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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

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In the Matter of	
Federal-State Joint Board on Universal Service	CC Docket No. 96-45
Forward-Looking Mechanism for High Cost Support for Non-Rural LECs	CC Docket No. 97-160
Common Carrier Bureau Seeks Comment on State Forward-Looking Cost Studies For Universal Service Support	DA 98-1055; APD No. 98-1

COMMENTS OF AT&T CORP.
ON STATE UNIVERSAL SERVICE COST STUDIES

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COMMENTS OF AT&T CORP.
ON STATE UNIVERSAL SERVICE COST STUDIES

Pursuant to the Commission's Public Notice,[1] AT&T Corp. ("AT&T") hereby submits its comments on the state universal service cost models conducted by Hawaii, Illinois, Indiana, Kentucky, Louisiana, Michigan, Minnesota, Montana, Nebraska, North Carolina, Puerto Rico, and South Carolina and filed with the Commission on May 26, 1998.

INTRODUCTION AND SUMMARY

In its Universal Service Order, the Commission endorsed ten criteria to which universal service cost studies should adhere. Through numerous comments, reply comments, and ex parte

[1] Public Notice, Common Carrier Bureau Seeks Comment on State Forward-Looking Cost Studies for Universal Service Support, DA 98-1055 (rel. June 4, 1998) ("Notice").

filings, AT&T and MCI Telecommunications Corporation ("MCI") have demonstrated that the HAI Model satisfies these criteria and provides the best platform for calculating universal service costs.[2] Not surprisingly, a number of states have based their own cost studies on some version of the HAI Model. Because states are submitting cost studies to the Commission for the purpose of determining the amount of the federal Universal Service Fund ("USF") that they should receive, it is vital that the Commission ensure that these studies all adhere to a consistent methodology and consistent input values. Otherwise, anomalies in state studies will drive real differences in federal USF reimbursements.

Occasionally, the states using the HAI Model have made improper adjustments to the default inputs, adjustments that contravene forward-looking economic cost estimation. These include: (i) asset lives that fall below the Commission's approved asset lives; (ii) unjustifiably inflated drop lengths; (iii) distribution plant mixes that do not comport with efficient, forward-looking practices; (iv) excessively high joint and common costs that are inconsistent with a universal service carrier operating in a competitive environment; (v) costs of capital above the incumbent carriers' actual costs of capital; and (vi) inefficient structure sharing levels.

Fortunately, the HAI Model allows for easy and rapid re-estimation of universal service costs using a different set of input values. In those cases where a state has improper or

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[2] See Federal-State Joint Board on Universal Service, "Comments of AT&T Corp. and MCI Telecommunications Corporation on Designated Input Platform Issues," CC Docket Nos. 96-45, 97-160 (October 17, 1997); Federal-State Joint Board on Universal Service, "Comments of AT&T Corp. and MCI Telecommunications Corporation on Designated Input Platform Issues," CC Docket Nos. 96-45, 97-160 (October 27, 1997). AT&T and MCI incorporate by reference those comments and reply comments as well as the additional comments and reply comments they submitted on August 8, 1997, August 18, 1997, September 2, 1997, September 10, 1997, September 24, 1997, October 3, 1997, June 1, 1998 and June 12, 1998.

inconsistent input values, the Commission should redirect the state to recalculate universal service cost estimates with appropriate inputs if they want their cost studies to be accepted.

Of greater concern, a number of states chose to adopt cost studies methods fundamentally inconsistent with the Commission's universal service cost study criteria. These studies were based either on various versions of the BCPM (Indiana, Montana, Nebraska, North Carolina, Puerto Rico, and South Carolina) or a hodgepodge of cost models not designed to estimate properly forward-looking universal service costs (Illinois and Michigan). The cost studies submitted by these states must be rejected or adjusted because they do not:

- employ the least cost, most efficient technology for universal service;
- treat all costs as variable and avoidable;
- include a reasonable allocation of joint and common costs; and,
- use open and verifiable algorithms and data.

