

Appendix 2

CORRESPONDENCE FROM US WEST AND ETI RESPONSE

U S WEST, Inc.
7800 East Orchard Road, Suite 490
Englewood, Colorado 80111

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Attorney
Intellectual Property Law Group
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USWEST

26 April 1996

(Return Receipt Requested)

Lee Selwyn
Economics and Technology, Inc.
One Washington Mall
Boston, MA 02108

RE: COPYRIGHT LICENSE TO BENCHMARK COST MODEL

Mr. Selwyn:

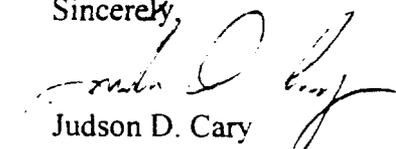
The Joint Sponsors (MCI, NYNEX, Sprint, and U S WEST) of the Benchmark Cost Model computer program (BCM) jointly developed and own all rights in the BCM. A limited license to *use* the BCM was granted to Economics and Technology, Inc. (ETI) under the terms and conditions of a software license agreement (a blank copy is attached). The software license agreement specifically reserves all other rights in the BCM, including the right to modify the program.

It has recently come to our attention that ETI published a report titled "The Cost of Universal Service: A Critical Assessment of the Benchmark Cost Model" dated April 1996 (see attached excerpt). In the report ETI states on page 112, footnote 166, that "The Main Logic Sheet of the Loop Module where the copper/fiber crossover algorithm is found is password protected. *We were able to overcome this restriction.*" (emphasis added). Such modification to the BCM is strictly forbidden under the terms and conditions of the license agreement.

Therefore, we request that all modifications to the BCM be delivered to U S WEST or certified destroyed. We also request written assurances of such delivery or destruction, and further written assurances that ETI will adhere to the terms and conditions of the BCM software license agreement.

If you would like to discuss this matter further, please contact me. I look forward to your prompt written response.

Sincerely,


Judson D. Cary

enclosures: excerpt of "The Cost of Universal Service: A Critical Assessment of the
Benchmark Cost Model"
Benchmark Cost Model Order Form and Software License



THE COST OF UNIVERSAL SERVICE

A Critical Assessment of the Benchmark Cost Model

Susan M. Baldwin
Lee L. Selwyn

April 1996



ECONOMICS AND TECHNOLOGY, INC.

ONE WASHINGTON MALL • BOSTON, MASSACHUSETTS 02108

PostNet® Fax Note	7571	Date	4-24-96	# of pages	3
To	JUD CARY	From	PETER COPELAND		
Co./Dept.		Co.			
Phone #	796-6027	Phone #	896-4620		
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An Overview of the BCM

concur and believe feasible, have indicated their intent to correct the BCM accordingly.⁷⁵ Finally, because all of the algorithms, inputs, and formulas that are in the full model are also in the demonstration model, many of the attributes of the model can be readily evaluated through use of the demonstration model alone.⁷⁶

ETI
Acknowledges
password
protection
& confirms
with Joint
Sponsors

There is, however, one significant aspect of the BCM that belies its characterization as an "open" model and that frustrates efforts at pursuing a comprehensive and objective analysis. The Main Logic, Shared Allocation, Costing, and Output sheets of the Loop Module are password protected and cannot be adjusted by the user.⁷⁷ The Loop Module, as described above, is perhaps the most important of the BCM's three separate modules as it assigns plant types and costs to the outside plant portion of the network. Among the types of analyses that cannot be readily performed because of the password protection are the following:

- Adjustment of the 12,000 foot crossover point for the deployment of copper or fiber feeder plant.
- Alteration of the allocation of plant and structure costs among CBGs in the same quadrant.
- Adjustment of the plant costs associated with different size cables of all plant types.

Cable
costs
can be
adjusted

The overall credibility of the BCM is diminished by the Joint Sponsors' decision to "lock" these aspects of the model and to prevent their modification by other users. As we discuss below in Chapter 6, preliminary efforts to modify one of these three "locked" parameters — the copper/fiber crossover point — suggests that the BCM has adopted a fundamentally uneconomic decision rule that appears to result in a significant overstatement of the costs that are required by LECs to furnish primary residential access lines.

