I. The Source Code Adjustments to the Synthesis Model are Appropriate and Consistent with the Intent of the FCC

Q. DO YOU AGREE WITH MR. MURPHY'S CRITICISMS RELATING TO YOUR ADJUSTMENTS TO THE SYNTHESIS MODEL SOURCE CODE IN THIS PROCEEDING?

[Murphy @ 67-68]

A. Mr. Murphy criticizes only one of the proposed modifications to the Synthesis Model source code (the node selection criteria) while remaining silent on *all* of the other modifications. In a recent proceeding in Maryland, Mr. Murphy stated that "[a]bsent the luxury of time and testing resources to perform such a review, my analysis indicates that on the surface some of Mr. Pitkin's changes appear reasonable."[46] Given that Mr. Murphy has now had five months since these source code changes were filed in Maryland, I can only conclude that he now agrees with all of them, with the exception of the node selection criteria.

Q. IS YOUR NODE SELECTION CRITERIA ADJUSTMENT APPROPRIATE?

A. Yes. Mr. Murphy refers to the FCC's adoption of the "modified Prim algorithm" and assumes that the FCC therefore "considered and rejected" the distance (or standard) Prim algorithm. Indeed, Mr. Murphy quotes from the FCC documentation about the growth of the network "adding new nodes on the basis of minimum attachment cost." (*see* Murphy at 67) In light of this quotation, however, it is hard to conclude that the FCC adopted the

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[46] Murphy Maryland USF Rebuttal at 75.

modified Prim algorithm in an attempt to increase costs, which is what I have determined occurs when the modified Prim algorithm is used instead of the standard Prim algorithm. Therefore, I believe Mr. Murphy is in error when he assumes that the FCC explicitly rejected a solution that would produce a more efficient network especially in light of the FCC's overall focus on cost minimization in the Synthesis Model.

J. The Synthesis Model Does not Distort the Cost of UNEs Based on Feeder Allocations as Verizon Asserts

Q. VERIZON ASSERTS THAT THE SYNTHESIS MODEL PRODUCES INACCURACIES BECAUSE OF FEEDER ALLOCATIONS. IS THIS CORRECT?

[Tardiff @ 10-11]

A. No. Dr. Tardiff contends that the Modified Synthesis Model produces total investment for each wire center and then assigns it in a manner that moves copper facilities to areas served by fiber facilities and vice versa. The costs presented in my direct testimony rely on Verizon's density cells, which consist of an aggregation of wire centers. Given that Dr. Tardiff's purported inaccuracy only exists within wire centers, this is simply a "red-herring" that has absolutely no bearing on the costs presented in this proceeding. Indeed, Dr. Tardiff even admits that "the wire center average cost is unaffected by the allocation." (Tardiff at 10)

1 **K. The Synthesis Model Adjusted Inputs are Appropriate for Use in Estimating**
2 **the TELRIC of Providing UNEs for Verizon-Virginia**

3 **Q. VERIZON ASSERTS THAT THE SYNTHESIS MODEL NATIONWIDE**
4 **DEFAULT INPUTS ARE NOT APPROPRIATE FOR USE IN ESTIMATING THE**
5 **COST OF PROVIDING UNES. DO YOU AGREE?**
6 ***[Tardiff @ 7 & 13, Murphy @ 77-79]***

7 A. I agree that nationwide inputs should not be used in estimating the cost of providing
8 UNEs for Verizon-Virginia without confirming that those input values are, in fact,
9 appropriately state-specific. AT&T and WorldCom witnesses evaluated the inputs to the
10 Synthesis Model and changed those that were not appropriate for developing TELRIC-
11 based UNE costs.

12 **Q. MESSRS. TARDIFF AND MURPHY CRITICIZE THE WAY IN WHICH YOU**
13 **IMPLEMENTED MR. RIOLO'S DLC LINE FILL FACTOR INTO THE MODEL.**
14 **IS THIS CRITICISM VALID?**
15 ***[Murphy @89-90]***

16 A. No. This criticism is based on a misconception by Verizon about the way the Synthesis
17 Model applies fill factors to DLC equipment. The fill factor applied by the Synthesis
18 Model to DLC is based on the copper feeder fill factors, which Mr. Murphy states "range
19 from 70 percent to 82.5 percent depending on the density zone." (*See* Murphy at 87)
20 Given Mr. Murphy's concession that the Synthesis Model does apply fill factors to DLC,
21 this criticism is moot.

Q. VERIZON CRITICIZES THE PLANT MIX ASSUMPTION IN THE SYNTHESIS MODEL. IS THIS A VALID CRITICISM?

[Murphy @ 107-110]

A. No. Again, Verizon is attempting to discredit the model by citing incorrect information. Mr. Riolo provided plant mix data that included intra-building cable, which is both intra-building cable and block cable.[47] I understand that these cable types do not have significant structure-related costs. Therefore, the most appropriate treatment of this cable type is to use aerial cable, which has the lowest structure costs in the higher density zones. Thus, the approach I utilized is actually quite conservative, and any substitution of underground or buried structure for this type of cable would artificially inflate the resulting costs.