The BCPM's shortcomings are legion. Most obviously, as AT&T and MCI recently reminded the Commission, the BCPM does not use geocode data. Without question, then, the BCPM cannot model customer locations -- and therefore universal service costs -- as accurately as the HAI Model which bases its network sizing and engineering on geocode data. See AT&T and MCI June 1, 1998 Comments at 5; AT&T and MCI June 12, 1998 Reply Comments at 4. The BCPM is also designed to recover incumbent local exchange carrier's embedded costs stemming from their legacy network. The BCPM's sponsors attempt to conceal this feature of their model by relying on complicated, proprietary models and data, but even a cursory examination of the BCPM's algorithms reveals that its switching calculations, for example, are rooted in an incumbent's embedded network. Further, by using unreasonably low cable fill

factors, the BCPM ensures a significant overstatement of distribution costs. While any one of these three shortcomings easily justifies rejection of a cost study based on the BCPM, AT&T encourages the Commission to review the many comments, reply comments, and ex parte filings made by various parties in this proceeding that illustrate numerous other fatal flaws in that model.

Given the significant problems that characterize the BCPM, it is not surprising that even the states employing it to estimate universal service costs did so reluctantly. Indiana, for example, adopted the BCPM more or less as a stop gap measure and stated that its

> decision . . . to submit a BCPM model to the FCC should be read not so much as an endorsement of the BCPM model as an expression of our desire to keep open the possibility that we may some time in the future be able to choose between the BCPM model and the FCC [forward-looking economic cost] model.

"Order," Cause No. 40785 at 14 (Indiana URC April 23, 1998). Similarly, Montana chose to refrain from adopting the BCPM at this time as its permanent cost model for estimating unbundled network elements.

Finally, Illinois and Michigan an even more problematic approach. In both states, Ameritech combined multiple studies that as implemented individually and collectively fail to accurately calculate universal service cost estimates and fail to comport with the Commission's ten criteria for forward-looking economic cost studies. Illinois confounds this difficulty by proposing a still different model for calculating GTE's costs.

I. HAWAII, KENTUCKY, LOUISIANA, AND MINNESOTA PROPERLY SELECTED THE HAI MODEL TO CALCULATE UNIVERSAL SERVICE COSTS, BUT, IN A FEW IMPORTANT RESPECTS, UTILIZED INAPPROPRIATE INPUT VALUE ASSUMPTIONS.

Multiple rounds of comments, reply comments and ex parte submissions over the past year

have confirmed that the HAI model is the best available method for estimating universal service costs. The HAI model provides highly accurate and disaggregated estimates of the forward-looking costs of providing covered services and is extremely flexible, with hundreds of user adjustable inputs and ready adaptability to myriad data types and sources. Further, the HAI model does not exhibit the fundamental customer location and switching flaws (among others) inherent in the competing BCPM model. Accordingly, Hawaii, Kentucky, Louisiana and Minnesota are to be commended for proposing to use the HAI model to estimate universal service costs.

No model, however, can produce accurate cost estimate outputs if it is run with inaccurate or inconsistent input value assumptions. And, unfortunately, each of the states that submitted HAI model results, has employed one or more inappropriate input values that result in significantly overstated universal service costs.

Excessive drop length assumptions. No data currently available makes it possible to determine precisely where within each lot a house lies or how much empty space, such as roads, parking lots, or greenways, is interspersed between houses. The HAI model does, however, properly reflect the fact that drop length generally varies with population density. Specifically, the HAI model default drop length for the two least dense zones is 150 feet, for the next two zones 100 feet, and for the remaining five zones 50 feet. These figures comport with latest publicly available network study of drop lengths which found an average drop length of 73 feet.[3]

Two states applying the HAI Model assumed significantly greater drop lengths. Louisiana

[3] See BellCore, BOC Notes on the LEC Networks -1994, page 12-9.

assumed drop lengths averaging 177 feet and Minnesota assumed drop lengths averaging a full 192 feet. These assumptions are more than double the 73 foot nationwide average, and neither state provides evidence to support their selected departures from national average values.[4] The Commission should require Minnesota and Louisiana to provide substantial evidence supporting their assumed drop lengths or, alternatively, should recalculate their universal service cost estimates using the HAI Model default values if their studies are to be accepted.