75. *Ex parte* submission in CC Docket No. 80-286 by Glenn Brown, Executive Director—Public Policy, US West (" *Ex parte* submission"), January 26, 1996. *Ex parte* submission, February 21, 1996.

76. The difference between the demonstration model and the full model is simply the size of the database, which, in turn, affects the hardware required to run the model. The "Demo" can be run on an ordinary personal computer, where as the full model requires substantial computer requirements. The full model is designed for use with up to 600,000 CBG input records while the demonstration model includes space for only 50 CBGs.

77. The Joint Sponsors consider the password proprietary to the developers of the model and thus will not divulge it to others. Conversations with Mark Bryant, MCL, March 27, 1996; Peter Copeland, US West, April 1, 1996.

An Examination of Outside Plant Costs

the same household density, the first would be assigned a 2,000 foot fiber main feeder segment while the latter would be assigned a 10,000 foot copper main feeder segment.

We tested the implicit assumption that a 12,000 foot total distribution distance represents an economic crossover point for copper and fiber main feeder and determined through two different types of analyses that the BCM's 12,000 foot crossover point as presently constructed does not deploy the most cost effective network configuration. First, we ran the entire BCM using Washington State data and various crossover points for copper and fiber feeder plant.¹⁶⁶ Without altering any of the BCM's other user inputs we decreased the copper/fiber crossover point from 12,000 feet to 9,000 feet. Not surprisingly, this change resulted in an increase in the statewide average monthly cost from the default level of \$16.94 to \$17.84. We then increased the copper/fiber crossover point to 15,000 feet, again leaving all other user inputs and algorithms unchanged, and found that the statewide average monthly cost for Washington State decreased by \$0.72 per month to \$16.22. As illustrated in Table 6.5 below, the average monthly cost continued to decline as we increased the copper/fiber crossover point successively from 15,000 feet to 18,000 feet, to 21,000 feet, and finally to 24,000 feet. This analysis proves that on a statewide basis, the BCM's 12,000 foot copper/fiber crossover point, when used with the Joint Sponsors' default per line costs for SLC and AFC electronics of \$500 and \$550 (with the BCM's assumed discounts) does not lead to the most efficient network possible. Thus, the algorithm and the cost input data are contradictory: Our analysis shows that, if the cost data that the BCM assumes are realistic then the BCM's copper/fiber trade-off decision is uneconomic. Alternatively, if, for the sake of argument, the BCM's algorithm for the copper/fiber trade-off decision is "correct" then clearly the cost data are wrong.

These changes have been made in isolation of the change in Copper plant that would be necessary to the network to function. Obviously lower gauge cable is necessary, range extenders or copper carrier systems are needed to move the cross fiber cross-overs to these distances.

166. The Main Logic Sheet of the Loop Module where the copper/fiber crossover algorithm is found, is password protected. We were able to overcome this restriction.

In this a breach of the license agreement.



**Benchmark Cost Model Order Form
and Software License**

Name: _____ Company: _____
Address: _____
Telephone: _____ Fax: _____
P.O. No.: _____

The above-identified parties ("Parties") hereby acknowledge receipt of one copy of the Benchmark Cost Model. The Parties agree that the charge for the Benchmark Cost Model is \$100 (to cover production costs) to be billed at a later date.

The Joint Sponsors (MCI, NYNEX, Sprint, and U S WEST) of the Benchmark Cost Model hereby grant to the Parties a nonexclusive license to use the Benchmark Cost Model and its results. All other rights in the Benchmark Cost Model shall remain the property of the Joint Sponsors. No right to copy, reproduce, modify, prepare derivative works, sub-license, or sell the Benchmark Cost Model is granted. No maintenance, support, repairs, or fixes associated with the Benchmark Cost Model are provided.

THE BENCHMARK COST MODEL IS PROVIDED "AS IS." THERE ARE NO WARRANTIES EXPRESS OR IMPLIED INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE JOINT SPONSORS SPECIFICALLY DO NOT WARRANT THAT THE BENCHMARK COST MODEL OR ITS RESULTS WILL BE ERROR-FREE. THE JOINT SPONSORS ARE NOT LIABLE FOR ANY CONSEQUENTIAL, INCIDENTAL, INDIRECT OR SPECIAL DAMAGES INCLUDING COMMERCIAL LOSS, HOWEVER CAUSED AND REGARDLESS OF LEGAL THEORY OR FORESEEABILITY, WHICH DIRECTLY OR INDIRECTLY ARISE FROM THE USE OF THE BENCHMARK COST MODEL.