Mr. Murphy may be arguing that the model does not directly build intra-building cable as a means to say these percentages should be excluded altogether. If so, this argument is incorrect because the Synthesis Model treats all customer locations as separate physical locations. Thus, the Synthesis Model likely significantly overstates the route distances in the higher-density areas by including cable that would otherwise be riser cable,[48] and any assertion by Mr. Murphy that the amount of intra-building cable distances is not included in the investments is unfounded. As I stated previously, I have employed an extremely

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[47] Block cable is the cable that connects buildings in areas with high-rise buildings.

[48] This is supported by the earlier comparison I made to Dr. Tardiff's MST analysis. While the Synthesis Model places, on average, almost twice cable as does Dr. Tardiff's MST (1.91), this number actually ranges from approximately one and a half times more cable (1.53) in the lowest density zone to approximately three times more cable (2.99) in the highest density zone.

conservative approach of placing aerial structure for much of this cable that otherwise would not require structure.

Q. DOES VERIZON'S CRITICISMS OF THE STRUCTURE MIX APPLY TO ALL STRUCTURE MIX ASSUMPTIONS?

A. No. Verizon does not appear to disagree with any plant mix values developed and supported by Mr. Riolo other than values developed for distribution cable. However, as I describe above, Verizon's criticisms in this regard are based on false assumptions.

Q. VERIZON CRITICIZES THE DLC COSTS DEVELOPED BY MR. RIOLO AND INCORPORATED INTO THE SYNTHESIS MODEL. ARE THESE CRITICISMS VALID?

[Murphy @ 110-111]

A. No. As Mr. Riolo discusses, Verizon's data responses support the DLC unit costs that he asked me to use in the Synthesis Model.

Q. VERIZON ALSO CRITICIZES THE SHARING ASSUMPTIONS YOU HAVE USED IN THE SYNTHESIS MODEL. ARE THOSE CRITICISMS APPROPRIATE?

[Murphy @ 94-98]

A. No. In the *Inputs Order*, the FCC itself recognized that the default sharing assumptions in the Synthesis Model may need to be revisited. In developing the structure sharing

1 percentages adopted in this Order, we find the sharing percentages proposed by the
2 incumbent LECs to be, in some instances, overly conservative. While we do not
3 necessarily agree with AT&T and MCI as to the extent of available structure sharing, we
4 do agree that a forward-looking mechanism must estimate the structure sharing
5 opportunities available to a carrier operating in the most-efficient manner. As discussed
6 in more detail in this Order, the forward-looking practice of a carrier does not necessarily
7 equate to the historical practice of the carrier. Given the divergence of opinion on this
8 issue, and of AT&T and MCI's contention that further sharing opportunities will exist in
9 the future, we have made a reasonable predictive judgment, and also anticipate that this
10 issue will be revisited as part of the Commission's process to update the model in a future
11 proceeding.

12 **Q. VERIZON DISAGREES WITH YOUR ROAD FACTOR ADJUSTMENT. HOW**
13 **DO YOU RESPOND?**
14 ***[Murphy 101-104]***

15 A. Mr. Murphy states that the ARMIS sheath distances are greater than the modeled sheath
16 distances and cites this relationship to argue that a downward adjustment is incorrect.
17 His argument is wrong for two reasons. First, one would expect a TELRIC model to
18 produce significantly less sheath distance because the network is not built piece-meal to
19 address incremental demand as it develops, but is designed to reach all existing demand
20 in an efficient design. Second, the existing network is likely to have more duplicative
21 sheaths in the network due to plant reinforcement than would exist in the forward-looking
22 network developed by the Synthesis Model. (*See* Riolo surrebuttal) Third, as I stated
23 above, Mr. Murphy is comparing apples-to-oranges because he is comparing Synthesis

Model route distances with sheath distances. I also previously explained that a significant portion of the feeder network is likely to have both copper and fiber cable on the same route. Although no Virginia specific data exists, data in other parts of the country show that use of a road factor of 0.9 is conservatively appropriate. In particular, Kansas data and BellSouth data support such an adjustment.

Mr. Murphy suggests that the Kansas decision[49] was based on a simple review of ARMIS data. This is incorrect. The Kansas decision compared sheath feet for specific wire centers evaluated in significant detail. Thus, Mr. Murphy is wrong when he states "the same computation when made for Verizon VA reflects the exact opposite relationship" (Murphy at 103).

In addition, my Direct Testimony (Pitkin Direct at 21-22) provided two other pieces of supporting information for this adjustment. The first relates to the Kansas decision, which stated that "road surrogate data rather than geocoded customer location data tends to systematically overstate the amount of cable 'deployed' by the model." The second is BellSouth's new model, which uses actual geocoded information from BellSouth's systems and shows that those customer locations result in substantially fewer route miles than are produced by the Synthesis Model. Mr. Murphy is silent on both of these points.

