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December 22, 2008

## Via ECFS

Marlene H. Dortch, Secretary  
Federal Communications Commission  
Office of the Secretary  
445 12th Street, SW  
Washington, DC 20554

**Re: Reply Declaration of August H. Ankum, Ph.D. and Olesya  
Denney, Ph.D. on Behalf of PAETEC  
WC Docket Nos. 03-109, 04-36, 05-337, 06-122, and 07-135;  
CC Docket Nos. 96-45, 96-98, 99-68, 99-200, and 01-92**

Dear Ms. Dortch:

On behalf of PAETEC Communications, Inc. ("PAETEC"), please find attached for filing in the above-referenced dockets the Reply Declaration of August H. Ankum, Ph.D. and Olesya Denney, Ph.D.

As this Reply Declaration explains, the pricing proposals set forth in the Further Notice of Proposed Rulemaking should be rejected for numerous reasons, including:

- The proposed changes would result in an estimated combined \$9.9 billion reduction in annual usage-based revenues for all local exchange carriers, the indirect impact from resulting losses of special access revenue could be as great or even greater, and the demand on revenue recovery through Universal Service support or subscriber line charge increases (for those who can take advantage of such recovery) would be substantial.
- A review of the cost model used by the Federal Communications Commission in its determination of high-cost support for non-rural carriers confirms that costs vary by company, making it inappropriate to adopt a uniform statewide average rate for all companies and highlighting that RBOCs would over recover costs from such averaged rates.
- The record now reveals that one of the fundamental assumptions underpinning the proposal -- the theory that softswitch costs are non-traffic-sensitive -- is simply incorrect.

Should you have any questions, please do not hesitate to contact me.

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Marlene H. Dortch, Secretary  
December 22, 2008  
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Respectfully submitted,

/s/ electronically signed

Tamar E. Finn

Attachment

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**Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554**

In the Matter of	)	WC Docket No. 05-337
	)	
High-Cost Universal Service Support	)	CC Docket No. 96-45
	)	
Federal-State Joint Board on Universal Service Lifeline and Link Up	)	WC Docket No. 03-109
	)	
Universal Service Contribution Methodology	)	WC Docket No. 06-122
	)	
Numbering Resource Optimization	)	CC Docket No. 99-200
	)	
Implementation of the Local Competition	)	CC Docket No. 96-98
	)	
Provisions in the Telecommunications Act of 1996	)	CC Docket No. 01-92
	)	
Developing a Unified Inter-carrier Compensation Regime	)	CC Docket No. 99-68
	)	
Inter-carrier Compensation for ISP-Bound Traffic IP-Enabled Services	)	WC Docket No. 04-36
	)	
Establishing Just and Reasonable Rates for Local Exchange Carriers	)	WC Docket No. 07-135

**REPLY DECLARATION OF  
AUGUST H. ANKUM, PH.D. and OLESYA DENNEY, PH.D.  
ON BEHALF OF PAETEC**

December 22, 2008

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**REPLY DECLARATION OF  
AUGUST H. ANKUM, PH.D., AND OLESYA DENNEY, PH.D.**

We, August Ankum, Ph.D. and Olesya Denney, Ph.D., hereby declare the following:

**I. INTRODUCTION**

*A. Qualifications*

1. My name is August H. Ankum, and my business address is 1027 Arch, Suite 304, Philadelphia, PA, 19107. I currently serve as Senior Vice President with QSI Consulting, Inc. (“QSI”).
2. My name is Olesya Denney, and my business address is 6110 Cheshire Lane N, Plymouth, MN, 55446. I currently serve as a Senior Consultant with QSI Consulting, Inc. (“QSI”).
3. This Declaration was prepared on behalf of PAETEC Communications, Inc. (“PAETEC”).

*B. Purpose*

4. The purpose of this Declaration is threefold. **First**, we present the results of an analysis that estimates the impact of the proposals set forth in the pending Further Notice of Proposed Rulemaking (“FNPRM”) to reduce intercarrier compensation on ratepayers and the federal Universal Service Fund (“USF”).
5. We estimate that the direct impact of the proposed changes to intercarrier compensation rates would be a combined *\$9.9 billion reduction in annual*

*usage-based intercarrier compensation revenues* for all local exchange carriers.

6. The estimated revenue loss of \$9.9 billion reflects the final rates proposed by the FNPRM (the rates upon the completion of the transition period)<sup>1</sup> and conservatively assumes that the final terminating rates would be \$0.0007 per minute,<sup>2</sup> while originating access rates would be zero.
7. The calculated annual reduction in revenues of \$9.9 billion is equivalent to a *9% reduction in total local (end-user and wholesale) annual revenue.*<sup>3</sup> On a per line basis, this number translates into a *\$4.79 impact per month.*
8. In comparison, the size of the federal Universal Service Fund was just under \$7 billion in 2007, including \$4.3 billion associated with the high-cost support program (the carriers' federal universal service support).<sup>4</sup>
9. **Second**, we present a run of the Synthesis model of the Federal Communications Commission (the "FCC" or the "Commission") to demonstrate what is obvious to all students of the industry but, unfortunately, is being ignored in the FNPRM: *costs vary across companies.* The FNPRM's contortionist exercise in costing methodology notwithstanding, there are

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<sup>1</sup> See FNPRM, Appendix A, ¶¶ 192, 193, 202 and 229.

<sup>2</sup> This is a conservative assumption in light of the comments that the terminating rates established according to the FNPRM's proposed methodology would be "extremely close to zero" and "at or below \$0.0007." FNPRM, Appendix A, ¶¶ 273 and 205.

<sup>3</sup> We measured it as the Total Interstate and Intrastate Revenue for Fixed Local Service Other than Payphone for 2006 (taken from the FCC Report "Telecommunications Industry Revenues - 2006" released August 2008, at Table 7).

<sup>4</sup> See the Universal Service Administrative Company Annual Report for 2007 (pdf page 7) available at <http://www.usac.org/res/documents/about/pdf/usac-annual-report-2007.pdf>. The other three programs are rural healthcare, low income and schools and libraries.

certain differences between large and small companies that cannot be swept under the carpet and, as our exercise shows, smaller companies do indeed have higher costs than larger companies. This means that it is inappropriate to set a uniform statewide average rate for all companies. Even if the uniform rate under the FNPRM's additional incremental cost methodology were to generate meaningfully compensatory rates on *average* – and we do not believe it does – then AT&T and Verizon, as the low cost carriers, will over recover costs and all smaller, higher cost carriers will under recover costs.