Agreed:

Signature

Print Name

* Benchmark Cost Model program © 1995, NYNEX, MCI, Sprint, U S WEST



ECONOMICS AND TECHNOLOGY, INC.

LEE L. SELWYN
PRESIDENT

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May 8, 1996

Judson D. Cary, Attorney
Intellectual Property Law Group
US West, Inc.
7800 East Orchard Road, Suite 490
Englewood, Colorado 80111

Dear Mr. Cary:

We are in receipt of your letter dated April 26, 1996, in which you accuse ETI of having "modified" the Benchmark Cost Model (BCM) of which US West was one of four (4) Joint Sponsors, and demand that "all such modifications to the BCM be delivered to US West or certified destroyed."

ETI has not "modified" the BCM as you allege. We have conducted certain sensitivity analyses in the course of examining the BCM as part of our work for the National Cable Television Association (NCTA) in connection with the Federal Communications Commission's *Notice of Proposed Rule Making* in CC Docket 96-45. The work was done explicitly and for the limited purpose of testing the BCM and the validity of its quantitative inputs and underlying engineering and economic assumptions. Such an analysis was expressly requested by the FCC in the NPRM (at para. 31), and was invited by the Joint Sponsors themselves (including US West) when the BCM was issued in September, 1995. The nature of our sensitivity analyses is more fully described in the attached report that we have prepared for the NCTA and that is this date being submitted to the FCC. Please be aware that we are in that report advising the FCC of this attempt by US West to intimidate us into limiting the scope and extent of our examination and in so doing deny the FCC information as to a critical flaw in the BCM with potentially serious financial consequences for non-incumbent local exchange carriers and other telecommunications providers.

Sincerely,

cc: William F. Caton, Acting Secretary, FCC

**THE MAGNITUDE OF
THE UNIVERSAL SERVICE
FUNDING REQUIREMENT**

Statement of Lee L. Selwyn

to the Federal-State Joint Board
on Universal Service

CC Docket 96-45

"Cost of Support for Rural,
Insular, and High Cost Areas
and for Low-income Consumers"

June 5, 1996



ECONOMICS AND TECHNOLOGY, INC.

ONE WASHINGTON MALL • BOSTON, MASSACHUSETTS 02108

THE MAGNITUDE OF THE UNIVERSAL SERVICE FUNDING REQUIREMENT

Statement of
Lee L. Selwyn
before the
Joint Board on Universal Service

CC Docket No. 96-45

June 5, 1996

Thank you for inviting me to speak today about high cost assistance and the Benchmark Cost Model (BCM). I have been asked to direct my comments this afternoon specifically toward quantifying the potential need for high cost assistance. Economics and Technology, Inc. (ETI) has analyzed the BCM on behalf of the National Cable Television Association (NCTA). From this undertaking, we believe that, with corrections, the BCM may contribute toward the dual goal of identifying high cost areas and estimating the possible need for high cost support. My remarks today are based upon that analysis.

ETI's Partial Corrections to the BCM

Using the BCM's Washington State input data,¹ ETI analyzed the implications of correcting several assumptions, variables and algorithms that had been incorporated in the

1. We considered Washington State to be representative of a broad spectrum of cost conditions across the country while affording a manageable size for BCM analysis. Although our specific findings are based upon the Washington State analysis, it is our belief that the national extrapolations we have developed are reasonable order-of-magnitude estimates of nationwide conditions. We specifically recommend that a full national run of the BCM be undertaken to incorporate all of the corrections that we have identified.

BCM. ETI then reran the BCM with specific corrections in order to better simulate a proxy network that is designed to efficiently provide one exchange access line to each household.