Mr. Murphy cannot be suggesting that locating customers by systematically placing them as far apart as possible along the road network can do anything but increase the modeled

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[49] Order 16: Determining the Kansas-Specific Inputs to the FCC Cost Proxy Model to Establish a Cost-Based Kansas Universal Service Fund, Docket No. 99-GIMT-326-GIT, paras. 38 and 44.

1 distances. There is no factual evidence to suggest that the road surrogate approach of
2 locating customers with maximum dispersion does anything but inflate costs.

3 **Q. VERIZON SIMILARLY CRITICIZES THE SHARING OF FEEDER AND**
4 **DISTRIBUTION STRUCTURE. IS THIS CRITICISM APPROPRIATE?**
5 ***[Murphy @ 98-101]***

6 A. No. While Mr. Murphy purports to criticize any adjustment based on sharing of
7 distribution and cable, he acknowledges that such sharing occurs. He simply disagrees
8 with the size of the adjustment – but proposes none of his own.[50] Mr. Murphy's
9 criticisms are based on 1) his assertion that I am advocating sharing in every situation
10 where both distribution and feeder structure are likely to run along the same physical
11 route; and 2) the way in which the sharing is applied.

12 As for the first point, my adjustment is based on BellSouth's model (which I described in
13 my direct testimony and above), which shows that approximately 75% of the feeder
14 routes overlapped with distribution facilities in two different states. Moreover, after
15 studying the issue, the Kansas Commission determined that an appropriate adjustment to
16 account for sharing is to reduce feeder structure costs by 40%. Thus, I concluded that
17 significant sharing opportunities (much more than 40%) exist, but I used the 40%

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[50] In fact, Mr. Murphy states that "underlying the model's logic is the reasonable premise that the shared structure (pole. manhole, etc.) costs the same regardless of where it is deployed in the network" (*see*, Murphy at 100).

1 assumption to be conservative and to recognize that in some circumstances structure may
2 not be shared on the same route.[51]

3 On the second point, Mr. Murphy is making a mountain out of a molehill. The simple
4 fact is that there is sharing between distribution and feeder facilities in the network today
5 and is likely to occur more frequently in a TELRIC environment because it is an efficient
6 method for provisioning these facilities. While Mr. Murphy complains about the way
7 this sharing is reflected in the Synthesis Model, he proposes no alternatives, presumably
8 because the method I employ requires no correction.

9 Finally, it is important to recognize that the Georgia Commission, which Mr. Murphy
10 cites as rejecting a *different* adjustment for sharing of distribution and feeder facilities,
11 rejected all adjustments to the Synthesis Model, despite the rationale, for fear of ending
12 up with a model different than one that would be supported by the FCC. The Virginia
13 Commission obviously should not have the same concern.

14 **Q. VERIZON CLAIMS THAT THE SYNTHESIS MODEL UNDERLYING DATA IS**
15 **FROM DIFFERENT VINTAGES AND ASSERTS THAT THIS PRODUCES**
16 **INACCURATE RESULTS. IS THIS TRUE?**
17 ***[Murphy @ 79-83]***

18 A. No. While this could be a problem, we have reviewed the inputs in the model to ensure
19 that they are appropriate for estimating the cost of providing UNEs for Verizon-Virginia.

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[51] Although I understand from Mr. Riolo that in a TELRIC environment these situation would be rare because the engineer would seek to minimize the duplicative structure over the same route.

Furthermore, all models rely on assumptions for the purpose of estimating forward-looking plant. This certainly does not reflect an underlying problem with the Synthesis Model. Consider, for example, the Panel Rebuttal Testimony of AT&T/WorldCom and Mr. Baranowski's surrebuttal testimony, where he describes the various vintage data in Verizon's cost study. While there may or may not be a significant problem with Verizon's mis-matched data, I feel comfortable that the data used in the Synthesis Model is accurate and appropriate for estimating the cost of providing UNEs.

Q. IS THERE A MISMATCH IN THE SYNTHESIS MODEL'S UNDERLYING CUSTOMER LOCATION DATA THAT MAKES IT INAPPROPRIATE FOR USE IN THIS MODEL?

A. No. The Synthesis Model relies on the same customer location data as developed and used in the FCC's original Synthesis Model. This data already significantly overstates the number of customer locations because it 1) uses the maximum number of locations from two different data sources and 2) treats every household and business as a separate location, whether that location is in a large building or not. Thus, the Synthesis Model customer location data is, if anything, extremely conservative.

It is also important to note that the FCC, itself, has updated the line counts in its model, even though these do not conform precisely with the 1997 household data. In addition, I understand, from Mr. Baranowski, that Verizon's cost study matches early to mid 1990's vintage sample data on customer locations with much more current line counts. In addition, because the Synthesis Model currently distributes customers evenly across all

1 the roads in a cluster, it is unlikely that additional line growth would cause customers to
2 be more widely dispersed than they already are in the Model.