10. **Third**, we respond to a number of issues raised in the comments filed by various parties in response to the FNPRM.
11. As a preliminary observation, it is obvious from the filed comments that the FNPRM's additional incremental cost standard – in contrast to the clear articulation of the FCC's TELRIC methodology – is a muddle. The confusion does not stem from the Faulhaber formulation, which is conceptually concise; rather, it stems from the FNPRM's goal-oriented assertions and its lack of regard for accuracy, facts or even internal consistency. As a result, it seems that nobody understands the FNPRM's proposals.<sup>5</sup>

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<sup>5</sup> For example, a good critique of the FNPRM's methodology is found in the Declaration of Lee L. Selwyn on behalf of Broadview Networks, Cavalier Communications, NuVox Inc., Pac-West Telecomm, Inc., tw telecom, Inc., and XO Communications, November 26, 2008. Selwyn points out that the FNPRM's methodology is more like a *short-run* cost methodology than a *long-run* methodology, as claimed by the FNPRM. Embarq likewise notes that the FNPRM is a short-run methodology:

[T]he proposed order reaffirms “that the long-run incremental cost rather than short-run incremental cost is the appropriate cost concept.” It then proposes the use of the FICM, a methodology that is characteristically a *short-run* approach. In the long-run, all costs are variable. In the short-run, certain costs are fixed, and only costs that change with small increments of volume are considered. (Emphasis added.) (Embarq Comments at 46.)

12. When all is said and done, however, one thing is clear: the FNPRM seems intent on giving a free (or drastically reduced) ride to the largest and most profitable, vertically integrated carriers in this country – AT&T and Verizon will receive a multi-billion dollar holiday bonus if the new cost standard is adopted, even as other carriers and ratepayers are made to pay AT&T's and Verizon's fare.

## **II. ESTIMATED IMPACT OF THE FNPRM'S PROPOSALS ON RATEPAYERS AND THE USF**

### ***A. Summary***

13. In this section we estimate the impact of the FNPRM's proposal to reduce intercarrier compensation rates, on ratepayers and the universals service fund.
14. We estimate that the direct impact of the proposed changes to intercarrier compensation rates would be a combined *\$9.9 billion reduction in annual usage-based intercarrier compensation revenues* for all local exchange carriers.

### ***B. Discussion and Analysis***

15. The estimated revenue loss reflects the final rates proposed in the FNPRM (the rates upon the completion of the transition period)<sup>6</sup> and conservatively

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<sup>6</sup> See FNPRM, Appendix A, ¶¶ 192, 193, 202 and 229.

assumes that the final terminating rates would be \$0.0007 per minute,<sup>7</sup> while originating access rates would be zero.

16. Our \$9.9 billion revenue impact number represents the combined impact on the incumbent and competitive local exchange carriers, and is calculated by utilizing publicly available information on the “carriers’ carrier” revenues from the per minute charges for services provided under access tariffs, unbundled network element (“UNE”) or other contract arrangements,<sup>8</sup> as well as the network usage<sup>9</sup> and line count data.<sup>10</sup> Appendix 1 to this declaration contains the details on the calculations, assumptions, and data sources.
17. The calculated annual reduction in revenues of \$9.9 billion is equivalent to a *9% reduction in total local (end-user and wholesale) annual revenue.*<sup>11</sup> On a per line basis, this number translates into a *\$4.79 impact per month.* The following table explains how this impact would be distributed between RBOCs, Other Incumbents and CLECs:

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<sup>7</sup> As explained in footnote 2, this is a conservative assumption in light of the FNPRM’s objective of achieving a rate that is “extremely close to zero.”

<sup>8</sup> This information (compiled from the FCC form 499-A reports and aggregated by carrier type) is contained in the FCC “Telecommunications Industry Revenues” reports. The most recent revenue data available are for 2006, which is the baseline year for all revenue impact calculations presented here.

<sup>9</sup> Minutes of use data available at <http://www.fcc.gov/wcb/iatd/neca.html>.

<sup>10</sup> Because the network usage data are not available for competitive local exchange carriers (“CLECs”), we had to employ additional assumptions for CLECs in order to make their revenue projections. Specifically, we assumed that CLEC’s composite interstate access rates are similar to the rates for the Bell Operating Companies (“BOCs” or “RBOCs”), and the ratio between the CLECs’ interstate and intrastate access traffic is also similar to the RBOCs’ ratio. Also due to the lack of the necessary information, we did not quantify the impact on other carriers (payphone, wireless and toll carriers), whose combined share of intercarrier compensation revenue is approximately 4% (based on the FCC “Telecommunications Industry Revenues” Report for 2006, released August 2008, at Table 5).

<sup>11</sup> We measured it as the Total Interstate and Intrastate Revenue for Fixed Local Service Other than Payphone for 2006 (taken from the FCC Report “Telecommunications Industry Revenues - 2006” released August 2008, at Table 7).

**Table. Impact of the Proposed Rate Changes on Total Local Service Revenue.**

Measure	BOC	Other ILECs	CLECs	TOTAL
COMBINED IMPACT OF THE FINAL STAGE (TERMINATING COMPENSATION SET TO \$0.0007 AND ORIGINATING ACCESS RATES SET TO ZERO)*				
Loss in Revenue -- Annual (\$M)	\$ 5,454	\$ 3,250	\$ 1,196	\$ 9,900
Loss in Revenue -- Per Line Per Month	\$ 3.69	\$ 12.56	\$ 3.63	\$ 4.79
TOTAL LOCAL REVENUE** -- Annual (\$M)	\$ 77,002	\$ 17,838	\$ 14,854	\$ 109,694
% Loss of Total Local Revenue	7%	18%	8%	9%

\* -- See Appendix 1 for the calculations of the Annual Total and Per Line Impact.

