960833-TP

REBUTTAL TESTIMONY OF DR. RICHARD D. EMMERSON
ON BEHALF OF BELLSOUTH TELECOMMUNICATIONS, INC.
BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION
DOCKET NO. 960916-TP
SEPTEMBER 16, 1996

INTRODUCTION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Richard D. Emmerson. I am the President and CEO of INDETEC International, Inc. I am testifying on behalf of BellSouth Telecommunications ("BellSouth" or the "Company"). My business address is 341 La Amatista, Del Mar, CA 92014.

Q. ARE YOU THE SAME RICHARD D. EMMERSON WHO FILED DIRECT TESTIMONY IN THIS DOCKET ON SEPTEMBER 9, 1996?

A. Yes.

Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY IN THIS PROCEEDING?

A. American Communications Services, Inc. ("ACSI") has petitioned the Florida Public Service Commission ("FPSC" or "Commission") to arbitrate unresovled

issues that have arisen in its interconnection negotiations with BST. These unresolved issues involve the pricing of three unbundled network elements (UNEs): loops, cross-connects and channelization. My rebuttal testimony responds to certain positions taken by Dr. Marvin Kahn who is appearing as a witness for ACSI.

DR. KAHN'S PROPOSAL TO CONSIDER THE MARK-UP ON COMPETITIVE SERVICES SHOULD BE REJECTED

Q. DR. KAHN SUGGESTS LIMITING THE MARK-UP OVER TSLRIC FOR UNES TO THE MARK-UP ON THE MOST COMPETITIVE SERVICES OFFERED BY BST.[1] DO YOU AGREE WITH HIS SUGGESTION?

A. No. Dr. Kahn's method of focusing on those services with the lowest level of contribution is simply illogical; such an approach would lead to financial losses for virtually any multiservice firm. To illustrate this, consider a hypothetical competitive multiservice firm which just earns a normal accounting profit or a zero economic profit. This firm offers three services, A, B, and C, which generate 10%, 50% and 90% contribution margins respectively; for simplicity the dollar contribution is $10, $50, and $90 respectively. On average, the firm earns a 50% ($50) contribution on its services and the total contribution is just sufficient to cover the $150 in common costs of the firm.

[1] Testimony of Dr. Marvin Kahn on behalf of American Communications Services, Inc.at pages 4 and 19.

Now consider the effects forcing the firm to price all of its services at the lowest contribution level of $10 per service or 10%. Each service now only provides $10 in contribution and the firm only recovers $30 of its $150 in common costs; the firm faces an economic loss of $120 and must eventually go out of business. Even if only one of the other service prices is forced down the the 10% level, the firm will still face an economic loss (of either $40 or of $80) and must eventually go out of business.

Almost no firm could survive if all (or even a significant portion) of its prices were forced down to the lowest contribution level of its services. Dr. Kahn's proposal is not only mathematically illogical, it contradicts life-cycle and other marketing principles.

THE COMMISSION SHOULD REJECT USE OF THE HATFIELD MODELS

Q. HAS ACSI PROPOSED UTILIZING A HYPOTHETICAL MODEL OF TELECOMMUNICATIONS SERVICES?

A. Yes. Dr. Marvin Kahn has recommended that the FPSC rely on the Hatfield models for purposes of determining the incremental costs of unbundled network elements.[2]

[2] Id at page 25.

Q. DO YOU AGREE WITH DR. KAHN'S RECOMMENDATION?

A. No. There are a series of models and releases by Hatfield and associates which can generically be called "Hatfield Models." These models can not be relied upon to provide sound and reliable estimates of TSLRIC costs of telecommunications services or elements. My comments are based on my review of the documentation of these models, my experience with such cost estimation models in general, including those produced by my own company, my discussions with other modelers, my knowledge of traditional engineering/economic cost models, and my knowledge of the types of data which are utilized in such systems.