Inappropriate distribution plant mix assumptions. The Commission has concluded that an efficient carrier will vary its plant mix according the population density of an area.[5] The Commission also has concluded that the plant mix assignment should reflect terrain factors. In particular, relatively more feeder and distribution cable should be assigned to aerial installation for all population density groups in wire centers characterized by "hard rock" conditions than in similar density wire centers with other terrain conditions.[6] Similarly, as the amount of paved surfaces increases (usually as population density increases), a cost efficient plant mix will exhibit decreased use of buried cable.

By contrast, the distribution structure mix employed in Minnesota's cost study inappropriately decreases the use of aerial techniques while increasing the proportion of buried cable as population density increases. In this manner, the Minnesota cost study inflates the cost of

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[4] Moreover, Louisiana states that its number of 177 feet is adjusted by density zone, but does not explain how the adjustment is made.

[5] See Federal-State Joint Board on Universal Service, Forward-Looking Mechanism for High cost Support for Non-Rural LEC's, CC Docket Nos. 96-45, 97-160, "Further Notice of Proposed Rulemaking," FCC 97-256 ¶ 58 (released July 18, 1997) ("FNPRM"). Plant mix refers to the percentages of plant which are aerial, buried, and underground.

[6] FNPRM ¶ 58.

providing universal service. The Commission should direct Minnesota to use an efficient plant mix that conforms to its previous findings in the Universal Service proceeding.

Excessive joint and common costs. Several states failed to recognize that an efficient universal service provider will have lower joint and common (overhead) costs than a monopoly service provider. In this regard, the best available estimate of forward-looking joint and common costs market is the joint and common costs of telecommunications companies that exist in competitive markets. To this end, the HAI Model developers studied the overhead costs of AT&T, a telecommunications company in a competitive environment. See Ex-Parte Submission by AT&T (March 18, 1997). The results of this study indicate that a telecommunications provider in a competitive industry can attribute no more than 10.4% of the sum of all capital costs and operations expenses to overhead. That figure is, if anything, conservatively high. AT&T has recently announced efforts to significantly reduce its overhead expenditures.

Several of the states that filed cost studies failed to appreciate the importance of estimating joint and common costs as they will exist in a competitive market rather than using historical estimates for firms enjoying regulated monopoly status. Hawaii and Minnesota, for example, assumed joint and common costs to be 20% and 14.1%, respectively, of the sum of all capital costs and operations expenses. These figures rely on historical Bell Operating Company data[7] -- data that reflects not forward-looking costs, but inflated overhead costs as they exist in a regulated monopoly setting. If these states wish their cost studies to be accepted, the

[7] The following states (not applying the HAI Model) similarly used historical costs of overhead rather than forward-looking costs: Illinois, Montana, Nebraska, North Carolina and South Carolina.

Commission should direct them to use a joint and common cost factor of no more than 10.4% (or, at a minimum, to provide substantial evidence to support the higher input values they used in their studies).

Excessive Cost of Capital. Recent economic data and state commission findings confirm that the average cost of capital of a large local exchange carrier is no more than 10.01%, far below the 11.25% maximum rate presently permitted under the Commission's rules. Indeed, financial experts have demonstrated that a regional Bell Operating Company's ("RBOC's") combined cost of raising capital for its core, stable operations of providing local communications services (to end users and other carriers) and its other, riskier, operations, is only 10.01%. See, e.g., "Statement of Mathew I. Kahal Concerning Cost of Capital," In the Matter of Rate of Return Prescription for Local Exchange Carriers, File No. AAD95-172, March 11, 1996; AT&T ex parte filing of February 12, 1997, "Estimating the Cost of Capital of Local Telephone Companies for the Provision of Network Elements," by Bradford Cornell, September 1996. Given the impressive growth rates in local telephone lines, technology gains that promise the ability to deliver additional services over existing local loop facilities and other carriers' continued dependence on incumbent local exchange carrier ("LEC") facilities, the risks associated with the local communications service aspect of an RBOC's operations are significantly less than the risks associated with the RBOC's other operations. That is even more true with respect to the provision of basic services (for which demand is particularly inelastic) to high cost customers -- if the RBOCs are to be believed, they will face virtually no competition in serving those customers, and the universal service subsidy virtually guarantees that they will cover their costs. Hence, if anything, the 10.01% value should be used as a ceiling when estimating universal service costs.