3 **L. The Synthesis Model Correctly Calculates Expenses**

4 **Q. ARE VERIZON'S CRITICISMS OF THE WAY THE SYNTHESIS MODEL**
5 **HANDLES EXPENSES ACCURATE AND APPROPRIATE?**

6 A. No. The majority of the criticisms raised by Messrs. Tardiff and Murphy regarding
7 expenses relate directly to the investment issues discussed above because the Model
8 develops expenses based on expense-to-investment relationships. Verizon uses the same
9 approach in estimating expenses in its cost studies. Indeed, TELRIC models generally
10 use expense-to-investment ratios to estimate forward-looking expenses.

11 **Q. WHAT ARE VERIZON'S CRITICISMS OF THE COMMON SUPPORT**
12 **EXPENSE CALCULATIONS AND ASSUMPTIONS?**
13 ***[Tardiff @ 61-64, Murphy @ 69-70]***

14 A. Messrs. Tardiff and Murphy claim that the 8% corporate overhead factor is
15 inappropriately developed, that the network operation expense calculation contains
16 errors, and that the level of expenses included in the Model is understated. In addition,
17 Mr. Murphy criticizes the exclusion of expenses associated with marketing as well as the
18 customer services expenses.

19 **Q. CAN YOU EXPLAIN COMMON SUPPORT OVERHEAD SERVICES?**

1 A. Common Support Services expenses are those expenses that are common to all services
2 and are not directly caused by specific asset types. They include: other PPE, marketing,
3 network operations, services, general and administrative and executive and planning.
4 There is general agreement on the expense categories included in common support
5 expenses and on the fact that these expenses cannot be directly attributed to individual
6 elements or services. I strongly disagree, however, with Verizon's erroneous claim that
7 all of these expenses should be included in the cost of UNEs. In fact, the FCC
8 specifically rejected the inclusion of retail-related expenses in the development of UNE
9 costs. [52] Ultimately, for the purpose of determining the cost of wholesale UNEs, these
10 expenses need to be evaluated separately to determine whether they should be included.

11 **Q. DO YOU AGREE WITH VERIZON'S CRITICISMS REGARDING THE EIGHT**
12 **PERCENT CORPORATE OVERHEAD COST FACTOR?**
13 ***[Tardiff @ 63-64, Murphy @ 75-77]***

14 A. No. Messrs. Tardiff and Murphy generally criticize the Synthesis Model for applying an
15 eight percent factor to forward-looking costs to develop total corporate overhead
16 expenses. Corporate overhead expenses have been declining over time,[53] and I have
17 conservatively estimated the overhead factor by using year 2000 data, rather than year
18 2002 data. It is easy to discern the declining corporate overhead expense by reviewing
19 the corporate overhead analysis presented in Attachment F to *AT&T/WorldCom's Initial*
20 *Filing*. Clearly the downward trend that is inherent in this data (12.96% to 8.31% for all

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[52] First Report and Order at 691.
[53] The corporate overhead analysis presented in Attachment F to *AT&T/WorldCom's Initial Filing* shows the downward trend in this data (12.96% to 8.31% for all RBOCs from 1995 to 2000). Verizon-VA's expenses has fallen from 10.43% to 6.88% over this same time period.

1 RBOCs from 1995 to 2000)[54] demonstrates the substantial historical reductions in
2 overhead costs that have occurred. Thus, it is reasonable to anticipate that the corporate
3 overhead factor is likely to be further reduced in the following years.

4 Moreover, Messrs. Tardiff and Murphy criticize the use of an eight percent figure in the
5 face of Verizon's own evidence, which uses and even lower *** **Begin Proprietary** ***
6 *** **End Proprietary** *** percent overhead factor. It is confusing that Verizon can
7 claim that an eight percent factor is inappropriate for the Synthesis Model, when Verizon
8 applies a slightly lower factor in its studies.

9 **Q. ARE THERE ANY REASONS TO EXPECT SIGNIFICANT REDUCTIONS IN**
10 **CORPORATE OVERHEAD EXPENSES FOR VERIZON-VA?**

11 Yes. Current year 2000 ARMIS expenses are likely to be overstated, for the purposes of
12 UNEs, due to the inclusion of retail-related expense. Even Verizon makes a *** **Begin**
13 **Proprietary** *** *** **End Proprietary** *** downward adjustment in its cost studies
14 to remove an estimated portion of the retail only expenses.[55]

15 Corporate overhead expenses are also likely to be overstated because of the inclusion of
16 one-time merger-related costs.[56] In fact, since 1997, ARMIS expense data has likely
17 included significant merger related expense associated with the consolidation of Bell

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[54] Furthermore, Verizon-VA's expense factor has fallen from 10.43% to 6.88% over this same time period.
[55] See Verizon-VA's cost study; Wholesale Corporate Expense; Part G-2a – CommonvzW99 COM 12.95.xls; WP 5 – Corporate Expense
[56] See Response to AT&T/WCOM 3-13, Attachment A, which indicates that Verizon-VA incurred over *** **Begin Proprietary** *** *** **End Proprietary** *** in merger-related costs in 2000.