Q. BASED ON YOUR KNOWLEDGE, DO THE HATFIELD MODELS UTILIZE METHODS WHICH ARE RELIABLE FOR ESTIMATING TSLRIC COSTS FOR UNBUNDLED NETWORK ELEMENTS?

A. No. It appears that the Hatfield models do not provide a reliable method for estimating TSLRIC costs for unbundled network elements. Hatfield models do not reflect the costs of an actual network, they produce a variety of errors, and perhaps most importantly, certain aspects of the modeling process appear to significantly bias the cost estimates downward.

Q. DO THE HATFIELD MODELS PROVIDE A REASONABLE ESTIMATE OF THE COSTS OF AN INCUMBENT LEC OR A NEW ENTRANT?

A. No. It appears that Hatfield models do not provide a reasonable estimate of either a new entrant or an incumbent LEC. The Hatfield models do not reasonably estimate the costs of an existing LEC placing facilities well in advance of the existence of homes and business (I will call this the franchise scenario). Further, the Hatfield models do not reasonably estimate the costs of a new entrant placing facilities after homes and businesses are completely in place (I will call this the new entrant scenario).

Q. WHAT COST CHARACTERISTICS WOULD EXIST IN THE FRANCHISE SCENARIO?

A. In the franchise scenario the LEC will place facilities well in advance of the actual demand for local service at the time that developments and new construction of homes is about to occur or will possibly occur in order to provide service, or be ready to provide service, to all customers on a timely basis. This leads to relatively high levels of spare capacity at any point in time because growth only slowly catches up with capacity, there is lumpiness in investment, demand forecasting uncertainty, and there are high costs to retroactively expand capacity. Spare capacity leads to relatively high cable material costs.

On the other hand, the franchise scenario, with early placement of facilities, also has some corresponding cost advantages. It provides the opportunity for joint trenching with natural gas lines and limited requirements for cutting through concrete and asphalt and the associated additional labor and safety

costs created when working on active streets. This scenario has relatively low structure and installation costs.

Q. WHAT COST CHARACTERISTICS EXIST IN THE NEW ENTRANT SCENARIO?

A. A new entrant may choose to place facilities only after all buildings, business, homes and streets are in place.[3] Under very unlikely conditions, this could lead to relatively high fill factors and relatively low costs for cable material per customer served.[4] On the other hand, the new entrant must face higher costs for structure and installation (e.g., trenches must be dug much more frequently through concrete, asphalt, lawns and flower beds often on busy streets, requiring care to avoid other existing structures). The costs for a new entrant may be greater than the costs in the franchise scenario.

Q. YOU STATED EARLIER THAT THE HATFIELD MODELS DO NOT ADEQUATELY REFLECT EITHER OF THESE TWO SCENARIOS. WHAT COSTS DO THE HATFIELD MODELS REFLECT?

A. The Hatfield models implicitly reflect the low cable material costs of an unrealistic new entrant scenario and yet also reflect structure costs which may

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[3] Of course, calculating costs for a new entrant begs the policy question of how customers received telecommunications services prior to the new entrant and who pays for such costs.

[4] This requires the critical assumption that the new entrant can somehow capture the entire market and serve all customers at a flash cut point in time. Of course, real entrants have no such opportunity.

be even lower than those which could be obtained in the franchise scenario. The model appears to want to have its cake and eat it too, and then wants some more.

Therefore, the Hatfield models do not properly reflect the costs that would occur for either scenario. This creates a significant underestimation bias in the models results.

Q. DO THE HATFIELD MODELS ASSUME FICTITIOUS CABLE ROUTES?

A. Yes, the Hatfield models, by utilizing inputs from the Benchmark Cost Model assumes that census block groups (CBGs) are square in shape, are assigned to the wire center closest to the centroid of the CBG, that feeder routes extend to the nearest midpoint of a side of the assumed square perimeter of the CBG (or penetrate 1/4 of the length of a perimeter side into the square CBG). These assumptions do not reflect actual customer locations. It is also not clear that the models even reflect the costs of serving an area which has uniformly distributed population (a stated assumption).