\*\* -- Total Interstate and Intrastate Revenue for Fixed Local Service Other than Payphone for 2006. Source: the FCC Report "Telecommunications Industry Revenues, 2006" released 8/8, Table 7.

18. As seen in the above table, while the RBOCs' share of revenue losses is the largest when measured in absolute numbers (\$5.454 billion out of the total \$9.9 billion), the most affected group is the Other ILECs: the Other ILECs are projected to lose 18% of their local revenue, while the CLECs are projected to lose 8%, and the RBOCs only 7% of their local revenue. On a per line basis, the Other ILECs' losses are also the largest – at \$12.56 per line per month, while the RBOCs' and CLECs' per line losses are similar (\$3.69 and \$3.63 per line correspondingly).<sup>12</sup>

19. The following table provides additional details on the composition of the estimated revenue losses, as well as the revenue losses expected during the first stage of the transition:

<sup>12</sup> This result is partially driven by the above discussed assumption that CLECs' interstate access rates, as well as the ratios between interstate and intrastate access minutes, are similar to the RBOCs.

**Table. Impact of the Proposed Rate Changes on Intercarrier Compensation Revenue.\***

Measure	BOC	Other ILECs	CLECs	TOTAL
<b>BASELINE</b>				
<b>Revenue from Current Per Minute Charges for Originating or Terminating Calls (\$M)</b>				
Provided under Switched Access Tariffs	\$ 5,260	\$ 3,227	\$ 939	\$ 9,426
Provided under UNE/Other Contract Arrangements	\$ 947	\$ 125	\$ 439	\$ 1,511
<b>Total Baseline Revenue</b>	<b>\$ 6,207</b>	<b>\$ 3,352</b>	<b>\$ 1,378</b>	<b>\$ 10,937</b>
<b>STAGE 1</b>				
<b>Terminating Intrastate Access Rates Set Equal to Interstate Access Rates</b>				
Loss in Revenue -- Annual Total (\$M)	\$ 532	\$ 667	\$ 152	\$ 1,351
Loss in Revenue -- % Baseline Term Revenue	20%	41%	32%	29%
Loss in Revenue -- Per Line Per Month	\$ 0.36	\$ 2.58	\$ 0.46	\$ 0.65
<b>FINAL STAGE</b>				
<b>Terminating Intrastate and Interstate Access and Recip Comp Rates Set Equal to \$0.0007</b>				
Loss in Revenue -- Annual Total (\$M)	\$ 2,824	\$ 1,637	\$ 726	\$ 5,187
Loss in Revenue -- % Baseline Term Revenue	90%	96%	85%	91%
Loss in Revenue -- Per Line Per Month	\$ 1.91	\$ 6.33	\$ 2.20	\$ 2.51
<b>Including the Impact of Setting Reciprocal Compensation Rates to \$0.0007</b>				
Loss in Revenue -- Annual Total (\$M)	\$ 383	\$ 69	\$ 285	\$ 737
Loss in Revenue -- % Baseline	26%	26%	26%	26%
Loss in Revenue -- Per Line Per Month	\$ 0.26	\$ 0.27	\$ 0.86	\$ 0.36
<b>Originating Intrastate and Interstate Access Rates Set Equal to Zero</b>				
Loss in Revenue -- Annual Total (\$M)	\$ 2,630	\$ 1,614	\$ 470	\$ 4,713
Loss in Revenue -- % Baseline Orig Revenue	100%	100%	100%	100%
Loss in Revenue -- Per Line Per Month	\$ 1.78	\$ 6.24	\$ 1.42	\$ 2.28
<b>Combined Impact of the Final Stage</b>				
Loss in Revenue -- Annual Total (\$M)	\$ 5,454	\$ 3,250	\$ 1,196	\$ 9,900
Loss in Revenue -- % Baseline	88%	97%	87%	91%
Loss in Revenue -- Per Line Per Month	\$ 3.69	\$ 12.56	\$ 3.63	\$ 4.79

\* -- See Appendix 1 for the detailed calculations of the revenue impact and data sources.

20. As shown in the above table, the revenue losses during the initial stage (when intrastate terminating access are set rates equal to interstate access rates) would be approximately \$0.65 per line per month on average across all groups of carriers, including a \$2.58 loss for Other Incumbents, a \$0.46 loss for CLECs and a \$0.36 loss per line per month for BOCs. It also shows that

approximately 53% of the revenue losses during the final stage<sup>13</sup> (on average across all carriers) are expected to come from the transition of terminating rates to the \$0.0007 rate, and the remaining revenue loss is expected to come from elimination of the originating access rates. The above table also shows that only a small portion of the total combined impact comes from reductions in the reciprocal compensation rates for local traffic (\$0.36 per line per month out of the total impact of \$4.79 per line per month on average for all local exchange carriers (“LECs”)). This is significant because, while it may be argued that a portion of lost reciprocal compensation revenues could be offset by the savings in reciprocal compensation payments to other carriers,<sup>14</sup> no such offset would happen with regard to the access rates (other than savings of the long-distance affiliates of LECs).<sup>15</sup>

21. It is also important to note that the revenue estimates above are nationwide weighted averages, meaning that they under-represent the extent of the revenue impact on individual carriers and states. This is illustrated in the following table that compares interstate and intrastate access rates of selected BOCs:

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<sup>13</sup> Calculated as \$2.51 (loss in Revenue associated with setting Terminating rates to \$0.0007) divided by \$4.79 (combined impact of the Final Stage).

<sup>14</sup> The amounts of savings would depend on the extent to which originating and terminating traffic is balanced. The fact that CLECs’ estimated revenue losses associated with reciprocal compensation rates (\$0.86 per line per month) significantly exceed the weighted average (\$0.36) suggests that CLECs terminate more local traffic than they originate and therefore, their expected savings from reduced reciprocal compensation payments for local traffic would be insufficient to cover losses from reduced reciprocal compensation revenues.

<sup>15</sup> Furthermore, the underlying cost of providing access and reciprocal compensation service would not go away and would vary by company (as discussed below). Therefore, even if we include the expected savings of long-distance affiliates from lower access and reciprocal compensation expense, high-cost companies and companies with net originating volumes would still be “net losers.”