Nonetheless, with the exception of Hawaii (9.73%), all of the cost studies based on the HAI model undertaken by the states assumed costs of capital in excess of 10.01%. Prior to accepting these states' studies, the Commission should require Kentucky (10.3%), Louisiana (10.5%) and Minnesota (11.25%) to justify the higher cost of capital they used or, instead, to rerun the HAI Model in these states using a 10.01% cost of capital.[8]

Inadequate structure sharing. AT&T has previously cited extensive record evidence that there is substantial sharing of all types of plant, including buried. See Florida PSC September 24, 1997 Comments at 7. That evidence shows that most telephone companies today are overcoming the purported difficulties of coordinating their placement of buried plant. See Rural Utilities Services September 24, 1997 Comments at 5-6. It is AT&T's contention that sharing percentages adopted in any universal service cost estimate should reflect forward-looking opportunities and incentives to share, rather than historical practices.

The incumbent LECs' current level of sharing represents merely the sharing that occurred when the LECs faced a monopoly environment. As the Florida PSC notes, there should be more sharing of structure in the future . See Florida PSC September 24, 1997 Comments at 8. In fact, sharing should rise in all areas, rural as well as urban, both because of the greater incentives to reduce costs and because of the increase in the number of entities with whom to share structure costs.

Moreover, the Telecommunications Act of 1996 explicitly contemplates the sharing of

[8] Among states that did not use the HAI Model, some exceeded a 10.01% rate of return, including Michigan (10.6%), Nebraska (11.25%), and South Carolina (10.63%) while others estimated rates below 10.01%, including Illinois (9.52%) and North Carolina-GTE (9.94%).

outside plant structures. The Act modified § 224 of the Communications Act to require attachers to pay for two-thirds of the non-usable space on poles, ducts, conduits and rights-of-way. 47 U.S.C. § 224(e). This requirement, then, implies that Congress believed that typically three parties would be using an incumbent LEC's outside plant structures and provides compensation for use of these structures under this assumption.

The HAI Model developers have populated the model with default sharing factors between 25% and 50% (and 100% for buried plant in low density zones), a conclusion reached by Hawaii as well. However, Kentucky, Louisiana and Minnesota use historical sharing data to estimate exceedingly high forward-looking sharing structure fractions. For example, Minnesota assumes based on historical data that telephone companies will bear 66% of the cost of <u>any</u> structure, whether aerial, buried or underground. Likewise, Louisiana uses a historical study to determine that the telephone companies will bear 75% of the cost of buried plant.[9] Most egregiously, Kentucky inflates universal service costs by assuming that the universal service provider would bear fully <u>85%</u> of buried drop costs. Because these structure sharing assumptions do not reflect forward-looking efficient practices, Kentucky, Louisiana, and Minnesota should be required to provide the Commission with substantial evidence to support these high cost sharing levels or to recalculate their universal service costs using the HAI Model default values prior to acceptance of their studies.[10]

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[9] Contrary to convention, Minnesota reports its structure sharing estimates in terms of percentage that will be born by others, thus Minnesota reports a buried sharing percentage of 25%.

[10] Among the states that did not use the HAI approach, South Carolina assumes <u>95% and 100%</u> of costs will be borne by the local telephone provider for buried and underground cable respectively. These are exceedingly high values, particularly in light of the fact that the majority

(continued. . .)