ETI identified a series of specific deficiencies in the BCM, and was able to correct a number of them:

- The BCM's implausibly high per-line switch cost of \$238.87 and common processor cost of \$647,526² was replaced by a per-line switch cost of \$167.³
- The BCM's default objective distribution and feeder fill factors are inappropriately low for the purpose of modelling the capacity needed to meet the highly stable and predictable demand associated with basic residential, primary line access to the telecommunications network. Objective distribution and feeder fill factors were therefore increased to 95% for all household density zones.
- The BCM incorrectly assumes a linear relationship between structure costs and cable size. ETI made a correction to the distribution structure multiplier in rural areas to address this deficiency.
- As with outside plant utilization (fill) factors, the BCM employs inappropriately low objective fill ratios for digital loop subscriber line carrier equipment. These fill factors were increased from 80% to 95%.
- The BCM understates aggregate cost and support requirements by failing to reflect the fact that not all households subscribe to telephone service. Those that do not subscribe necessarily are not making any payment for telephone service, yet the goal of universal service requires the network to be configured to be ready to serve them. We divided the average cost per line by 0.960 (the subscribership rate in Washington State) to correct this understatement.

2. Because ETI zeroed out the common processor cost, the following BCM factors became mathematically irrelevant: the 79% allocation of the common switch costs (which represents the BCM's assumed allocation of non-traffic-sensitive and traffic-sensitive switch costs to local exchange service) and the 1.75 business gross up factor (which the BCM uses to compute the allocation of common switch costs for each line).

3. This figure is based upon an analysis of Pacific Bell plant additions to the digital switch asset account and to growth in digital access line capacity in California.

Also, the BCM Joint Sponsors submitted results that reflect two cost factors — an embedded cost factor and a forward-looking cost factor.⁴ ETI's results are based upon the forward-looking cost factor, which is the valid and appropriate basis for computing the cost of basic residential local exchange service on a going-forward basis. The only purpose of an embedded cost factor is to identify *historic* sunk costs (so-called "legacy costs") that some ILECs claim that they are entitled to recover. The matter of any such entitlement is not germane or even relevant to a discussion of the forward-looking universal service support requirements. If and to the extent that the Commission determines that the historic cost recovery issue is to be examined, such an investigation is appropriately pursued, and responsibility (if any) assigned, in a separate proceeding.

Aggregate effect of correcting the BCM

The following table summarizes the results of running the BCM with the partial corrections discussed above (and in more detail in the ETI Report).

Table 1			
The BCM Overstates the USF Requirement Washington State			
	BCM	ETI Partially Corrected BCM	Percent Difference
Average Monthly Cost	\$16.94	\$12.58	(26%)
Total USF Requirement (Annual)	\$50,692,630	\$17,429,545	(66%)
Notes: USF Requirement figures reflect a price threshold of \$30 per month and a cost factor of 22.97%. The BCM does not include an adjustment for subscribership rate. See Appendix 8B of the ETI Report.			

- Based upon a price threshold of \$30, ETI's partial corrections reduce the USF requirement by approximately two-thirds relative to the BCM's default results.

4. The forward looking cost factor of 22.97%, "Cost Factor 2", is more appropriate for use in a forward looking cost proxy model and was used rather than the historical "Cost Factor 1."

Table 2			
Comparative Summary Results of the BCM and the ETI Partially Corrected BCM Washington State			
	BCM	ETI Partial Corrections	Percent Difference
Annual Benchmark Cost	\$380,427,268	\$282,552,902	(26%)
Support at \$20	\$77,846,835	\$29,230,056	(62%)
Support at \$30	\$50,692,630	\$17,429,545	(66%)
Support at \$40	\$37,662,589	\$11,430,572	(70%)
Average Monthly Cost	\$16.94	\$12.58	(26%)
Notes: ETI partial corrections are listed in Appendix 8B of the ETI Report.			

- Table 2 displays the effect of ETI's partial corrections for the three universal service support levels that are modelled by the BCM, as well as for average monthly cost data.
- Depending upon the support threshold level, ETI's corrections show a requirement for universal service support of 62% to 70% less than that computed by the uncorrected model.

ETI ran the BCM with our partial corrections for the entire state of Washington, which entailed rerunning computations for approximately 4542 CBGs. Our data for Washington State are based upon actual runs of the BCM. We also extrapolated from our Washington results to nationwide results and believe that these national numbers represent reasonable "ballpark" figures. We recommend, however, that the BCM be run with ETI's corrections separately for each jurisdiction. Table 3 summarizes national results.