**Composite Terminating Access Rates per Minute\***

LEC	State	Intrastate	Interstate	Loss in Stage 1 (Transition to Interstate Rates)
AT&T	CA	\$0.004	\$0.008	\$0.000
AT&T	IL	\$0.005	\$0.005	\$0.000
Qwest	CO	\$0.028	\$0.006	\$0.023
Qwest	SD	\$0.060	\$0.006	\$0.054

\* -- Calculated from trafified rates by assuming 10 mile tandem transport.

22. As shown in this table, while individual BOCs' interstate rates are relatively uniform,<sup>16</sup> intrastate rates vary significantly. Because AT&T's current intrastate access rates are at the same level (or even lower) than its interstate rates, the proposed transition in Stage 1 (when intrastate rates are set at levels not exceeding interstate rates) would not have any impact on AT&T in California and Illinois (which are, incidentally, the country's largest and the fourth largest serving areas, correspondingly<sup>17</sup>). In contrast, Qwest's intrastate rates are significantly higher, being 2.8 cents in Colorado (Qwest's largest market) and as high as 6 cents in South Dakota. Therefore, the Stage 1 transition would have a much more significant impact on Qwest than the nationwide BOC weighted average impact would capture. (Of course, the situation is yet more dramatic for other ILECs and CLECs.)

<sup>16</sup> The AT&T composite interstate access rate in California is significantly higher than other interstate access rates due to the fact that one of its components – the shared end office trunk port rate – stands out at \$0.004712 per minute according to its tariff. See AT&T-Pacific Bell Tariff FCC No. 1, section 6 page 6-220.

<sup>17</sup> As measured by both the number of USF Loops and interstate access minutes.

23. As pointed out by Cincinnati Bell,<sup>18</sup> the FNPRM's proposed reductions in the intercarrier compensation rates, including elimination of originating access charges, would also negatively affect the demand of interexchange carriers ("IXCs") for special access services, because dramatic reductions in switched access charges would make it less economical to purchase special access services that are used to by-pass switched access. Therefore, in addition to the direct revenue impact (the loss in the usage-based intercarrier compensation revenue), there will be an indirect impact – a loss in special access revenue. While we do not have the data to estimate this impact for most incumbent local exchange carriers ("ILECs") and the CLECs, this impact can be estimated for the BOCs.
24. Specifically, based on ARMIS 43-08, the BOCs' combined interstate and intrastate special access revenues were almost \$18 billion in 2007 (more than three times higher than the BOCs' switched access revenues). This amount translates into a monthly revenue of \$13.73 per switched access line.<sup>19</sup> Therefore, if we conservatively assume that 50% of special access revenue is associated with circuits purchased for the purposes of by-passing switched access,<sup>20</sup> almost \$9 billion in BOC revenue per year (or, equivalently, \$6.89 per switched line per month) would be in jeopardy and may eventually be eliminated. This amount is comparable to the total direct impact on the

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<sup>18</sup> See Cincinnati Bell Comments at 17.

<sup>19</sup> Based on ARMIS 43-08 for 2007.

<sup>20</sup> Special access service may also be purchased to provide point-to-point communications between end-user locations or as a substitute for UNE loops and transport.

industry, which we estimate to be \$9.9 billion annually. Even if one ignores the special access revenue of Other Incumbents and CLECs, it is clear that the indirect impact of the loss in special access revenue is comparable to (and likely bigger than) the direct impact of the loss in the usage-based intercarrier compensation revenue.

25. To put these revenue losses in perspective, we considered the additional revenue recovery opportunities discussed in the FNPRM. The first additional revenue recovery opportunity is the federal subscriber line charge (“SLC”). The FNPRM proposes to increase the SLC cap by \$1.50 for residential and single line business lines and by \$ 2.30 for multi-line business lines.<sup>21</sup> The FNPRM also notes that some carriers are currently charging a SLC that is below the maximum authorized cap: for example, the current cap for the residential and single line business SLC is \$6.50, while the actual average SLC rate for this group of end users is only \$5.93,<sup>22</sup> which is \$0.57 lower than the cap. The FNPRM suggests that carriers can recover additional revenues by charging the full amount of the currently authorized cap. Clearly, however, these two sources (the increase in the current SLC cap and charging SLC in the maximum allowed amount) are insufficient to offset fully the revenue losses of either group of local exchange carriers. For example, for residential and single line business lines added together these sources would

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<sup>21</sup> See FNPRM, Appendix A, ¶ 298 (proposing an increase of the residential and single line business SLC from \$6.5 to \$8, and an increase of the multi-line business SLC from \$9.2 to \$11.5 per line per month).

<sup>22</sup> *Id.*

result in additional \$2.07 revenue per month per line on average,<sup>23</sup> while the direct<sup>24</sup> revenue losses from the proposed changes to the intercarrier compensation rates would be over \$3.60 for BOCs and CLECs,<sup>25</sup> and \$12.56 for other ILECs on the final stage. In other words, the net shortfall of revenues (the difference between the lost intercarrier compensation revenues and the additional revenues associated with SLC) would be \$1.62 per line per month for BOCs<sup>26</sup> (or, equivalently, 44% of the total revenue loss for BOCs) and \$10.49 per line per month for Other ILECs<sup>27</sup> (or, equivalently, 84% of the total revenue loss for Other ILECs).

26. The other revenue recovery opportunity discussed in the FNPRM is the availability of additional universal service funding. The FNPRM suggests that additional USF support would be available to all incumbent carriers, and that price cap carriers would need to make a showing of the need of the additional funds.<sup>28</sup>

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<sup>23</sup> Calculated as \$1.50 (the proposed increase of SLC) and \$0.57 (the increase of actual SLC to the maximum currently authorized cap).

<sup>24</sup> As explained above, direct impact represents the estimated loss in usage-based intercarrier compensation revenue, while there will also be an indirect impact of comparable size (the loss of special access revenues).

<sup>25</sup> While CLECs' end user rates and SLCs are not regulated (meaning that CLECs are "free" to increase their end-user rates in order to fully recover lost revenues), we include CLECs in this discussion because CLECs compete with ILECs, so that their ability to increase end-user rates and charges is dependent on the ILECs' increases in end-user rates and charges. For example, if an ILEC is not authorized to increase its end user rates and charges, a CLEC competing in its territory would likely not be able to increase its rates and stay competitive. In addition, since CLECs primarily serve business customers under contractual arrangements, they would not be able to modify end user pricing during the term of those agreements.

