DOCKET FILE COPY ORIGINAL

EX PARTE OR LATE FILED

AT&T

Suite 1000
1120 20th Street N.W.
Washington, DC 20036
202 457-3810

June 11, 1997

RECEIVED
JUN 1 1 1997
Federal Communications Commission
Office of Secretary

Mr. William F. Caton
Secretary
Federal Communications Commission
1919 M. St., NW, Room 222
Washington, D.C. 20554

RE: Ex Parte Presentation
Universal Service: CC Docket No. 96-45

Dear Mr. Caton,

Today, Chris Frentrup of MCI and I met with Ken Moran of the Accounting and Audits Division of the Common Carrier Bureau. The purpose of this meeting was to discuss the major drivers of the cost differences between local networks engineered by Hatfield and by BCPM. This included both differences between the models' engineering logic and differences in their default input parameter values. A copy of the materials presented at this meeting is attached.

Two copies of this Notice are being submitted to the Secretary of the FCC in accordance with Section 1.1206(a)(1) of the Commission's rules.

Sincerely,

Richard N. Clarke

Attachment

cc: Ken Moran

No. of Copies rec'd 0+2
List ABCDE

Why the *Hatfield Model, v3.1* is the Superior Proxy Model Tool

This memo presents several criteria that should form the basis for selecting one proxy model over another for the purposes of calculating universal service support obligations, unbundled network element costs, and carrier access and interconnection costs.[1] The memo then discusses how well the Hatfield Model, v3.1 ("HM") and the BCPM Model, v.1.1 ("BCPM") meet these criteria for an effective proxy model tool.

1) Completeness

- **Hatfield**

  The HM models explicitly the entire local network. This includes loops, end office switching, interoffice transport (dedicated/common/direct), tandem switching, SS7 signaling (STPs/links/databases), operator/DA systems, and public telephones. It engineers the local network based on the specific lines/minutes/call types demanded by residence versus business customers.

- **BCPM**

  The BCPM models explicitly only the loop and end office switch portions of the local network. The cost of all other local network elements (e.g., interoffice, tandem switching, signaling, etc.) are assumed to be captured by a 3% additive factor to end office switch investments.[2] Only the demand for lines is modeled, no consideration is given to the number of minutes or types of calls that are demanded by customers. Residence customers are assumed to have identical demand volumes and usage patterns as business customers.

- **Discussion**

  Because the BCPM does not consider the complete local network, the costs that it generates cannot be as useful as those generated by the HM. In

---

[1] In addition to the criteria listed in this memo, there is, of course, the additional criterion of how well the competing models' engineering assumptions meet the specifications for supported universal service outlined by the Joint Board. Because this issue has been addressed at great length in other submissions, it is not discussed here. Suffice it to say that AT&T and MCI believe that the HM engineers far more effectively and efficiently a local network that meets the Joint Board's specifications than does the BCPM.

[2] Not only is BCPM's use of 3% additive factor overly simplistic, but HM calculations demonstrate that it is not correct.

particular, costs for interoffice facilities, tandem switching and signaling may vary greatly among LECs depending on their size in population and in square miles of service area. Furthermore, demands for the above facilities and for end office switching depend importantly on the mix bus/res customers served. Because the BCPM does not take such heterogeneity among different LECs' customer sets or serving areas into account, it is an inferior tool relative to the HM.

2) Data Accuracy

- **Hatfield**

  The HM 3.1 uses a detailed data set developed by PNR from Census Bureau, Claritas and Donnelly to determine the number of residence, business, special access and public telephone lines in each CBG. Information is also collected at the CB level to determine the amount of area in each CBG that is empty. CBGs are associated with wire centers based on an analysis of the NPA-NXXs of the telephone numbers of the business and residence inhabitants of the CBG. Housing unit information is collected to determine instances of high-rise or multi-family development.

- **BCPM**

  BCPM uses the data methodology that Hatfield used in its earlier v2.2.2 release. This cruder methodology assumes no variation across CBGs in a state as to residence telephone penetration or in telephone lines per business employee. The BCPM associates a CBG with a wire center based entirely on the geographical location of the CBG's centroid relative to certain wire center boundary maps.

- **Discussion**

  The HM 3.1 data, which incorporate over 90 million records of geo-coded customer locations and telephone numbers, locate far more precisely customer demand. In addition wire center assignments are based on actual counts of the relative number of lines in the CBG served by a particular wire center. In contrast, the BCPM assumes that a CBG's geographical centroid location determines completely its wire center assignment.

3) Consistency

- **Hatfield**

  The HM calculates costs consistently for all uses of the local network (e.g., basic/universal service, toll service, unbundled network elements, carrier access, carrier interconnection). In addition, because the HM permits a granular definition of customer demand (e.g., bus/res, minutes, call attempts, call type, etc.) the effects of varying these demand patterns on network costs

can be evaluated. Together, these characteristics assure that all scale and scope economies are properly accounted for, and that costs are properly associated with the causing service.

