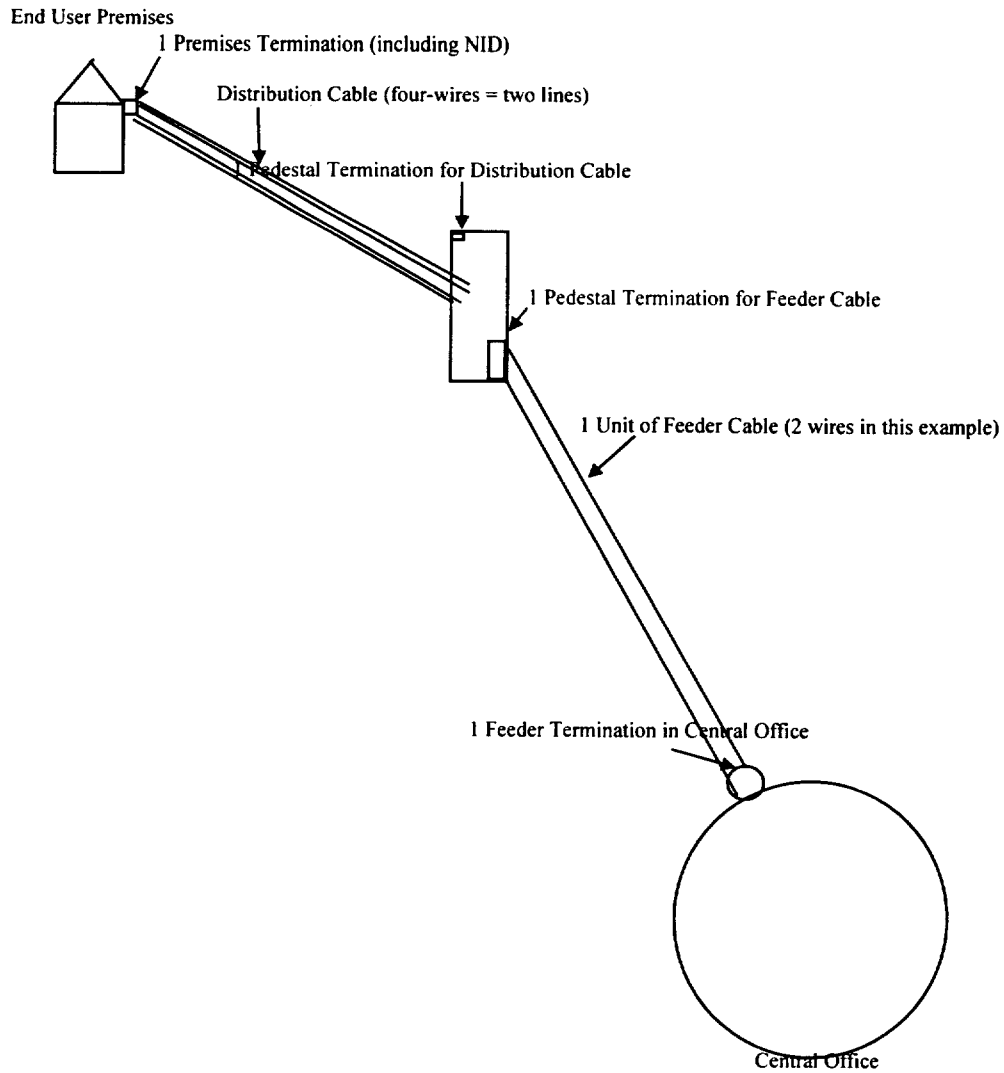
AVOIDED COST DISCOUNT CALCULATION

APPENDIX C

ECONOMIC DEPRECIATION RATES FOR SWBT

APPENDIX D

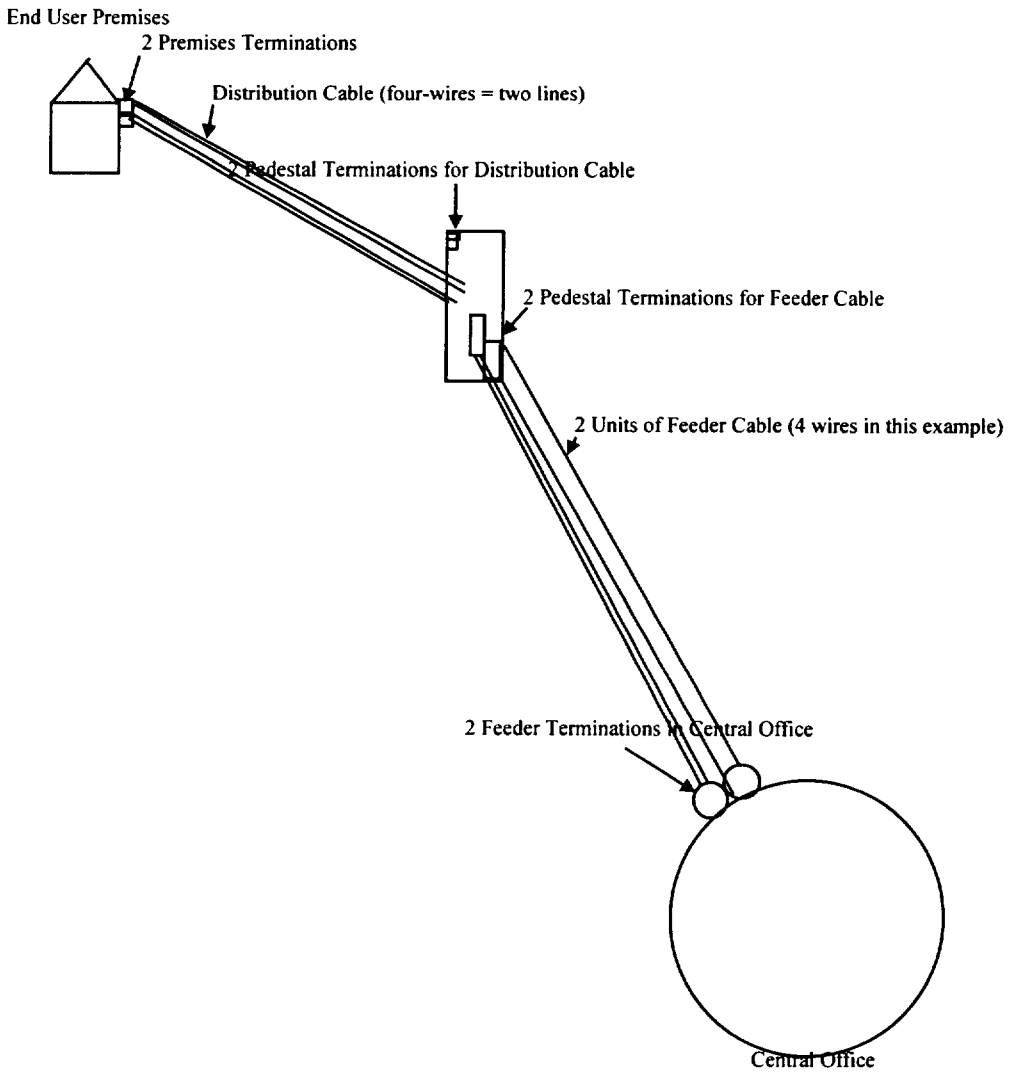
COSTS OF A 2-WIRE LOOP



Cost of 2-wire line =
cost of 1 premises termination +
cost of 4 distribution cable wires +
cost of 1 distribution cable pedestal termination +
cost of 1 feeder cable pedestal termination +
cost of 2 feeder cable wires +
cost of 1 feeder cable termination in C.O.

APPENDIX D, Cont'd

COSTS OF A 4-WIRE LOOP



Cost of 4-wire line =
cost of 2 premises terminations +
cost of 4 distribution cable wires +
cost of 2 distribution cable pedestal terminations +
cost of 2 feeder cable pedestal terminations +
terminations in C.O.
cost of 4 feeder cable wires +
cost of 2 feeder cable

APPENDIX E

AT&T EXHIBIT 15A