<sup>26</sup> Calculated as \$3.69 minus \$2.07.

<sup>27</sup> Calculated as \$12.56 minus \$2.07.

<sup>28</sup> FNPRM, Appendix A, ¶¶ 309, 315-321.

27. As discussed above, if only the direct effect is considered, the carriers' shortfall in revenues net of the additional SLC moneys would constitute 44% of BOC and 84% of Other ILECs' total revenue losses. In absolute measures this revenue shortfall is equivalent to approximately \$5.1 billion annually (including \$2.4 billion for BOCs and \$2.7 billion for Other ILECs). In comparison, the size of the federal Universal Service Fund was just under \$7 billion in 2007, including \$4.3 billion associated with the high-cost support program (the carriers' federal universal service support).<sup>29</sup> In other words, in order to make up the remaining shortfall in the incumbents' revenues through the federal USF, the amount of the additional support would have to be comparable to the current fund size. To compensate both the price cap and rate of return ILECs, the federal USF would have to increase by \$5.1 billion (other things being constant), and even if only the rate of return carriers are compensated, the required increase in the fund would likely be several billion dollars per year.<sup>30</sup> To compensate non-BOC ILECs, the federal USF would have to increase by \$2.7 billion annually.

28. Of course, under the FNPRM proposal, CLECs would not be able to recover from the USF any loss in revenue, meaning that CLECs would have to absorb

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<sup>29</sup> See the Universal Service Administrative Company Annual Report for 2007 (pdf page 7) available at <http://www.usac.org/res/documents/about/pdf/usac-annual-report-2007.pdf>. The other three programs are rural healthcare, low income and schools and libraries.

<sup>30</sup> Because the publicly available revenue data reported by the FCC ("Telecommunications Industry Revenue" Reports) does not separate the rate of return carriers from price cap non-BOC ILECs, we were unable to calculate directly the revenue losses of the rate of return carriers. However, we expect that the share of rate-of-return ILECs would likely constitute more than half (at the minimum) of the revenue losses of "Other ILECs" because while, in terms of traffic volumes, rate of return companies amount for approximately 43% of interstate minutes of non-BOC ILECs, their interstate and intrastate access rates are significantly higher than the access rates of price cap companies.

or/and recover from their end-users the full amount of CLEC revenue losses (\$1.2 billion annually).

29. The additional federal USF sums necessary to compensate the ILECs revenue losses would almost certainly require an increase in USF contributions from carriers, which would lead to increased surcharges on end users. We estimate that the additional USF surcharges on wireline and wireless subscribers would constitute on average \$0.56 per line per month to fund revenue losses of Other ILECs, and another \$0.50 per line per month to fund revenue losses of BOCs, totaling \$1.06 per line per month.<sup>31</sup>

**III. UNIFORM STATEWIDE AVERAGE RATES ARE INAPPROPRIATE BECAUSE, AS THE INDUSTRY’S VAST EXPERIENCES TEACHES, THERE ARE SIGNIFICANT COST DIFFERENCES ACROSS COMPANIES**

*A. Overview*

30. AT&T argues that intercarrier compensation rates should be uniform within each state because “the unit costs of soft-switches do not vary from carrier to carrier. Proposals to vary termination charges from carrier to carrier may thus lack any empirical foundation in modern technology.”<sup>32</sup> We disagree.
31. The FNPRM’s controversial and counterintuitive assertion that a uniform statewide averaged rate may be appropriate is being received with a great deal

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<sup>31</sup> These amounts were calculated by spreading the estimated revenue loss (\$2.4 billion annually for BOCs and \$2.7 billion annually for Other ILECs) across wireline and wireless access lines (401.4 million lines, as taken from the FCC Trends Report released in December 2007, tables 8.1 and 11.2).

<sup>32</sup> AT&T Comments at 14 (footnote omitted).

of skepticism.<sup>33</sup> As noted by several parties, the opposite is more likely to be true -- it is the advocacy for uniform rates that lacks empirical foundation and flies in the face of the industry's long and vast experience in rate setting and cost modeling, all of which has conclusively demonstrated that costs do vary from company to company.

32. To recapitulate, the FNPRM's justification for the uniform statewide rate was based on two notions: (1) softswitches are easily scalable (and thus the incremental cost of termination does not vary with the number of lines the switch serves), and (2) carriers tend to deploy significant excess capacity when deploying fiber (so that the incremental cost of adding traffic is likely to approach, or equal, zero).<sup>34</sup> Neither notion is adequately supported in the FNPRM, nor do they receive any adequate support in comments.
33. Regarding the first notion (the notion of switch scalability), the FNPRM only indirectly discusses the issue of scalability of softswitches when addressing

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<sup>33</sup> For example, the Wisconsin Public Service Commission notes (at p. 7) of its November 26, 2008 Comments that "[i]t may be the case that costs are sufficiently uniform to create a single, statewide rate, but that conclusion can only result from a study of each carrier's costs." Likewise, Windstream, in its November 26, 2008 Comments, notes (at p. 38) that "[t]he lack of justification for a near-zero, uniform rate is perhaps best indicated by the sources the Commission cites in support. ... To justify the amount of the rate, the Commission, instead, turns to sources of the likes of Wikipedia, self-described as "the free encyclopedia that *anyone* can edit[.]" Windstream adds on (p. 37) that "[g]iven the differences in areas served by the RBOCs, wireless carriers, CLECs, and small and mid-sized ILECs, there is no reason to accept or conclude that the terminating costs for all of these different types of carriers within a state will be equal." Cincinnati Bell's November 26, 2008 Comments note (at p. 13) that it is "unreasonable and inappropriate to assume that mid-size and small carriers can realize the benefits of the economies of scale and scope that the large integrated national carriers have achieved." Embarq's November 26, 2008 Comments note (at p. 27) that "[t]he proposed order fails to explain how and why it can set a rate, much less a uniform rate cap for all carriers and virtually all states, without any regard to those carriers' actual network costs."