Inappropriate materials cost adjustments. The costs of poles, copper cables, and other items should not vary significantly from state to state. A telephone pole, for example, should not cost more in one state than the cost of that same item in any other state plus transportation costs; otherwise there would be an arbitrage opportunity. Consequently, if the incumbent carrier is operating efficiently, there is not much reason to suspect that material cost inputs will differ much from state to state. In addition, material costs in the construction of an entirely new network often will be lower than the current market prices used as default value in the HAI Model because bulk purchases frequently induce volume discounts. Given this conservative feature of the HAI Model's cost inputs and the absence of any convincing reason to believe that costs will vary significantly from state to state, the Commission should hold in abeyance its decision regarding the adequacy of any cost study not using the HAI Model default costs until the Commission has made a finding regarding the reasonableness of state-specific cost inputs.

Exceedingly short asset lives. There is no justification for using asset lives shorter than the Commission's currently approved asset lives. See AT&T and MCI June 1, 1998 Comments at 10; AT&T and MCI June 12, 1998 Reply Comments at 13. The Commission's approved asset lives reflect a collaborative process between the incumbent carrier, the state commission, and the Commission to determine expected asset lives. Asset lives are subject to triennial review and, if conditions warrant, are adjusted to reflect revised expectations. Advocates of accelerated depreciation rates have provided no justification for the Commission to now allow state

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(. . . continued)
of other states use values below 66%. Likewise, North Carolina apparently assumes about 85%, regardless of plant type and without providing any data to substantiate its position.

commissions at the behest of incumbent carriers to unilaterally shorten prescribed asset lives for the purpose of receiving a larger draw from the federal USF. Technological change has already been taken into account in triennial review process and the potential onset of competition is unlikely to result in increased technological obsolescence in a market where entrants will largely be dependent on incumbent carrier's network elements to provide service. In fact, technological advances and the need to reduce costs in response to competition may result in longer assets lives. For example, the recent emergence of ADSL technology may expand the useful life of copper loops that can now be used to provide broadband services previously available only over fiber or coaxial loops.

Nevertheless, a number of states, particularly those employing the BCPM model, bent to incumbent carrier generated pressure to shorten assets lives and thereby substantially increase universal service costs. Thus, despite the absence of any convincing justification to controvert the traditional depreciation determination process, Montana accelerated depreciation for cable and digital switches and circuits. Similarly, Michigan, Nebraska and South Carolina substantially shortened asset lives for many critical network components. Any cost studies submitted by these states should be required to re-estimate their universal service costs using FCC prescribed asset lives before they are accepted by the Commission.

II. THE BCPM-BASED COST STUDIES SUBMITTED BY INDIANA, MONTANA, NEBRASKA, NORTH CAROLINA, PUERTO RICO, AND SOUTH CAROLINA FAIL TO SATISFY THE COMMISSION'S STATE COST STUDY CRITERIA.

Six states and territories submitted BCPM-based cost estimates. As AT&T and MCI have previously demonstrated, that model has so many fundamental flaws that it cannot reliably be used

to estimate universal service costs, regardless of the input value assumptions that are employed. Accordingly, for the reasons summarized below and more fully developed in AT&T's prior comments, the Commission should find that these studies fail to satisfy its cost study criteria.

The BCPM is designed to recover embedded switching costs. The BCPM sponsors continue their efforts to recover embedded switching costs by incorporating a variant of "SCIS" in the model. The use of SCIS -- a model developed by incumbent LECs for developing the cost of individual switching features, and that has demonstrated considerable flexibility to generate high costs for regulated services and low costs for unregulated services -- is totally unacceptable for universal service cost estimation. As an initial matter, SCIS is a closed, proprietary model. See AT&T and MCI August 18, 1997 Reply Comments at 10.[11]