Table 3		
Comparative Summary Results of the BCM and the ETI Partially Corrected BCM National Total (excluding Alaska)		
	BCM	ETI Partial Corrections
Annual Benchmark Cost	\$18,402,608,162	\$4,784,678,122
Support at \$20	\$3,977,572,193	\$1,511,477,433
Support at \$30	\$2,203,441,910	\$749,170,249
Support at \$40	\$1,372,205,121	\$411,661,536
Average Monthly Cost	\$16.71	\$12.37
Note: Adjustment factors based upon a comparison of BCM and ETI results for Washington are used to create national ETI results.		

- Due to the time constraints associated with running the BCM for the entire country, we examined the ratios of the ETI results to the BCM results for Washington State in order to develop very approximate "national adjustment factors."

ETI Partial Corrections in Perspective

The results of our corrections yield cost data that represent *upper* bounds to the cost that would result if it were feasible to implement all of the corrections that ETI identified. The partially corrected average cost of \$12.58 per month⁵ for the State of Washington should be reduced further for the following reasons:⁶

- The BCM does not make the copper/fiber crossover decision in an economic manner, but instead assigns fiber costs in certain situations where copper would be less expensive.

5. See Appendix 8B.

6. The BCM does not yet include the SAI (which likely would lead to an increase of less than a half-dollar).

The Magnitude of the Universal Service Funding Requirement

- The assumption of uniform density within a CBG is incorrect and results in an overstatement of the cost of serving the average customer within each CBG.
- We made no correction for the inflated digital subscriber line carrier equipment costs nor the correspondingly low manufacturer discounts that were assumed in the BCM.

Moreover, the amount of universal service requirement is overstated for the following reasons:

- The model does not reflect fully the economies of scale and scope associated with ILEC networks.
- The aggregate USF requirements are based upon average costs in each CBG that, because ETI was only able to implement partial corrections, are still too high.
- After the BCM completes its computation of CBG costs, it should then aggregate these results to the wire center level before the need for universal service support is evaluated. Because the method in the BCM is to assess universal service requirements at the CBG level, the final results of the BCM are overstated.⁷

The BCM should also be modified to *include* network costs that are omitted, such as the Serving Area Interface. The BCM, *if corrected*, represents a valuable tool for computing high cost requirements throughout the country. When this high cost support requirement is then considered together with targeted low-income and TRS support requirements, the FCC and state PUCs will have met the objective of identifying *all* universal service support needed for ensuring the availability of affordable basic residential telephone service.

7. Determination of costs at the CBG level provides unduly granular and often anomalous results, particularly in urbanized areas. For example, upscale suburban CBGs with relatively low housing density may appear to be "high cost" areas even though the overall wire center serving area exhibits below-average costs. In urbanized areas, wire centers are sited to minimize overall costs, and disaggregation at the CBG level may unduly and inappropriately benefit or burden individual portions of the overall wire center serving area.

Federal/State Joint Board Presentation
Dennis Weller - Senior Economist
GTE Telephone Operations
June 5, 1996

Universal Service: Time for a New Support Mechanism

Good afternoon. Thanks very much for the opportunity to participate in this discussion.

A. Universal Service support policy objectives

The challenge for this Joint Board is to restructure existing support systems into a new universal service support mechanism which is compatible with competition, provides support explicitly where needed to ensure affordable service, and results in offsetting rate decreases in services that now shoulder the brunt of the support burden.

B. Total cost of a new universal service support mechanism

The current total cost of funding universal service is composed of two components: *implicit* support in existing rates of local exchange carriers (LECs) and a form of *explicit* support in the Universal Service Fund (USF), Lifeline and Link Up America programs. Many have debated about how much funding is being generated through the current support systems. This panel is here to discuss how big the new support fund needs to be. The answer is simple — the total support need not be any larger than it is today — nor should it be any smaller.

Our observation is that the size of a new universal service support fund will depend on several factors recommended by this Joint Board: the “affordable” rate level, components of a basic service package, any other regulatory requirements, and the cost of service.

C. Implementing a new Universal Service support mechanism

The Joint Board can initiate a three-step program to wring out implicit support levels in current rates and transition to a new universal service support mechanism that meets the requirements of the Telecom Act of 1996.