<sup>34</sup> See FNPRM, Appendix A, ¶ 274.

AT&T's October 4, 2008 *ex parte*<sup>35</sup> that attempted to estimate the per minute cost of a modern softswitch by using an AT&T filing in a Michigan case that concerned switching costs for small ILECs.<sup>36</sup> This confidential Michigan data – while not available publicly and not presented to the FCC in this proceeding as far as we know – is the FNPRM's only “empirical evidence” regarding softswitch costs. Yet, even the publicly available portions of this AT&T Michigan filing<sup>37</sup> indicate that it does not provide adequate support for the notion of softswitch scalability. First, the AT&T filing in Michigan did not “disprove” scale economies (nor did it attempt to estimate scale economies or incremental cost); in fact, its underlying assumption is premised upon scale economies, as it points to the existence of fixed investment, the lumpiness of purchasing switch capacity and the fact that the vendor offers a “base configuration” – the minimum switch size – that supports certain base usage and lines<sup>38</sup> (meaning that the switch cannot be scaled down beyond the

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<sup>35</sup> AT&T's October 13, 2008 *ex parte* in CC Docket No. 01-92, WC Docket No. 005-337, CC Docket No. 96-45, WC Docket No. 99-68, WC Docket No. 07-135.

<sup>36</sup> Michigan Public Service Commission Case U-14781 (the case that addressed the TELRIC costs of the Michigan Exchange Carrier Association (“MECA”)).

<sup>37</sup> Michigan Public Service Commission Case U-14781, December 3, 2007 Affidavit of Dr. Kent A. Currie in Support of AT&T Michigan's Objections to the October 19, 2007 MECA Compliance Filing (“Currie Affidavit;” see ¶¶ 56-59 and Schedule 4) available at <http://efile.mpsc.cis.state.mi.us/efile/docs/14781/0190.pdf>. Note that this Schedule is confidential, and only the non-cost data (line, trunk counts and busy hour measures) are available publicly.

<sup>38</sup> See Currie Affidavit, ¶40: “MECA worked with CopperCom, which provided prices for various components needed to build a CopperCom soft switch having end-office and tandem (Class 4/5) capabilities. These components included: a) A base configuration with a capacity of 2000 SIP lines/trunks and a Session Border Controller with a capacity of 250 simultaneous calls; b) Additional SIP equipment in increments of 2000 stations; c) Additional Session Border Controllers; d) TDM cards that support non-IP inter-switch trunking; e) Necessary power equipment.” It also explains in ¶ 45 that “[s]ome minimum equipment is needed regardless of the number of lines and trunks and the amount of offered traffic. For example, the base configuration,

capacities of the base configuration). Second, this study was based on a very narrow data range: not only did it look at the switch cost of a single (now defunct) vendor, but the data assumed that the switch would only support up to 8,000 lines. In contrast, real-life switches may be a magnitude larger.<sup>39</sup> It is simply not possible to determine whether incremental costs of large and medium-sized switches would be the same as small switches given the data limitations in the AT&T study. Similarly, the narrow scope of the data in this study could not possibly capture additional scale economies of large companies that stem from their purchasing power advantages over small companies. In other words, the FNPRM's notion of switch scalability is not grounded in any facts.

34. The basis for the FNPRM's second notion -- that the additional transport cost of terminating traffic is close to zero -- is the purely theoretical speculation "that fiber optic technologies have large fixed costs associated with supporting structures (poles, trenches and conduits) and relatively low incremental costs of increasing the capacity of each fiber cable by installing improved laser transmission equipment.... once a fiber cable has been laid on a route, the

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its installation, associated software and power equipment are needed to have any soft switch capabilities even if no lines and no trunks are connected to the switch and no traffic is offered to the switch."

<sup>39</sup> For example, the Commission has previously adopted a maximum switch capacity of 80,000 lines, noting that some actual switches served more than 100,000 lines. *See Federal-State Joint Board on Universal Service, Forward-Looking Mechanism for High Cost Support for Non- Rural LECs*, CC Docket Nos. 96-45, 97-10, Tenth Report and Order, 14 FCC Rcd 20156 (1999), at ¶ 329 and n. 1060.

costs of increasing its transmission capacity are relatively small, so extra minutes of demand result in very little incremental costs.”<sup>40</sup>

35. Even ignoring its over-simplifications, this speculation (does not mean that the installed fiber cable capacity is infinite and as such, can accommodate any additional traffic; it only means that it was installed to accommodate reasonably expected future demand. Indeed, while it may be efficient to install significant spare capacity in central business districts (where the cost of tearing down the streets to add capacity is high and where it is reasonable to expect significant future growth in demand), it is likely that in rural areas the installed spare capacity would be much smaller than in urban areas.
36. The FNPRM also ignores that much of the cost of transport is associated not only with the fiber but rather with the electronics to light the fiber. Although fiber cables may theoretically have near infinite capacity, the electronics are capacity-limited and need to be expanded (at some cost) as traffic loads increase.
37. The existing spare cable would likely not be sufficient if the demand increases beyond reasonable expectations. For example, the FNPRM’s proposed new costing methodology assumes that the relevant “increment of demand” for cost analysis purposes is the total volume of traffic terminating to other

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<sup>40</sup> FNPRM, Appendix A, ¶ 256. Here, the FNPRM references the Three Economists Declaration, which was filed as Appendix A to the Reply Comments of the Intercarrier Compensation Forum in docket CC No. 01-92 on July 27, 2005 (Errata filing). These economists are Richard N. Clarke of AT&T, Thomas J. Makarewicz of SBC and Brian K. Staihr of Sprint.

carriers,<sup>41</sup> which essentially equates to about one-half the total local and long distance traffic of many carriers. With such a significant increase in traffic, some portion of the original fiber-build would almost certainly be incremental to the terminating traffic at issue even under the proposed “additional cost” standard.