Further, SCIS utilizes outdated and vendor specific inputs. See AT&T and MCI August 18, 1997 Reply Comments at 11. For example, to the extent that a wire center contains a switch with an expandable processor, SCIS takes as a given that processor type for determining switching costs. In other words, the model will not calculate the optimal processor based on usage inputs and may therefore significantly overestimate costs. And by relying on vendor and equipment model specific inputs, SCIS generates additional problems. For example, selectively including vendor specific information in some aspects of a model but not in others creates undesirable opportunities to "game" the modeling process. More importantly, a reliable network

[11] The Commission reasonably cannot allow the use of proprietary version of SCIS on the theory that it was audited in the past. That audit addressed only those several elements of SCIS used in the Open Network Architecture ("ONA") proceeding, see Open Network Architecture Tariffs of Bell Operating Companies, "Order," CC Docket No. 92-91 (released Dec. 15, 1993), and, in any event, the audit is now dated and cannot attest to the substantial variations in SCIS that have occurred since that time.

optimization using vendor specific data is impossible in practice. Market shares of each equipment model and vendor, purchasing practices, and other currently unavailable data would be required on a forward-looking basis. Individual prices for each switch type and vendor would also be necessary. Also, in direct contravention of the Commission's universal service cost study criteria, relying on vendor and equipment model specific inputs precludes verification of the cost mechanism's algorithms, data, and results. In particular, the SCIS model even relies on specific characteristics in the components of manufacturer switches and other equipment. Both the Commission and the parties, however, have had tremendous difficulty obtaining even average switch prices, much less vendor specific prices, or the costs and characteristics of individual switch components.

Moreover, the BCPM sponsors continue to urge the Commission simply to throw aside its central forward-looking premise and require that cost models accept as "efficient" for each wire center whatever switch type the incumbent happened to place there, regardless when the placement decision was made. See AT&T and MCI August 18, 1997 Reply Comments at 13. Embedded switch placement decisions reflect the switch and related costs and capabilities of the past, and it is undeniable, for example, that both the cost characteristics and capabilities of remote switches have changed greatly in recent years.[12] This is well illustrated by the empirical data provided by rural utilities (see AT&T and MCI August 18, 1997 Reply Comments at 13) and the fact that, as of 1996, 7.3% of RBOC switches (serving 18.8% of their lines) were still analog. See ARMIS 43-07.

[12] The HAI Model approach of basing average switch costs on the current purchasing practices of incumbent LECs, by contrast, is faithful to forward-looking cost estimation principles.

Simply put, SCIS-based studies are fundamentally flawed, relying on embedded data and including vast degrees of complexity unnecessary and undesirable for modeling a basic telephone network and determining universal service support.

The BCPM does not properly model customer locations. Commenters in the Commission's universal service proceeding uniformly recognize the superiority of using geocode data to model customer locations. The only objections raised to geocode data pertained to the potential cost of collecting additional geocode data, a concern AT&T and MCI clearly demonstrated is without merit, especially given that the HAI model already incorporates geocode data for most customers. See AT&T and MCI June 12, 1998 Reply Comments at 4.

Even though the BCPM contains no data precisely locating customers, it proceeds to segment each "ultimate grid" into four quadrants and then engineers a square distribution area at the "road centroid" of the non-empty quadrants. See AT&T and MCI September 2, 1997 Comments at 3; AT&T and MCI September 10, 1997 Reply Comments at 4. After all these layers of disaggregation in "microgrids," reaggregation in "grids," disaggregation in "subgrids" and "ultimate grids," aggregation of isolated "microgrids" into "ultimate grids," disaggregation into quadrants, and finally reaggregation into square distribution areas, the BCPM's sponsors then make the incredible claim that this "approach provides a reasonable model of the required telecommunications network facilities[.]" BellSouth/Sprint/US WEST September 2, 1997 Comments at 10-12.