1. Convert existing implicit and explicit support to a competitively-neutral explicit funding mechanism. This funding mechanism should be a surcharge on the revenues for retail telecommunications services, both state and interstate. This will provide the largest possible funding base, the lowest possible rate for the surcharge, and result in the least distortion in market behavior.
2. Reduce existing rates on a revenue-neutral basis. To ensure that the new mechanism is revenue neutral and does not provide a windfall to LECs, any new support must be applied toward reductions in rates for services that provide implicit support today. This process of rate re-balancing must occur simultaneously with implementation of a new universal service support mechanism. These rates will be distorted if the fund is either too large or too small.

3. Make support available to any carrier willing to assume universal service obligations. Such a carrier must be willing to become a "carrier of last resort" (COLR) and provide "core" services to all consumers in a supported area at a rate, established by the state, that meets affordability guidelines recommended by the Joint Board. The initial level of support would be measured by the difference between any rate ceiling imposed and the rate the COLR would otherwise set in a competitive market. For starting purposes, this market rate should be estimated using a proxy model. While much useful work has been done, none of the existing proxy models has yet been developed to the point where it would be suitable for use in a new plan. Once other carriers enter a given market, and are willing to become COLRs subject to an identical set of requirements, then a competitive bidding process should replace the cost-based comparison to determine the actual market-based support amount.

This three-step program will result in a total amount of universal service support that is no higher than exists today for comparable services. GTE believes that by adding an auction mechanism to determine which carriers get what level of universal service support, the overall cost of universal service will be bid down over time as market forces and technology advances take effect.

D. Structure of a Universal Service support mechanism

The Joint Board must design a universal service support mechanism to reconcile "affordable rates" — as determined by the states and the Joint Board — with what the rate levels otherwise would be in a competitive market. This allows each party to the local service transaction to see a different rate. The customer sees the "affordable" rate. The carrier sees the market rate - the sum of the affordable rate and the support. This is necessary, not only to compensate existing COLRs correctly, but also to send accurate price signals for market entry. This local price will be distorted if the fund is either too large or too small.

The plan should define carrier obligations so that existing carriers and new entrants can determine whether they want to be eligible for universal service support. States would set these obligations under guidelines established in the Federal plan. These would include:

1. Specific service package. (the more elaborate, the more expensive it will be).
2. Service territory and area for calculating support - which need not be the same. (small areas, such as Census Block Groups, can limit uneconomic averaging consequences, provide a greater degree of targeting, and match competitive market realities).
3. The affordable rate required by the state. (what are the permitted charges to residential subscribers for the core package, but not including Lifeline/individual support). The Federal plan could also establish a benchmark above which Federal funds would be provided.
4. Clear set of obligations to be applied equally to all carriers that receive funding (must act as COLR, meet quality standards, provide specific period of service as COLR).

Support would be provided to eligible carriers on a per-customer basis in each market area.

E. Competitive bidding process

The Joint Board should recommend a competitive bidding process to determine which carriers can become COLRs and receive universal service support. It would provide a market-based mechanism for measuring the value of the market intervention the COLR obligation represents.

GTE, with its consultants, is developing specific auction mechanics that we will share with the Joint Board as soon as possible. The proposal will be designed to:

1. Bid down the level of support required.
2. Promote aggressive bidding through activity rules and a possible winner's preference.
3. Accommodate multiple winners.
4. Be administered efficiently.

F. Benefits of Auctions

A properly-structured auction mechanism would efficiently harness market forces and deliver the following public policy benefits:

1. Reveals true costs — what firms' actual cost expectations are, what they're willing to do rather than what they are willing to say.
2. Drives support down at initial auction and when a market is re-bid, thus minimizing cost to society.
3. Captures all relevant factors for bidders' consideration, without regulators having to anticipate them and specify them in detail.
4. Will automatically adapt over time to:
 - ◆ changes in basic service packages
 - ◆ changes in cost
 - ◆ new technology
5. Transforms existing universal service funding from a sometimes arbitrary and adversarial administrative procedure to a process determined by competitive market activity.