38. Furthermore, for smaller carriers for whom it is more efficient to lease (rather than build) fiber transport, the cost of additional transport capacity is clearly non-trivial and is essentially a linear function of transport prices (i.e., costs increase in direct relationship to traffic volumes): for example, to increase its transport capacity from one DS3 to two DS3 circuits, a company leasing fiber would have to double its leasing costs. In other words, the additional incremental cost of transporting terminating traffic is far from zero.
39. To summarize, the FNPRM justified its proposal of uniform statewide transport and termination rates based on the notions that switches are perfectly scalable and that the additional cost of transport is close to zero. Neither notion is correct. These notions are particularly incorrect for smaller carriers, whose customer base is typically less dense than those of large carriers; thus, smaller carriers have smaller scale economies and higher interoffice transport distances and transport cost compared to large companies. An additional factor that drives up the cost of smaller companies compared to large companies is the fact that interconnection typically happens at the BOC

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<sup>41</sup> FNPRM, Appendix A, ¶ 271.

tandem (or a tandem of some other large company), meaning that smaller companies have to transport their calls into the BOC's territory and onto the BOC network. The softswitch technology would only further increase the transport cost differences between large and small companies because a softswitch architecture contains more transport and less switching sites compared to a circuit-switch architecture. For a given company one softswitch may replace all of its circuit switches, but each call would have to "travel" to the softswitch location (thus increasing average transport distances as compared to a more decentralized circuit switch architecture).

***B. A Synthesis Model Run: Evidence that Costs Vary Across Companies***

40. To illustrate the differences in transport and termination cost between BOC and small companies, we present the cost estimates from the FCC's Synthesis Model – the model developed by the FCC that is currently used to determine the federal high-cost support for non-rural carriers. We chose this model because it is a forward-looking model that was developed by the FCC and has received significant public scrutiny, and it is currently the only publicly available model that is capable of estimating costs for all carriers in the country.
41. While this model is based on the circuit-switch technology and the TELRIC/TSLRIC cost standard, it nevertheless contains useful information about the potential differences in cost between large and small companies even if one assumes the use of softswitches and uses the proposed additional

incremental cost standard. For example, this model utilized fiber-based transport technology and current customer and end office locations (the modeling principles that the FNPRM did not reject), meaning that it captures the differences between large and small companies associated with different customer densities.

42. We present the cost estimates for the state of Wyoming because these cost estimates relate to a project in which QSI was engaged.<sup>42</sup> Specifically, while the Synthesis Model is not generally used to estimate cost of rural companies,<sup>43</sup> within this project we modified inputs to the Synthesis Model with company-specific information to estimate more accurately the cost for each incumbent carrier in Wyoming to provide local exchange service.
43. Due to confidentiality restrictions, we present the Model's "default" cost estimates (instead of the more accurate cost estimates that were based on the confidential company-specific data); however, the default values are sufficient to demonstrate the differences in cost between the Wyoming BOC (Qwest) and other companies as a general matter. The following table contains the

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<sup>42</sup> In 2004 QSI was engaged by the Wyoming Legislature to evaluate an option of a cost-based state universal service fund for all local exchange carriers in the state.

<sup>43</sup> The inaccuracies of the Synthesis Model as it concerns estimation of the cost of rural companies were pointed out by the Rural Task Force, which was an independent advisory panel appointed by the Federal – State Joint Board on Universal Service to provide guidance on universal service issues affecting rural telephone companies. It prepared a series of white papers on the Synthesis Model. Its analysis is captured in the FCC's "Rural Task Force Order" at ¶ 175. (*In the Matter of Federal-State Joint Board on Universal Service; Multi-Association Group (MAG) Plan for Regulation of Interstate Services of Non-Price Cap Incumbent Local Exchange Carriers and Interexchange Carriers*, CC Docket No. 96-45, CC Docket No. 00-256, Fourteenth Report And Order, Twenty-Second Order On Reconsideration, and Further Notice of Proposed Rulemaking in CC Docket No. 96-45, and Report and Order in CC Docket No. 00-256 (Released May 23, 2001)).

Synthesis Model’s per minute cost estimates for the key functions of transport and termination:

Table. Per Minute Transport and Termination Cost in the Synthesis Model -- Wyoming\*

	End Office Usage	Direct Interoffice Transport	Tandem Transport	Tandem Switching	Composite Rate **	Model Switched Lines per Wire Center
Qwest***	\$ 0.0014	\$ 0.0038	\$ 0.0021	\$ 0.0012	\$ 0.0051	8,317
Other ILECs****	\$ 0.0057	\$ 0.0598	\$ 0.0241	\$ 0.0198	\$ 0.0623	683
Uniform Rate (Blended Qwest and Other LEC Cost)	\$ 0.0017	\$ 0.0037	\$ 0.0037	\$ 0.0025	\$ 0.0060	
Ratio: Other LECs to Qwest	4.0	15.8	11.4	16.8	12.2	0.1

\* -- Per minute cost are taken from the Model's Wire Center output files, Tab "Investment Input," columns HF (End Office Usage), HN and HO (Direct Transport), HP and HQ (Tandem Transport) and HR (Tandem Switching) and aggregated by using switched access lines and end office usage as weights.

\*\* -- Assuming that 80% of transport is direct and 20% is tandem routed

\*\*\* -- Qwest numbers are based on the Model Wire Center output file for 2000 posted on the FCC web site.

\*\*\*\* -- Numbers for Other ILECs are based on the default runs generated by QSI by using the Synthesis Model posted on the FCC web site.

44. As shown in this table, the transport and termination costs of carriers other than Qwest exceed Qwest’s cost significantly: in switching (end office termination) the difference is 4-fold, while for all the components of transport (direct transport, tandem transport and tandem switching) it is more than 11 times. Also shown in the table is that a uniform cost-based rate would be \$0.0060 per minute, while the Other ILECs cost would be \$0.0623 per minute, or more than 10 times higher. Therefore, *if a statewide uniform transport and termination rate is adopted, Qwest would over-recover, and other LECs would significantly under-recover their costs.*

45. While Wyoming may be perceived as an “outlier” state in terms of its “absolute” market size and density, it is important that it is a “typical state” in

terms of the relative differences between the BOC serving territory and other companies.