- **BCPM**

  Because the BCPM does not compute the cost of the complete local exchange network, and because the model's sponsors have chosen to design the model only to report costs at aggregated levels (e.g., basic local service) and not by network element (e.g., NID, loop distribution, loop concentration, loop feeder) it cannot be used to cost items other than basic service. These characteristics impair the usefulness of the BCPM.

- **Discussion**

  Because the HM is a complete and granular model, its usefulness is multiplied. It may be used by policy makers to evaluate the cost effects of various different uses of the local network, and may be used to evaluate the effects of other changes in customer demand such as increased Internet usage, toll calling or 800 calling. Results from the BCPM, because they are reported only at an incomplete and aggregate level, are far less useful.

4) Flexibility

- **Hatfield**

  The HM contains 660 user-adjustable input variables that cover the complete specification of the model. Because these variables define not only input prices and customer demand characteristics, but also certain key engineering specifications, the HM can model the full range of characteristics and situations that may face U.S. LECs. This level of flexibility is demonstrated by the HM's capability to be specified to match the input prices, engineering logic, and output costs of the BCPM. This capability permits a full analysis of the cost drivers in the model.

- **BCPM**

  While the BCPM also permits user-specification of a large number of inputs, certain key variables and engineering practices are hard-wired into the model and cannot be adjusted by the user. No characteristics of customers beyond the number of lines they demand can be input or adjusted. In particular, no user adjustment is possible within the BCPM to account for customer location clustering. In addition, BCPM has not demonstrated any capability to be specified to match the input prices, engineering logic, or output cost of the HM.

- **Discussion**

  Because so many crucial parameters that define local network costs (e.g., drop wire length, customer clustering, etc.) are not adjustable within the BCPM, it

cannot be manipulated sufficiently by policy makers either to correct errors that are discovered or to perform sensitivity studies to determine its significant cost drivers. Given the more rudimentary structure and logic of the BCPM compared with Hatfield, it is doubtful that it could be specified to match the input prices, logic and output costs of the HM.

5) Documentation

- **Hatfield**

  All of the input data used in the HM, its engineering logic and its default input parameter values have been extensively documented in written form. Furthermore, all of the supporting analyses behind the model are open to public view and criticism. The model itself operates in modular form, with voluminous intermediate results produced in readable, user-friendly form for further analyses.

- **BCPM**

  The BCPM has only been documented in part. The only documentation provided for many key pieces of input data is that they were provided to the sponsors by various LEC employees (e.g., "business phone line count per CBG from spreadsheets by John Banks of Sprint, CBG area adjustments from files by Peter Copeland of US West"). These data have not been verified through public inspection. Documentation is also lacking for certain key studies of switching costs and network expenses that are used as inputs to the model. Intermediate results from the BCPM are extremely sketchy, and are not provided to the user in an easily readable fashion.

- **Discussion**

  Because the documentation of the BCPM is so incomplete, it is impossible to really understand how the model operates and what drives its results. Furthermore, this lack of documentation discourages policy maker experimentation with the model. In contrast, the HM is explained in far more detailed fashion, and this permits regulators to gain a greater understanding of its characteristics.

6) Auditability

- **Hatfield**

  All of the input data, engineering logic, calculations and support for the default user-adjustable input parameter values of the HM are completely open to public scrutiny and review. Not only are all intermediate results captured for further analyses, but outputs are reported at an extremely granular level so that costs generated by the model may be compared with other sources of information (e.g., equipment supplier catalogs, regulatory studies of access,

interconnection, switching and local service costs, etc.). The HM has also been submitted in numerous state dockets where it has been subject to discovery, interrogatories and cross-examination by all interested parties.

- **BCPM**

  Key portions of the input data, and support for the BCPM sponsors' default input parameter values are held behind a proprietary veil. Analyses cannot be performed on the study of switching costs that the sponsors' used to populate the model. Similarly inaccessible is the study of "forward-looking" expenses that was used to set the $11.34 per line per month figure that was entered into the model. This is especially worrisome because this unauditable expense figure represents over one third of total monthly costs calculated by the BCPM. In general, the BCPM has been advanced only in the Federal USF proceeding, and has not been open to discovery, interrogatories and cross-examination by interested parties.

- **Discussion**

  The fact that the BCPM sponsors, who are all ILECs, have chosen not to make available for public review all of the input data and support for their default parameter values is distressing. Not only does this prevent regulators and other interested parties from becoming comfortable with the model, but it also raises doubts about the consistency of these model input items with other items of evidence (e.g., contracts, invoices, receipts, studies) that may be in the ILECs' possession. It is also curious that in general, the ILEC sponsors of the BCPM have declined to submit it into the record of the numerous state proceedings where it may be germane, but also subject to extensive discovery.

April 8, 1997