The BCPM inflates universal service cost estimates by using unreasonably low fill factors. The BCPM sponsors assume that distribution cables will have an effective input fill of

less than 50%.[13] Clearly, however, an efficient universal service provider certainly would use higher cable sizing fill factors, especially given that cable modularity produces lower actual utilization levels. See AT&T and MCI October 17, 1997 Comments at 13. Indeed, even the significantly higher default values utilized in the HAI Model are likely too low. As explained in the Hatfield Inputs Portfolio, the model's cable sizing algorithm invariably produces effective fill factors that are lower than the input value maximums (in some cases, much lower). Moreover, the HAI Model fill factor inputs reflect the lower fills necessary to accommodate the varying demands for residential second lines (the capacity for which the network owner places without knowing which specific customers will demand multiple lines) and for multiple business lines. Universal service does not include residential second line or multiple business line service and the Commission, therefore, may find it quite appropriate to increase fill factors above the default cable fill factors when estimating universal service costs.

Any one of the three aforementioned BCPM shortcomings would justify rejection of the costs studies filed by Indiana, Montana, Nebraska, North Carolina, Puerto Rico, and South Carolina based on the BCPM.[14] Coupled with the additional cost inflation input adjustments made by these states to the BCPM's default input values -- including excessively long drop lengths, insufficient structure sharing, and inflated overhead costs -- the Commission should not

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[13] For GTE's service territories, Indiana approved replacement of the BCPM default fill factors with GTE's embedded fill factors (or "actual fills"), a step that impermissibly increases universal service costs.

[14] Puerto Rico also submitted a three page "cost study" providing almost none of the requested information. From the scant description that was made available, it is clear that Puerto Rico simply adjusted the BCPM default values until line costs were doubled. Thus, Puerto Rico coupled a flawed model platform with egregious input values to generate whatever cost estimates it desired. The Commission should reject this facially manipulative "cost study."

accept their studies for universal service cost estimation and instead use the Commission's selected cost model. See Section I supra.

III. THE COMPOSITE COST STUDIES SUBMITTED BY ILLINOIS AND MICHIGAN DO NOT COMPORT WITH THE COMMISSION'S UNIVERSAL SERVICE STATE COST STUDY CRITERIA.

Rather than embrace a unified universal service cost estimation framework, Illinois and Michigan proposed a composition of discrete cost models that overestimates and distort the calculation of universal service costs.[15] This smorgasbord approach makes it next to impossible to ascertain to what extent the various cost components are incongruous and double count costs, especially given that in Illinois critical data and documentation underlying GTE's cost studies is not (and has never been made) available. This absence of evidentiary support or any convincing justification that the various cost models do not suffer from the numerous infirmities identified by the parties to the state proceedings is a sufficient basis for the Commission to reject the Michigan and Illinois cost studies.

The deficiencies, however, of the Illinois and Michigan cost studies do not end there. As an initial matter, both studies incorporate one of the worst characteristics of the BCPM -- SCIS. See Section II, supra. Thus, these state studies possess all the failings of SCIS previously discussed, including SCIS' improper reliance on vendor and equipment specific costs that are not fully forward-looking.

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[15] These models and studies include Ameritech Facilities Analysis Model ("AFAM"), SCIS, Economic Cost of Network Services ("ECONS"), Network Cost Analysis Tool ("NCAT"), and Common Channel Signaling Cost Information System ("CCSCIS"). In Illinois, GTE's study is based on COSTMOD reslts whic are disaggregated using the BCPM which is not even in the record there.

Further, at most Ameritech's per line cost estimates can be correct in Michigan or Illinois, but not both. In Michigan, Ameritech was required to compare the results of its USF Model with a Michigan Commission approved network access line study, which disaggregated costs by three Access Areas. The two studies were not consistent, and, in order to conform its cost studies to the Commission's requirement that universal costs be calculated at the wire center level, Ameritech had to use closing factors to ensure that average line costs were the same under the Access Area and wire center methods of disaggregation -- a transformation Ameritech implemented in Michigan, but not Illinois. Consequently, the approaches in the two states are fundamentally inconsistent.