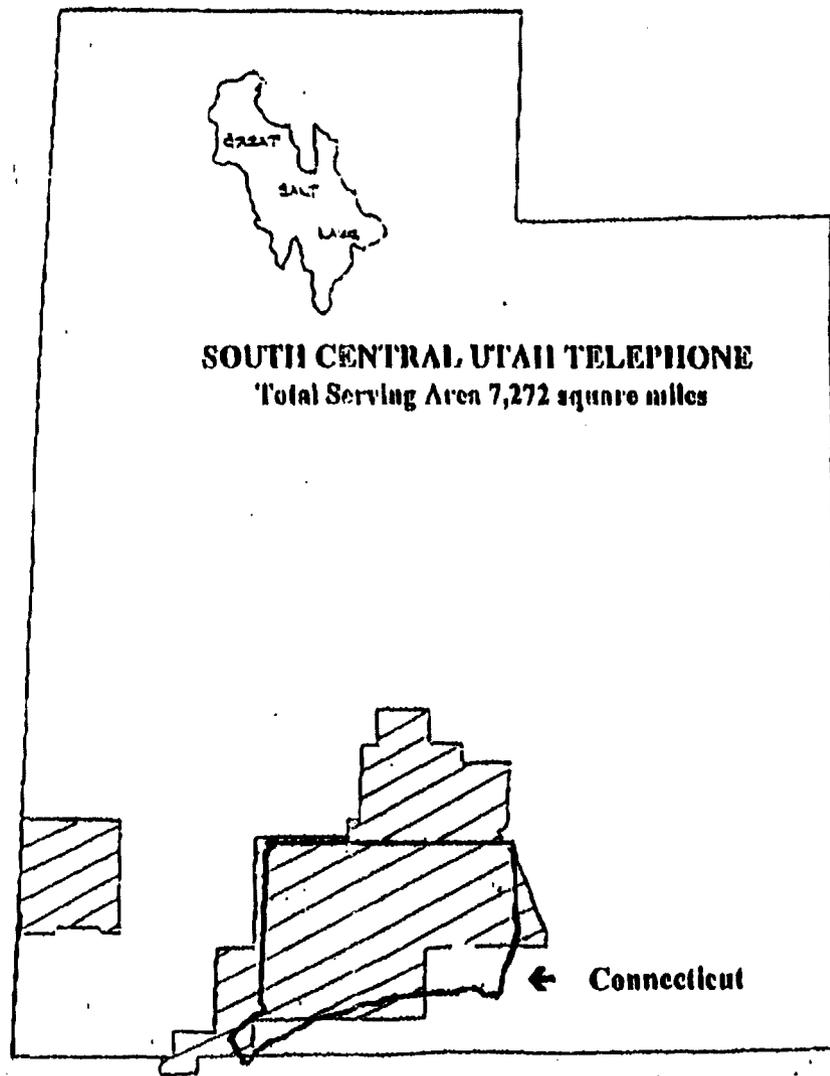
No market is ever perfect, nor will the auction process be. But I believe that a market mechanism, even if imperfect, will be superior to the alternative of a cost-based approach. In the California proceeding which has consumed a great deal of effort over the past few months, we have now managed to focus our cost-based estimate of the fund into a narrow range. It's somewhere between zero and 1.7 billion dollars. This should teach us not to think of a proxy cost model as a precision tool. When the PCS auction was established, there was much debate

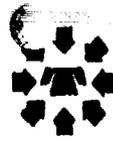
over its design, and the design which was adopted certainly was imperfect. Ex Post, however, it is also a great success, and clearly better than the administrative process it replaced.

In summary, GTE's universal service proposal is a flexible approach that would base the initial level of support on a cost proxy. Bidding would be introduced in each area as competitors enter at their own initiative and nominate areas for bidding. The plan permits the use of small market areas to encourage entry, yet is reasonable to administer because it would group all areas nominated in a given year within pre-announced bidding cycles. We strongly urge the Joint Board to entertain GTE's universal service proposal among its recommendations to the Commission.