1 Atlantic and NYNEX and the subsequent merger with GTE. The inclusion of one-time
2 merger related expenses masks the significant downward trend in expenses that has
3 occurred over the past few years.

4 Furthermore, Verizon anticipates significant continuing merger-related cost savings to
5 result from economies of scope and scale as well as the anticipated and well-documented
6 efficiency gains. At a bare minimum, the future expected cost savings must be included
7 in the merger-related savings. For example, Verizon (the parent company) and Verizon-
8 VA expect to save approximately *** **Begin Proprietary** *** *** **End**
9 **Proprietary**** and *** **Begin Proprietary** *** *** **End Proprietary**
10 ***, respectively, though 2003 from expense savings related to it merger with GTE.[57]

11 The specific expenses that comprise these corporate overhead categories include:
12 Executive ("No need for 2 CEOs") and Planning, Accounting & Finance, External
13 Relations, Human Resource, Legal, Procurement, Research & Development and Other
14 General & Administrative. One can readily discern that a significant level of merger-
15 related savings will be realized. Many of these functions are clearly duplicative and are
16 typically some of the first cost cutting measures that result in any merger. In fact,
17 Verizon's own data indicates that more than *** **Begin Proprietary** *** *** **End**
18 **Proprietary** *** of the projected merger-related savings are expected from the corporate
19 overhead categories previously identified.[58]

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[57] See Response to AT&T/WCOM 3-14, Attachment A.
Furthermore, assuming that the company can do no better than the status-quo, *i.e.* produce no more cost savings other than the merger-related savings already anticipated, is unrealistic. Competitive markets force realized cost savings by creating incentives to cut costs.
[58] See Response to AT&T/WCOM 3-14b.

Q. DO YOU AGREE WITH VERIZON'S CRITICISMS REGARDING THE NETWORK OPERATIONS EXPENSES?

[Tardiff @ 62-63, Murphy @ 73-77]

A. Yes and no. Messrs. Tardiff and Murphy assert that I omit a portion of network operations expenses during the allocation to individual elements. I agree that a portion of these expenses are not allocated to the underlying UNEs and address this in Section IV of my testimony.

Second, the witnesses argue that the use of 2002 line count on a DS-0 equivalent basis understates the network operations expense cost per line. This criticism is simply rehashing an issue that the FCC has already heard and rejected. In its *Inputs Order*, the FCC states:

> We also believe that these expenses are driven by the number of channels, not the number of physical lines.
>
> *Input Order* at 390.
>
> US West claims that our regressions may not be based on appropriate cost causative relationships, because we count special access lines by channels and not by physical pairs. The ARMIS data used in the regressions count special lines as channels. That is, special access lines are counted as DS0 equivalents: a DS1 has 24 channels, and a DS3 has 672 channels. US West contends that it is far from clear how this method of counting special access lines reflects how these services cause expenses, because it is clear that DS1s and DS3s are not priced as if they cause 24 and 672 times the amount of expenses as a narrowband line.
>
> *Input Order* at 392.
>
> The fact that DS1s and DS3s are priced differently in the current market place does not imply that it is improper to count lines as channels. US West's suggested alternative, causes the same amount of overhead expenses as a special access customer with one DS1 line. To the contrary, we find that it is reasonable to assume that more overhead expenses are devoted to winning and keeping the DS1 customer than the residential customer. Further, we expect that more overhead expenses are related to customers using higher

> capacity services than those using lower capacity services. Accordingly, we find that it is reasonable to use channel counts in our regression equations.
>
> Input Order at 393.

Q. ARE THE NETWORK OPERATIONS EXPENSES INCLUDED IN THE MODIFIED SYNTHESIS MODEL CONSERVATIVE?

A. Yes. I have overstated Verizon's network operation expenses relative to their true forward-looking costs. Specifically, year 2000 reversed a three-year trend of falling expenses and resulted in a nearly 13% increase over the prior year. This anomaly may be explained by testing and network operations that are directly associated with merger consolidations, or by some other merger-related activity. AT&T/WorldCom requested a breakdown of these expenses but did not receive the information in discovery. The network operations expenses I relied on are conservative because I relied on actual year 2000 expenses, as the base for my forecast, which eliminates the decreasing trend that would otherwise exist.

Additionally, Mr. Riolo addresses the reasons that forward-looking network operations expenses in a TELRIC environment would likely be significantly lower because of more efficient network design and more sophisticated technology.

Q. DOES VERIZON'S CLAIM THAT THE $1.27 PER LINE NETWORK OPERATION EXPENSE IS MUCH HIGHER THAN THE $2.04 PER-LINE FIGURE THAT AT&T OFFERED AS REPRESENTING "BEST PRACTICES" IN MASSACHESUTTES HAVE ANY MERIT?