Q. ARE THERE OTHER PROBLEMS WITH THE HATFIELD MODELS?

A. Yes, there are. I have simply listed below some of the factors in the Hatfield models which are unrealistic, imprecise, may lead to certain problems and errors, or are simply wrong:

- Possible underestimation of BST Florida service territory by misassignment of CBGs, miscalculation of areas and/or missing CBGs.
- Assignment of CBGs to the wrong wire centers.
- Assignment of CBGs to the wrong serving LEC.
- Problems related to CBGs served by multiple wire centers and/or multiple LECs.
- Labor and switching cost inputs may be substantially understated.
- Operating expenses may be understated via cable cost multipliers.
- Fill rates for feeder and distribution cable appear unrealistically high leading to unrealistically low costs.
- Fill rates appear to be higher than stated in the models documentation.
- Implied fill rates for serving area interface (SAI) and multiplexing (MUX) appear unrealistically high.
- The models appear to be unwieldy and difficult to run.
- The source for manhole, terminal, splice and serving area interface and other costs appear to be based on "subject matter" expert judgement without documentation or validation.
- The identification of subject matter experts (SMEs) utilized by the models is not clear.
- Where and how SME expertise was utilized is not clear.
- Switching costs appear substantially understated.
- What would be expected as major changes in the model do not lead to major changes in the results of the model.
- The models do not reflect the additional costs of changing facilities which exist in a growing demand environment.

- Cost of money and depreciation costs may be unrealistically low.
- Costs for digital cross connects, SS7 network components and essential network support systems may be excluded or understated.
- Operator position costs appear understated.

Q. DO THE HATFIELD MODELS PRODUCE RESULTS WHICH ARE CONSISTENT WITH THE CURRENT COSTS OF PLACING FACILITIES?

A. No, it appears they do not. For example, engineer James Schaaf, testifying on behalf of Pacific Bell in R-95-01-020 (the universal service cost proxy models docket) in his testimony filed April 17, 1996, considered the Hatfield results and a detailed prospective evaluation of the actual current/prospective costs for Angels Camp, California. Mr. Schaaf stated:

> "The results of the study are that the BCM Hatfield results in a $28,767 total cost for 12,376 feet of feeder distance. This is $2.32 per foot. ... The results of the real world estimation process is $140,043 total cost for the same distance of feeder or $11.32 per foot. As anyone can see, the results of the BCM Hatfield are highly problematic." (Emphasis in original).

Q. WHAT ARE THE BCM AND BCM2 AND HOW ARE THEY RELATED TO THE HATFIELD MODELS?

A. The BCM was developed initially "to identify those CBGs in which the cost of providing basic telephone service is so high that some form of explicit high-cost support may be necessary as part of a universal service solution."[5] as a tool to evaluate the need for universal service funding. The Hatfield models utilize the BCM or variants of the BCM for manipulation of demographic data, especially for critical loop investment calculations. However, the BCM was widely criticized as suffering from severe problems that yielded unreliable and unrealistically low cost estimates. By early 1996, the sponsors of the BCM recognized its major shortcomings and stated that work was underway to correct these major shortcomings. By July 1996, the two remaining sponsors of the BCM, USWEST and Sprint, released BCM2 and a set of BCM2 results for all states. BCM2 appears to have corrected the major flaws inherent in the original BCM.

Q. WHAT ARE THE BCM2 RESULTS FOR FLORIDA?

A. The statewide average monthly cost for basic local exchange service is $29.15 in the BCM2 results.[6]

Q. WHAT IS THE COST PROXY MODEL (CPM)?

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[5] "Benchmark Cost Model," A joint submission by Sprint Corporation and USWEST, Inc in CC Docket No. 96-45, July 3, 1996, p. 2.

[6] Id.