Most likely, the Ameritech cost calculations are incorrect in both states. Ameritech has admitted that an adjustment is required to correct per line universal service costs under its cost estimation method, so the unadjusted Illinois result cannot be correct. At the same time, the Michigan PSC recognized that the closing factor approach Ameritech did use in Michigan was obviously wrong as well:

> The Commission is concerned with the existence and use of closing factors, but that concern must be tempered with the realization that the FCC's new FLEC study filing deadline provides little time for a comprehensive recalculation of Ameritech Michigan's FLECs. . . The Commission therefore concludes, despite the shortcomings, that the use of Ameritech Michigan's closing factors for this case is reasonable and will be permitted. The Commission, however, puts Ameritech Michigan on notice that its future biennial TSLRIC studies must not incorporate closing factors or any similar approach.

"Opinion and Order," Case No. U-11635 at 9 (Michigan PSC May 11, 1998). The basic problem with the closing factor approach Ameritech used in Michigan is that the closing factors make the same proportional adjustments to per line costs at each wire center even though the distortion created through the transformation from Access Areas to wire centers does not produce the same

degree of cost estimation error at each wire center. To the extent that the Commission determines universal service support requirements, this uniform application of closing factors may call for universal service subsidies at wire centers where none is actually needed.[16]

In addition, Ameritech Michigan made numerous other errors including the use of inefficient Universal Digital Loop Carrier, misplacement of the serving area interface, reliance on data from other states and exchanges, and overestimation of the use of aerial cable, improperly determines cable vintages, and uses non-forward-looking fill factors. Nevertheless, Michigan and Illinois chose to rely on Ameritech's cost studies.

The GTE Illinois study was no better. GTE's COSTMOD, the model submitted by Illinois, is not designed to deaverage at the wire center level, as the Commission's criteria require. Moreover, GTE never submitted COSTMOD in Illinois (and, indeed, opposed its use). Thus, GTE never made COSTMOD or its supporting documentation available to the parties for examination. COSTMOD could not be examined or its results confirmed. Clearly GTE's failure to produce the relevant data and model contravenes the Commission's mandate that cost studies be open and verifiable. Illinois -- fully aware of these and other shortcomings -- still embraced GTE's cost study, rather than "default" to the FCC's selected cost model. And because the GTE Illinois cost estimation approach is totally different than the Ameritech Illinois cost method, the cost studies are inconsistent with one another as well as inconsistent with the Commission's requirements.

Finally, Michigan and Illinois explicitly include embedded costs. In particular, Ameritech's

[16] As AT&T has repeatedly demonstrated to the Commission, universal service subsidies should be calculated at the study area level to reduce inefficient oversubsidization of some carriers.

existing mix of switches and mix of aerial, buried, and underground cable facilities is used rather than the forward-looking, optimal configuration that would be deployed by an efficient carrier today. And the Michigan and Illinois cost studies fail to optimize embedded feeder routes and feeder cable lengths.

By any measure, the Michigan and Illinois cost studies fail to satisfy the Commission's criteria that they: employ the least cost, most efficient technology for universal service; treat all costs as variable and avoidable; include a reasonable allocation of joint and common costs; and, use open and verifiable algorithms and data.

CONCLUSION

For the foregoing reasons, the Commission should: (i) direct Hawaii, Kentucky, Louisiana, and Minnesota to revise the inputs they used in the HAI Model if they desire their model to be accepted by the Commission, consistent with the foregoing, and (ii) direct Illinois, Indiana, Michigan, Montana, Nebraska, North Carolina, Puerto Rico, and South Carolina to perform new cost studies that comport with the Commission's universal service cost study criteria if they desire their model to be accepted by the Commission or, in the alternative, use the model chosen by the FCC.

Respectfully submitted,

AT&T CORP.

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June 25, 1998

CERTIFICATE OF SERVICE

I, Scott M. Bohannon, do hereby certify that on this 25th day of June, 1998, I caused a copy of the foregoing Comments of AT&T Corp. on State Universal Service Cost Studies to be served upon each of the parties listed on the attached Service List by U.S. First Class mail, postage prepaid.

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