A. No. Before I specifically address this issue, it is important to realize that this comparison is inappropriate because it relates to costs in another state, in another proceeding, at another time. While I have not conducted an analysis of the HAI model used in Massachusetts, the documentation that Dr. Tardiff cites indicates that Dr. Mercer relied upon vintage 1999 network operations expense data.[59] Dr. Mercer filed his Testimony on May 8, 2001, whereas the ARMIS data were published in late April. It is surprising, however, that Dr. Tardiff failed to mention that Dr. Mercer applied a forward-looking adjustment factor equal to 50% to Verizon-MA's 1999 network operations expenses, which resulted in a per line charge well below the $2.04 he quoted. Given that Verizon-MA's network operations expenses were approximately 64% higher than Virginia for 2000, I think that the network operations expense assumptions included in the Synthesis Model are conservative.

Q. DO YOU AGREE WITH VERIZON'S CRITICISM THAT YOU EXCLUDE MARKETING FROM THE UNE COSTS YOU DEVELOP?

[Murphy @ 69 - 70]

A. I certainly agree that I exclude marketing costs in developing the UNE cost I propose. Mr. Murphy would like us to believe that the vast majority of marketing expenses serve wholesale customers, while the reality is quite the contrary. Product management costs associated with a few wholesale customers hardly outweighs the cost of product management associated with millions of Verizon's retail customers. Marketing also includes costs associated with test market planning and product life cycle analyses and

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[59] Footnote 58 of Dr. Tardiff's Rebuttal Testimony cites Attachment E instead of Dr. Mercer's Exhibit 3 as it appears on the state regulators web cite. http://www.state.ma.us/dpu/telecom/01-20/mercerexhibit3.pdf

establishment of distribution channels, that don't appear to be wholesale related.[60] Furthermore, the majority of marketing expenses (over 60 percent) include product sales (*e.g.*, determination of individual customer needs, development proposals, sales order preparation and handling and preparation of sales records) and advertising that directly focused on retaining and expanding the services of their core retail customers.[61] In addition, I expect that much of Verizon's recent marketing activities relate to the recent merger of Bell Atlantic and GTE and the recent name change to Verizon (I certainly heard quite a bit about it).

In addition, Verizon-VA's avoided cost study excluded nearly *** **Begin Proprietary** *** *** **End Proprietary** *** of the overall marketing expenses that they attributed to retail-related functions. Even twenty-five percent seems quite excessive to me, given that the vast majority of Verizon's marketing effort is focused on their retail customers. Ultimately, Verizon includes 0% of the product sales ($55 million - Verizon-VA 2000), 100% of the product advertising expenses[62] ($5 million - Verizon-VA 2000) and *** **Begin Proprietary** *** *** **End Proprietary** *** of the product management category ($37 million - Verizon-VA 2000. As I explained above, it is hard to imagine that the small number of wholesale customers require nearly 50% of the product management costs incurred by Verizon. Since the vast majority of this category is focused on the retail related functions, I believe that it should be excluded entirely.

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[60] Verizon responded to AT&T's 4th data request for costs associated with these categories by as detailed function as possible by indicating that it was unduly burdensome and likely to be inadmissible evidence. Verizon assume that nearly half these product management expense are retail-related and therefore excluded them from their study.
[61] Verizon excluded the entire portion of sales from the marketing category, which is *** **Begin Proprietary** *** *** **End Proprietary** *** of the overall marketing expense for Verizon-VA 2000.
[62] As AT&T cost panel testimony states the inclusion of 100% of marketing activities to wholesale functions is unfathomable.

1 **Q. DO YOU AGREE WITH VERIZON'S CRITICISM REGARDING THE**
2 **CUSTOMER SERVICE EXPENSE?**

3 A. Mr. Murphy argues that the reliance on the $1.69 per-line per-year for customer service
4 expenses is outdated and is inconsistent with TELRIC and not based on Verizon's current
5 cost to serve the CLEC market in Virginia. Ultimately, over $11 million was incorporated
6 into my Synthesis Model filed in the Direct portion of this proceeding. Verizon
7 concedes, through its cost studies, that over 82% of the customer services expense are
8 avoidable and should therefore be excluded from wholesale-related service expenses.
9 Furthermore it appears that the other two service expense categories, call completion and
10 number services in entirely excluded from Verizon's Model. Thus, our estimate of
11 wholesale related service expenses is not dissimilar from Verizon's own assumption.

12 **Q. DO YOU AGREE WITH VERIZON'S CRITICISMS REGARDING THE**
13 **SYNTHESIS MODEL'S DEFAULT PLANT-SPECIFIC EXPENSES?**
14 ***[Tardiff @ 38, Murphy @ 78-79]***

15 A. In theory, but not in application. In the Tenth Report and Order, the FCC decided to use
16 nationwide expense to investment ratios. They clearly rejected historical ratios based
17 upon embedded cost and reaffirmed nationwide averages as consistent with forward-
18 looking economic cost methodology.[63]

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[63] FCC Tenth Report and Order, ¶ 358.