A. The CPM is a model jointly developed by Pacific Bell and INDETEC International. It enables companies and regulators to quantify the cost of providing universal service. The CPM is based on a consistent, uniform unit of geography, separates operating expenses from investment, separately develops structure costs and accounts for efficiency of the LEC. In my opinion, the CPM is based on sound economic, financial and management accounting principles.

Q. DOES THE CPM YIELD RESULTS THAT ARE SIMILAR TO BCM2?

A. Because of the corrections from the BCM1 version, the BCM2 now yields results which are similar to the Cost Proxy Model, even at geographic levels as small as a wire centers.

Q. DID THE FCC RELY ON THE HATFIELD MODELS AND THE BENCHMARK COST MODEL (BCM) TO DETERMINE THE LEVELS OF ITS LOOP COST PROXIES?

A. No, the FCC utilized the Hatfield and BCM models only to scale the proxy levels across states. The FCC Order states:

Based on our current information, we believe that both these models are based on detailed engineering and demographic assumptions that vary among states, and that the outputs of these models represent sufficiently reasonable predictions of relative costs differences among states to be used as set forth

below to set a proxy ceiling on unbundled loop prices for each state. *We do not believe, however, that these model outputs by themselves necessarily represent accurate estimates of the absolute magnitude of loop costs.*[7] (emphasis added)

Q. WHAT INFORMATION DID THE FCC UTILIZE IN DETERMINING THE BASE LEVEL FOR ITS LOOP COST PROXIES?

A. The FCC utilized the unbundled loop rates established by six states: Colorado, Connecticut, Florida, Illinois, Michigan and Oregon. The proxy models were utilized to take the costs relationships between states to apply the rates from these six states to all other states.[8]

Q. SHOULD THIS COMMISSION RELY UPON THE FCC'S UNBUNDLED LOOP PROXY RATES IN DETERMINING BST'S RATES FOR UNBUNDLED LOOPS IN FLORIDA?

A. No. The FCC's proxies do not bear a reliable relationship to the incremental costs of providing unbundled loops. The manner in which the FCC derived

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[7] The August 1, 1996, Order in the Matter of Implementation of the Local Competition Provisions in the Telecommunications Act of 1996, released August 8, 1996, CC Docket No. 96-98 (hereinafter "FCC Interconnection Order I") at paragraph 794.

[8] FCC Interconnection Order I at paragraphs 792 - 794.

these proxies is unclear, and the resulting rates may be less than defensible incremental cost estimates. For example, the FCC's proxy rate for Florida is $13.68 per month, but BST's estimate of the monthly long-run incremental cost (LRIC) of supplying two-wire, analog unbundled loops in Florida is much higher.

Q. DR. KAHN RECOMMENDS DEAVERAGING UNBUNDLED LOOP RATES IN ACCORDANCE WITH THE FCC'S LOCAL COMPETITION ORDER. DO YOU AGREE?

A. NO. I recommend that the Commission proceed cautiously in this regard. To geographically deaverage unbundled loop prices now, before a commensurate deaveraging of end-user rates, or a creation of some sources of new subsidy, would create an inconsistency between unbundled service prices and the basic local exchange rates for end-users. Dr. Kahn's proposal does not create consistent pricing relationships.[9]

BST would need the discretion to offer geographically averaged or deaveraged prices. The existing end-user basic local exchange rates create a continuing competitive vulnerability to BST. Establishing geographically deaveraged unbundled loop rates as recommended in portions of Dr Kahn's Supplemental Testimony simply exacerbates this vulnerability. Such a pricing relationship is

[9]More generally, sustainable prices in a competitive environment must be consistent in several ways. The end-user rates (plus explicit subsidies) must be consistent with both unbundled and resale prices (plus subsidies adjusted for cost differences) and end-user rates (plus explicit subsidies) must be rebalanced based on deaveraged costs consistently.

generally inconsistent with the competitive process and BellSouth should not be forced to establish such inconsistent price relationships.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes it does.