

1       **Q.     Please turn to the third section of your testimony. Would you please explain the**  
2       **advantages of your Economic Cost Model?**

3       A.     Yes. Appendix D contains a detailed description of the BJA Economic Cost Model.  
4       This model is simple, powerful, and flexible. It is simple enough to be useful to analysts  
5       other than its creators, with a reasonable compactness that allows its easy distribution  
6       for purposes of validation, replication, and adaptation. Economics may be the dismal  
7       science, but the practice in economics of the scientific method ought not to be an  
8       intolerable burden. Other analysts can take our model in hand (not in a wheelbarrow)  
9       and confirm, refute, modify, and/or expand our results for themselves.

10       Our model is powerful enough to produce results with implications beyond a  
11       particular study and its particular assumptions. In large measure power is a corollary of  
12       simplicity. If the model is tailored very narrowly to the specific requirements of one  
13       company or one set of data, it is likely to be weighted down with customized features  
14       and idiosyncratic variables that prevent generalization of its results or adaptation of its  
15       categories to other data sets. Bell Operating Company cost studies are, in my  
16       experience, particularly prone to this over specification and specialization of models.  
17       Ours is generalized, so that it can be readily adapted to a variety of different  
18       circumstances and issues..

19       The BJA Economic Costing model is flexible enough to estimate a wide variety  
20       of different types of cost, under a wide range of scenarios. Hence, it is capable of  
21       answering many "what ifs" without an undue amount of coaxing. While traditional  
22       models, designed for a monopoly market, examine the costs of a single supplier with  
23       100% market share, our model can examine costs from multiple perspectives--that of  
24       the incumbent LEC plus any reasonable number of new entrants. Furthermore, it can  
25       compare competing scenarios with different market shares for the various competitors--

1           and with different shares of different submarkets (e.g., business vs. residential, urban vs.  
2           rural).

3           The streamlining of our model may expose it to criticism, but such criticism is  
4           not well founded. There is an analogous simplicity in the well known model of "pure  
5           competition" used by economists. The pure competition model is a theoretical construct  
6           that can easily be attacked as unrealistic. Certainly, because it relies upon extreme  
7           simplifying assumptions (e.g., homogeneous products), the model of pure competition  
8           does not precisely fit any part of the real world and is easy to criticize. Yet, this same  
9           model continues to be used and relied upon for many purposes more than 100 years  
10          after it was first developed. The very simplicity of the pure competition model is part of  
11          its strength. It is enormously useful and powerful, forcefully demonstrating important  
12          relationships between buyers and sellers, costs and revenues, in ways that are  
13          impossible to achieve in models that are more complex and sophisticated.

14          Similarly, although our model simplifies away some details of the market and the  
15          network engineering--details that could potentially be presented with more specificity--I  
16          don't think this is a weakness in the model. To the contrary, by simplifying away some  
17          of the detail, we were able to build a model that is not only readily accessible but also  
18          highly flexible and efficient. Thus, for example, our model allows much of the same data  
19          to be used for either the incumbent or a new entrant, under a variety of different  
20          scenarios concerning market shares and network configurations.

21          In general, by simplifying elements of the production process that are not of  
22          critical importance, it become practical to create a model that is more flexible, more  
23          powerful, and easier to understand and use. The model we have used in this proceeding  
24          is capable of examining a wide range of possibilities and clearly indicating the nature of  
25          the shifting relationships between the important variables. In my experience, it is cost

1 relationships and approximate levels that drive management and regulatory policy  
2 decisions, not precise numbers. By trading off some engineering detail, we increased the  
3 explanatory power and range of the model regarding the underlying economic concepts  
4 and relationships.

5  
6 **Q. Can you explain how you adapted your model to New Jersey?**

7 A. The studies prepared for this proceeding are based on detailed data concerning loop  
8 lengths and other characteristics for more than 200 specific wire centers in New Jersey,  
9 using data provided by Bell Atlantic-NJ in response to discovery. To allow for cost  
10 variation within individual wire centers, the model provides for two zones: Zone 1  
11 covering the highest density portions (assumed to be in the immediate vicinity of the  
12 central office or switch) and Zone 2 covering a much larger area, with greater loop  
13 lengths and a lower concentration of customers. However, for simplicity's sake the wire  
14 center costs are not disaggregated by zone in our presentation of most of the results.

15 We developed a variety of different average and incremental cost studies. First,  
16 we developed the average stand alone costs of a network designed to serve only  
17 business customers. Second, we developed the average stand alone costs of a network  
18 designed to serve only residential customers. Third, we developed the average costs of  
19 a combined network designed to serve both business and residential customers.

20 Fourth, we compared the total cost of a network designed to serve only  
21 business customers with the total cost of a network designed to serve both business and  
22 residential customers, thereby deriving the incremental cost of adding residential  
23 customers to an all-business network. This represents the TSLRIC of residence  
24 service, which we have presented on a per unit basis.

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1           Fifth, we compared the total cost of a network designed to serve only  
2 residential customers with the analogous cost of a network designed to serve both  
3 business and residential customers, thereby deriving the TSLRIC of adding business  
4 customers to an all-residential network. Again, we present these results on a per unit  
5 basis, for ease of comparison.

6           Sixth, we calculated the cost of adding ubiquitous service to a less-than-  
7 ubiquitous network that would otherwise serve as many business customers, and 80%  
8 as many residential customers. This focuses attention on the last 20% of the residence  
9 customers, which I consider to be representative of those customers who are price  
10 elastic or otherwise unlikely to remain on the network in the absence of policies  
11 designed to advance universal service. By focusing on this narrow increment, I focus  
12 attention on the incremental cost of serving those customers who may require a subsidy,  
13 or who would potentially be pushed off the network if prices were to increase  
14 drastically, or if the Board were to abandon its longstanding policy goal of achieving  
15 and maintaining universal service.

16           Although the TSLRIC estimates are of particular interest for regulatory  
17 purposes, I have also provided some average cost estimates, including some stand  
18 alone cost estimates. The average cost estimates may be of some importance in  
19 evaluating barriers to entry, and the likelihood that new carriers will find it profitable to  
20 enter a particular market. Unless such a carrier anticipates generating average revenues  
21 in excess of its average costs, it will not enter the market. If it intends to pursue a niche  
22 marketing approach (e.g. serving business customers only), the stand-alone cost  
23 estimates could be of particular relevance.