DENSITY EXAMPLE





Presentation to the Federal-State Joint Board - CC Docket #96-45

June 5, 1996

Bob Schoonmaker - VP
GVNW Inc./Management



Density-Company Comparison

	South Central <u>Utah Telco</u>	<u>Connecticut</u>
Square Miles	7,272	5,544
Loops	5,941	1,856,765
Loops/Sq. Mile	0.8	334.9



Density-US Examples

	U.S.	Wyoming	Montana	Wash, D.C.
Sq. Miles	3,787,420	97,818	147,043	68
Loops	148,190,420	255,918	443,836	838,869
Loops/Sq. Mile	42.5	2.6	3.0	12,336.0
USF Loop Cost	\$242.95	\$361.79	\$304.00	\$76.13

Sources: Rand McNally, NECA USF Submission



Local calling areas and rates

Missouri Examples - 1986

	Average Flat Rate	Wgtd. Average Calling Area
Alma	\$6.50	327
Wheeling	\$10.25	350
Southwestern Bell	\$11.64	355,302



Local & IntraLATA Toll Calling

Missouri Example - 1986

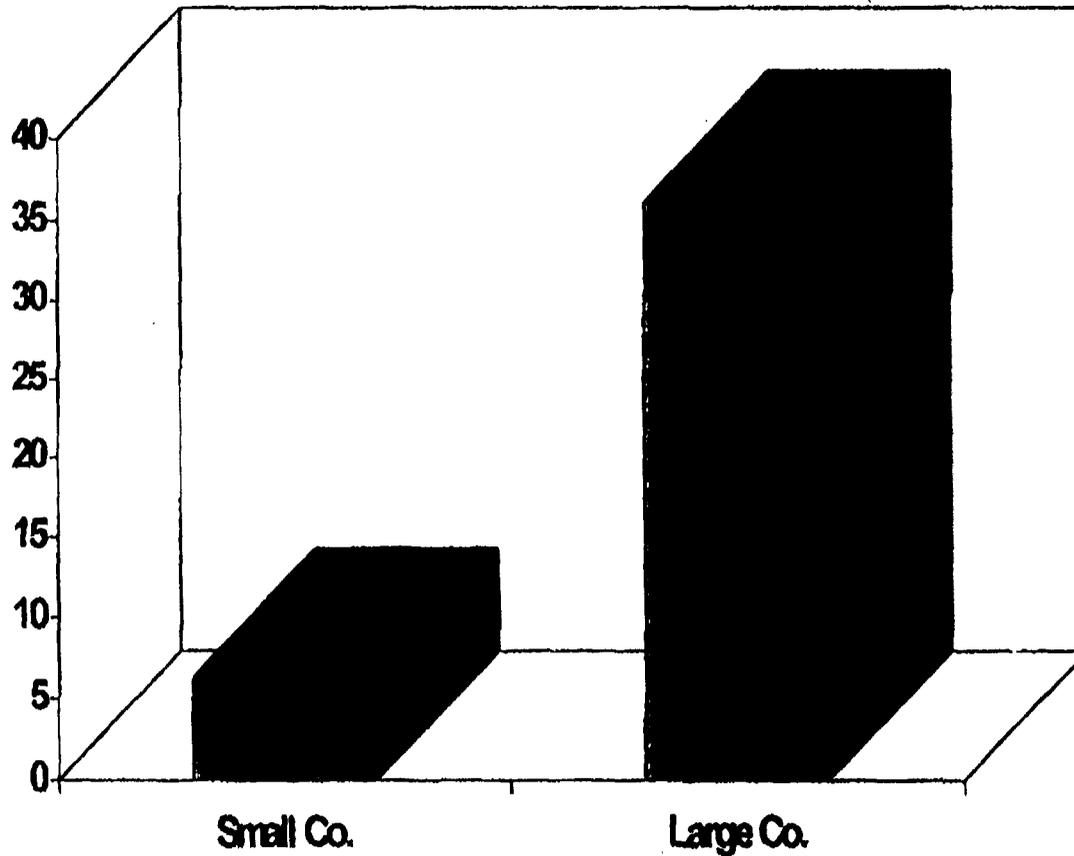
Company	Avg. Res. Local Rate	Avg. Res. IntraLATA
Holway	\$16.10	\$31.11
Le-Ru	14.65	29.76
Wheeling	10.25	25.36
Chariton Valley	6.55	21.66
Alma	6.50	21.61
Grand River	6.21	21.32
Farber	3.54	18.65
Orchard Farm	3.00	18.11
New London	2.90	18.01
Southwestern Bell	11.64	17.94

JUN 3 1986 4:53 FROM GUNW - CO

TO 12024101392--694 PAGE.007/023



Subscribers/Mile of Cable



6.3

36.1

Small Co.-RUS data
Lg Co. - FCC Stats