d) The Hatfield Model improperly ignores software expense. (Section III.C.3.c)

The NBI Study relied upon by the Hatfield modelers contains specific information regarding switching software expense. The NBI Study clearly shows the increasing digital line software expense, rising from total ILEC investment of $1.1 billion in 1996 to $1.8 billion by the year 2000. These software expenses are committed expenses and are future liabilities of the LECs who deploy digital switching. They are developed in part from purchasing commitments stemming from previously negotiated contracts and are required to provide future digital switching. Yet, due to an arbitrary and unwarranted omission, these software expenses are not accounted for in the Hatfield Model.

2. The percentage of switch costs assigned to port and universal service must reflect actual switch type and usage. (Section III.C.3.d)

AT&T and MCI's assertion that the mechanism selected by the Commission for determining port and universal service percentage be "manufacturer neutral" is wrong.[41] Costs do in fact vary by switch type and manufacturer. Consequently, any approach that ignores switch types or manufacturers cannot possibly develop accurate costs reflective of a forward-looking network. Likewise, using a "proxy" approach as a surrogate for actual usage values will distort universal service subsidy flows. Usage

[41] AT&T/MCI Comments at 13.

characteristics differ from office to office,[42] and those differences need to be accounted for in a cost model. In addition, line counts in a given office will have a significant impact on the percentage of switch investments related to port costs. The Line Concentration Ratio ("LCR") must be considered to develop meaningful port costs. The LCR varies from switch to switch. The Hatfield Model, however, ignores the differences between switch types and manufactures, usage characteristics, and the LCR, thereby failing to account for the individual nuances of each switch and grossly distorting switch costs.

The use of switch-specific characteristics would not be burdensome to incorporate. There are many sources from which specific switch data can be extracted. Most LECs already have switch specific cost data that far more accurately reflect their costs than the use of averaged inputs fed into a "proxy" model.[43] The Commission should use these data instead of assigning an arbitrary value, as the Hatfield Model does, that will distort universal service flows.

B. Interoffice facilities, signaling, and local tandem components developed in the Hatfield Model are understated and should not be adopted by the Commission. (Section III.C.4)

In its FNPRM, the Commission stated that the mechanism selected for interoffice trunking, signaling and local tandems should "calculate specific cost estimates for the

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[42] SBC Comments at 5.

[43] SBC Comments at 7; BellSouth et al. Comments at 4.

interoffice elements necessary to provide these functionalities."[44] Using this criterion, the FNPRM tentatively concluded that the Hatfield Model is the mechanism of choice because it is able to generate cost estimates at this level of specificity. While it is true that the Hatfield Model does produce numbers for specific elements, the Model's estimates are fraught with error and do not reflect costs that are reasonably accurate. Accordingly, the Hatfield Model must be rejected. The major flaws that require the rejection at the Hatfield Model are discussed below.

1. The amount of interoffice trunking required is significantly understated. (Section III.C.4)

The assumptions contained in the Hatfield Model regarding interoffice trunking produce results that significantly understate the amount of required IOF investment. As GTE indicated in its initial comments, when route-to-air ratios are calculated using the Hatfield Model's criteria, the results are a mathematical and engineering impossibility – meaning that the route-to-air ratio is less than one.[45] Indeed, in order for the Hatfield Model to properly reflect the IOF facilities needed, the Model would have to multiply the existing IOF mileage built into the Model by a factor of at least three in order for the Model to approach reality. The current form of the Hatfield Model seriously understates the amount of required IOF facilities and their corresponding cost.

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[44] FNPRM, ¶ 141.

[45] GTE Comments at 20.

2. Tandem-to-tandem, E911, and announcement trunks are omitted from the Hatfield Model. (Section III.C.4)

In its endeavor to produce specific costs, the Hatfield Model has ignored major components of the network. Tandem-to-tandem, E911, and announcement trunks are not included in the Hatfield Model. The failure to include these components once again causes the Model to produce erroneous results that understate the true costs of IOF facilities.

3. SS7 diversity is nonexistent in the Hatfield Modeled network. (Section III.C.4)

Although AT&T and MCI claim otherwise, there are inadequate provisions made in the Hatfield Model for the diversity of SS7 signaling links. Since the on-ring IOF is not long enough to complete the ring architecture and the off-ring offices are being served by only a single point-to-point end-office to tandem facility, the entire SS7 system is rendered inoperable and unreliable. As a result, costs associated with IOF as calculated by the Hatfield Model are understated.

4. Improper remote assumptions lead to insufficient IOF placement. (Section III.C.4)

The failure on the part of the Hatfield Model to account for remote switches causes the very routes that the IOF must traverse to be incorrectly modeled. The deficiencies in the IOF portion of the Hatfield Model outlined and put forth in detail in GTE's initial comments undeniably prove that IOF related costs produced by the Hatfield Model are insufficient and unrealistic. Accordingly, the Hatfield Model must be rejected.

* * *

The Hatfield Model is singularly unsuited for determining the forward-looking costs of providing universal service. Its use would be entirely inconsistent with Congress's mandate to provide "sufficient" universal service support. Accordingly, the Commission should firmly and finally reject the Hatfield Model and instead encourage the use of carrier-specific, state-approved engineering models.

IV. CONCLUSION

Building and maintaining a network amid uncertain future demand and ever-changing technology is a tremendously complex undertaking. It is thus impossible to develop a proxy model that can predict costs accurately enough to ensure that LECs will be able to cover their expenses and invest sufficiently in their networks to continue to provide reliable service to customers. The Commission should therefore abandon its efforts to develop a mandatory cost proxy model and should resoundingly reject any

use of the Hatfield Model in determining universal service costs. Instead, in the interim, the Commission should use state-approved, carrier-specific engineering models to allocate funding. As soon as possible, the Commission should implement a competitive-bidding mechanism along the lines previously suggested by GTE.

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