Q. DO YOU AGREE WITH VERIZON'S CRITICISMS REGARDING YOUR GENERAL SUPPORT FUNCTION COSTS INCLUDED IN THE SYNTHESIS MODEL?

[Tardiff @ 58-60, Murphy @111-113]

A. No. Messrs. Tardiff and Murphy generally indicate that the Model does not produce reasonable levels of support assets because the Model reduces these support related costs investments by 32% for the purposes of USF.[64] The general support functions at issue here include buildings, land, office equipment, furniture and other functions related to general support that are clearly not dedicated solely to the support of wholesale UNEs. Not withstanding Dr. Tardiff's argument, Verizon has made similar, and even larger, adjustments to reduce the land, building and other general support functions to account for the wholesale portion relevant to UNEs.[65] Again, Mr. Murphy is advocating something that his own clients do not support.

IV. VERIZON DOES RAISE A FEW ISSUES THAT MERIT REFINEMENTS TO THE SYNTHESIS MODEL

Q. IS VERIZON CORRECT THAT THERE WERE CHANGES TO THE HAI EXPENSE MODULE IN THE NEY YORK PROCEEDING THAT WOULD ALSO APPLY TO THE SYNTHESIS MODEL?

A. Yes. While I was not aware of this change in the HAI Model (and Verizon did not raise this issue in the Maryland UNE proceeding), I agree that the criticisms raised about the

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[64] Tardiff Rebuttal Testimony, pages 58-60 and Murphy Revised Rebuttal Testimony, pages 111-113.
[65] See VZ-VA 004951

interoffice transport portion of the HAI Model are similarly applicable to the Synthesis Model. However, Verizon cannot "pick-and-choose" the changes that were made in New York to address those criticisms. Thus, I have incorporated all of the changes that were made in New York into the Synthesis Model interoffice calculations to address this issue.

Q. VERIZON CLAIMS THAT THE FULL NETWORK OPERATIONS EXPENSES IN THE SYNTHESIS MODEL DO NOT FLOW THROUGH TO THE RESULTING COSTS. IS THIS CORRECT?

A. This is correct on a limited scale. Only a small portion of the network operations expenses (about 6%) did not flow through correctly -- and those applied only to the toll portion of the network. Therefore, these expenses primarily understated the transport-related costs. I have corrected this error in the results I present in this testimony.

Q. DO YOU AGREE WITH ANY OF VERIZON'S CRITICISMS REGARDING YOUR FORECASTED LINE COUNTS?

A. Verizon pointed out that there has been a change in the way special access lines are reported in ARMIS that overstates the growth rate. Verizon-VA recently provided data in discovery[66] that allows us to appropriately reflect the growth tend. Ultimately, this adjustment results in almost 700,000 fewer special access lines than I previously used (a reduction from 2.8 to 2.1 million DS-0 equivalents.

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[66] I developed the growth rates for the modified special access lines using the same methodology I previously used. Response to AT&T 5.1 at ATTRequest5Quest1_VA1.xls.

1 **Q. DO YOU BELIEVE THAT YOUR REVISED FORECAST OF SPECIAL**
2 **ACCCESS LINES IS CONSERVATIVE?**

3 A. Yes. As Verizon's own discovery data demonstrates, my special access line count is
4 conservative. While, I have assumed approximately 2.1 million total DS0s, Verizon-VA
5 has forecasted approximately *** **BEGIN PROPRIETARY** *** *** **END**
6 **PROPRIETARY** *** DS0s for 2002.[67] In response to our discovery request, Verizon-
7 VA indicated that the difference in the line counts reported in ARMIS compared to their
8 Company forecast was a direct result of the reporting requirement under the ARMIS
9 4308. Specifically, the FCC's ARMIS 4308 report does not require Verizon to quantify
10 the full universe of special access lines, such as optical carrier, private lines etc.[68] Since
11 we received this data response so late in the discovery process (September 8, 2001),[69]
12 despite submitting this request nearly 3 months ago, it has been impossible for us to fully
13 evaluate this data and incorporate it into our study. Though it is clear that the ultimate
14 effect of using Verizon-VA's total line count forecast (on a DS0 equivalent basis) would
15 further reduce costs.

16 While, I fully believe that it is important to try to reflect the full economies of scale and
17 scope in the network, I have made this change in an attempt to remain consistent with my
18 direct testimony, which relied on a subset of high-capacity services. Thus, this
19 methodology significantly understates the true economies of scale that Verizon enjoys
20 and overstates UNEs.

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[67] Supplemental Response to AT&T 4-4
[68] Supplemental Response to AT&T 4-4; Via Email 9/18/01.
[69] We did not receive a response identifying the difference between Verizon's data response and the ARMIS data until September 18, 2001.

1 **Q. ARE THERE ANY OTHER ADJUSTMENTS YOU HAVE MADE TO THE**
2 **MODEL YOU FILED IN YOUR DIRECT TESTIMONY?**

3 A. Yes. As I noted above, Ms. Pitts has provided me with a new traffic sensitive/non-traffic
4 sensitive split to use in the Synthesis Model. This filing includes that recommendation.

