

I. Overview Comparison of the Cost Models

Q. Please turn to the first section of your testimony. For the federal jurisdiction, the FCC is currently trying to decide between Hatfield and BCPM, having rejected an earlier release of your model. Can you explain why the Telecom Model did not survive the FCC's cut?

A. Yes. Version 4.1 of the Telecom Model was one of the three models reviewed by the FCC's Federal-State Joint Board on Universal Service in late 1996 and early 1997 in CC Docket 96-45. The other two models were the Benchmark Proxy Cost Model (BCPM), currently sponsored by U.S. West, Bell South and the local exchange operations of Sprint, and the Hatfield model, sponsored by AT&T and MCI. I will sometimes collectively refer to the latter two models as the "national proxy models."

The Telecom Model was dropped from further consideration, in the FCC's words, "because the proponents have never provided nationwide estimates of universal service support using that model." [FCC 97256, III.A.10.] We still have not prepared such nationwide estimates, since the focus of our modeling efforts is entirely on the state level. Of course, like the national proxy models, the Telecom Model has continued to evolve, and the present release (version 5.1) embodies substantial improvements over earlier versions, especially in regard to the geographic aspects of the network modeling process. However, because of our state-specific orientation we have no reason to model the entire country.

From our cost modeling work in Idaho and half a dozen other states, we know that any such national modeling effort is fraught with difficulty. The geographic and other attributes of each state are sufficiently unique that it is difficult, if not impossible, to develop a single cost study which accurately models every part of every state. This is particularly true for the proponents of the national proxy models, who are attempting to maintain consistency of methodology and data sources and are working within time and budget constraints. As one narrows the focus to individual wire centers within each state, it becomes apparent that the "one size fits all" approach, uniformly applied across

the entire country, involves limitations and compromises which reduce the usefulness and accuracy of the resulting cost estimates.

Unlike the national proxy models, the current version of the Telecom Model utilizes a state-of-the-art geographic information system (GIS) approach. The great advantage of our GIS approach is that it permits very detailed and precise mapping of individual customer locations and of the feeder network connecting customers to the wire center. The accuracy and precision of this part of the modeling process is limited only by the time and resource constraints. Improvements in the geographic modeling process can be readily achieved, if necessary, by gathering additional data and by using human judgment to refine the initial results. Once the basic data have been assembled and analyzed, further adjustments and refinements are possible, in order to improve the accuracy of the cost estimates. However, assembling the GIS data requires working with some very large data sets, even for a small state. As a practical matter, we do not begin assembling GIS data for a state unless we have specific cause to do so.

Q. Isn't the Telecom model like the national proxy models in many ways?

A. Yes. All three models share many general characteristics. All three models provide hundreds of user-adjustable input choices, process these inputs through numerous different algorithms, and generate outputs that can be summarized in one or more reports. They all rely primarily on publicly available data rather than proprietary data, all three models place their core logic, or algorithms, in one or more Excel spreadsheets, and they rely upon Visual Basic to automate various functions. All three models attempt to satisfy the FCC's 10 criteria for acceptable universal service cost models, and they all rely upon the same data sources to identify specific wire centers (locations are taken from Bellcore's LERG data base, and estimates of the approximate wire center boundaries are taken from the same BLR data used by the national proxy models. Finally, to the extent their inputs can be reconciled, their outputs tend to be similar--at least when the results are reported at a high enough level of aggregation (e.g, for an entire state).

Q. If the three models share so many characteristics, does it matter which one the Commission adopts?

A. Yes. While there are many similarities, there are also differences. The models are not equally capable of developing precise cost estimates for specific locations within each state. These differences can translate into different rates or support payments for specific locations within each state. If the cost of providing service in sparsely populated areas is overestimated, due to modeling errors or inappropriate inputs, excessive levels of support may be provided, which may encourage uneconomic entry and bloat the size of the universal service fund. Conversely, if costs and support levels are set too low, this could create a barrier to entry that will discourage investment by competitive carriers, and possibly threaten the quality and availability of service in rural, high cost areas. The cost of improving and refining the cost estimates is relatively small, at least in comparison with the amount of money that may potentially flow through a universal service funding mechanism. Hence, it is appropriate to take the additional time and effort required to develop highly accurate and realistic estimates of the forward-looking cost of providing telephone services in each specific area within the state.