5 **V. <u>CONCLUSIONS</u>**

6 **Q. OVERALL, HAS VERIZON PRESENTED ANY EVIDENCE TO SUGGEST**
7 **THAT THE SYNTHESIS MODEL IS NOT THE BEST ALTERNATIVE FOR**
8 **ESTIMATING THE COST OF PROVIDING UNES IN VIRGINIA?**

9 A. No. First, I believe that this Commission and this Staff knows the capabilities of the
10 Synthesis Model. As my testimony clearly demonstrates, the facts show that the
11 Synthesis Model properly estimate the TELRIC of UNEs. I have shown that correcting
12 Messrs. Tardiff's and Murphy's analyses also support the results of the Synthesis Model.

13 All of this is what one would expect from a model that was designed, from the very
14 beginning, to be in full compliance with the FCC's TELRIC standards – especially after
15 receiving public scrutiny from a variety of commenters over a lengthy period of model
16 development.

17 **Q. WHAT ARE THE FINAL COSTS YOU PRESENT BASED ON THE FEW VALID**
18 **CRITICISMS THAT VERIZON PUT FORTH REGARDING THE SYNTHESIS**
19 **MODEL CALCULATIONS?**

A. Attachment A presents the restatement UNE costs after incorporating the few valid criticisms that Verizon has proffered.

Q. WILL YOU PLEASE SUMMARIZE YOUR TESTIMONY?

A. I fully believe that the Synthesis Model is the best available tool for this Commission to estimate the TELRIC-based UNE prices for Verizon in Virginia. With very minor exceptions, the economic and model implementation criticisms raised in the rebuttal testimony filed by Verizon-VA's witness Tardiff and Murphy are without merit.

My surrebuttal testimony demonstrates that, from an overall model platform approach, the Synthesis Model is capable of accurately developing costs for UNEs. The FCC did not make the decision to *apply* the Synthesis Model in USF proceedings using nationwide inputs as a means of allocating a single Universal Service fund to individual companies in individual states until well after the Synthesis Model platform was adopted in the Fifth Report and Order. Furthermore, the efforts of Messrs. Tardiff and Murphy to inpugn the Synthesis Model platform by comparison to (1) Verizon-VA's embedded costs, (2) outdated model runs, and (3) a newly-derived MST analysis have all been shown, in this testimony, to be flawed. When these flaws are corrected, the Tardiff/Murphy comparisons actually demonstrate that the Synthesis Model that I have presented (with the minor corrections for a small number of legitimate critiques made by Mr. Murphy) reliably estimates TELRIC for UNEs in Verizon-VA's territory.

1 Similarly, I have demonstrated that the vast majority of Mr. Murphy's criticisms about
2 the inputs I have used and the engineering assumptions inherent in the Synthesis Model
3 are without merit.

4 In short, my surrebuttal testimony demonstrates that the Synthesis Model -- with the
5 modifications made in my direct and surrebuttal testimony -- is the best and most reliable
6 tool for calculating TELRIC for UNEs in this proceeding.

7 **Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

8 A. Yes, it does.

I, BRIAN F. PITKIN hereby certify under penalty of perjury that the foregoing surrebuttal testimony is true and accurate to the best of my knowledge and belief.

Signed:

September 21, 2001

UNE Costs and Deaveraged Loop Cost by Cell for Verizon-VA

		Overall Average	Density Cell		
			Cell 1	Cell 2	Cell 3
Loop					
Two-Wire Loop					
NID	$ / Month / Line	$ 0.28	$ 0.27	$ 0.30	$ 0.37
Loop Distribution	$ / Month / Line	$ 3.31	$ 2.39	$ 3.83	$ 9.65
Loop Concentration	$ / Month / Line	$ 1.78	$ 1.47	$ 2.32	$ 3.43
Loop Feeder	$ / Month / Line	$ 1.11	$ 1.14	$ 0.79	$ 1.24
Total Two-Wire Loop	$ / Month / Line	$ 6.48	$ 5.28	$ 7.23	$ 14.69
Four-Wire Loop	$ / Month / Line	$ 11.01			
DS1	$ / Month / Line	$ 27.86			
DS3	$ / Month / Line	$ 267.58			
Switching					
Non-Usage Related	$ / Month / Line	$ 2.22			
Usage Related					
Per DEM	$ / DEM	$ 0.00028			
Per Minute	$ / Minute	$ 0.00034			
Combined Flat Switch	$ / Month / Line	$ 2.94			
Signaling network elements					
Links	$ / Month / Link	$ 8.94			
STP	$ / Signaling Message	$ 0.00009			
SCP	$ / Query	$ 0.00103			
Transport network elements					
Dedicated	$ / Minute	$ 0.00034			
Common	$ / Minute	$ 0.00049			
Direct	$ / Minute	$ 0.00037			
Tandem Switch	$ / Minute	$ 0.00084			
Operator systems	$ / Month / Line	$ 0.08			