46. For example, the last column in the above table shows that the average size of the Other ILECs' wire centers (a measure of customer density) is approximately 10% of Qwest's wire center size. This measure of customer density disparity is very close to the nationwide current medium value,<sup>44</sup> meaning that Wyoming is representative of the size and scale differences that exist between BOCs and other carriers in most states. Lower customer densities for small companies compared to BOCs mean fewer scale economies, lower purchasing power when dealing with equipment vendors, larger interoffice distances, and as a result, significantly higher transport and termination cost than the BOCs' costs. Consequently, *if a statewide uniform transport and termination rate is adopted, BOCs would over-recover, and other companies would under-recover their respective costs.*

#### **IV. RESPONSES TO COMMENTS FILED BY OTHER PARTIES**

##### ***A. Even AT&T Now Contests the FNPRM's Claims that the Costs of the Softswitch Are Non-Traffic Sensitive – Thus Undermining the Very Foundation for the FNPRM's Ill-Conceived Proposals***

47. Central to the FNPRM's proposals in Appendices A and C is the mistaken belief that the incremental costs of terminating traffic are near zero:

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<sup>44</sup> Calculated by using the Synthesis Model's count of wire centers and the current USF Loops are reported in the 2008 NECA cost study data available at [www.fcc.gov](http://www.fcc.gov).

Available evidence suggests that the incremental costs of terminating traffic, as determined using this methodology, are likely to be *extremely close to zero*. (FNPRM Exh. A at ¶ 273.) (Emphasis.)

48. This belief in near-zero costs, in turn, rests on two highly controversial assertions: (a) cost studies should assume 100% softswitch technologies; and (b) the costs of the softswitch are predominantly *non-traffic sensitive*. While both assertions have drawn dissenting comments from multiple parties,<sup>45</sup> the latter assertion has revealed the FNPRM to be so confused about softswitch technologies that even AT&T has to chime in with corrections (as discussed further below).<sup>46</sup>
49. AT&T's dissenting language is particularly noteworthy, to say the least, because the FNPRM's assertion – that the costs of the softswitch are predominantly non-traffic sensitive – was based in the first instance nearly exclusively on an AT&T ex parte letter. Below is the relevant passage from the FNPRM:

Although we do not necessarily accept the precise estimates contained in AT&T's *ex parte* letter, we note that its analysis suggests that the incremental traffic-sensitive costs of modern softswitches are likely to be significantly lower than those of circuit switches and *possibly zero*, both because the investment cost per line is lower and *because the percentage of traffic-sensitive costs to total costs is lower for modern softswitches.*<sup>47</sup> (Emphasis added.)

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<sup>45</sup> See for example, Paetec *Ex Parte*, Declaration of Drs. Ankum and Denney for Paetec, at ¶¶ 28-39 and 42-49, Windstream November 26, 2008 Comments at 29, Embarq Comments at 49 .

<sup>46</sup> AT&T Comments at 13.

<sup>47</sup> FNPRM, Appendix A, ¶ 257.

50. AT&T's dissenting comments focus on the following statements in the FNPRM:

We recognize that the incremental cost of terminating traffic may include certain *non-traffic-sensitive costs*, such as the cost of a *trunk port*. Consistent with cost-causation principles, however, such non-traffic-sensitive costs may not be recovered through per-minute charges, but must rather be recovered through flat-rated monthly charges associated with interconnection trunks.<sup>48</sup> (Emphasis added.)

51. AT&T explains – consistent with nearly identical critiques of other parties – that the FNPRM gets it wrong and that the costs of softswitch ports are, instead, *traffic-sensitive* costs.
52. Specifically, AT&T explains:

[The FNPRM] observes that “the incremental cost of terminating traffic may include certain *non-traffic-sensitive* costs, such as the cost of a trunk port,” and it suggests that ILECs should recover such costs from interconnecting carriers through flat-rated charges outside the scope of Section 251(b)(5) rather than through per-minute charges within the scope of that provision. We agree, with the following caveat. The costs of “trunk ports” on the *interconnection* side of a tandem switch or end office switch should be recovered outside the scope of Section 251(b)(5). As footnote 708 suggests, when these trunk ports are associated with interconnection trunk groups dedicated to individual interconnecting carriers, these trunk ports should be recovered through flat-rated mechanisms. Conversely, when these trunk ports are associated with interconnection trunk groups associated with another carrier's transit tandem service, these trunk ports are shared by multiple carriers and should be recovered through usage-based mechanisms. [...] In addition, the separate trunk ports that connect a carrier's tandem switch to its end office switches via shared transport facilities on the terminating carrier's network are also used to handle traffic sent by multiple carriers. *The costs of these components are rightly considered traffic-sensitive in this*

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<sup>48</sup> FNPRM, Appendix A, note 717, and Appendix C., note 708.

*context because increased traffic volumes associated with terminating traffic during the busy hour may require a carrier to install additional trunks and trunk ports to support multiple carriers' traffic. These costs, like the incremental costs of any other shared resource involved in transport and termination, should thus be subject to reciprocal compensation rates.<sup>49</sup> (Emphasis added.)*

53. As noted, AT&T's comments are *nearly verbatim* what we and other commenters have offered but which the FNPRM summarily dismissed. For example, we noted:

Any assertion that the "cost of a trunk port" is non-traffic sensitive is startling. To our knowledge, shared trunk port costs have never been treated as non-traffic sensitive in state or federal cost proceedings. Because shared ports are a common resource, as traffic volumes on the switch increase, the number of trunk ports must also increase in a direct relationship. For this reason, there are few costs that are so plainly traffic sensitive as trunk port costs.<sup>50</sup> (Emphasis added.)

54. It is clear from this discussion that the FNPRM proposals evidence a basic misunderstanding of softswitches and the main drivers of the costs of softswitches.
55. The FNPRM's initial dismissal of a NuVox *ex parte*, arguing that costs of the softswitch are almost exclusively traffic sensitive, was also incorrect. The FNPRM dismissed the NuVox *ex parte* as follows:

Third, NuVox claims that the absence of line cards in softswitches is evidence that all switch costs are traffic sensitive. This analysis ignores the potentially large fixed costs associated with a softswitch that are not related to line ports. Since softswitches resemble small computers, the appropriate analogy for estimating

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<sup>49</sup> AT&T Comments at 13.

<sup>50</sup> Declaration of Drs. Ankum and Denney at 17 and 18.

incremental cost would be the cost of additional memory cards, which could be inserted into the CPU.<sup>51</sup>

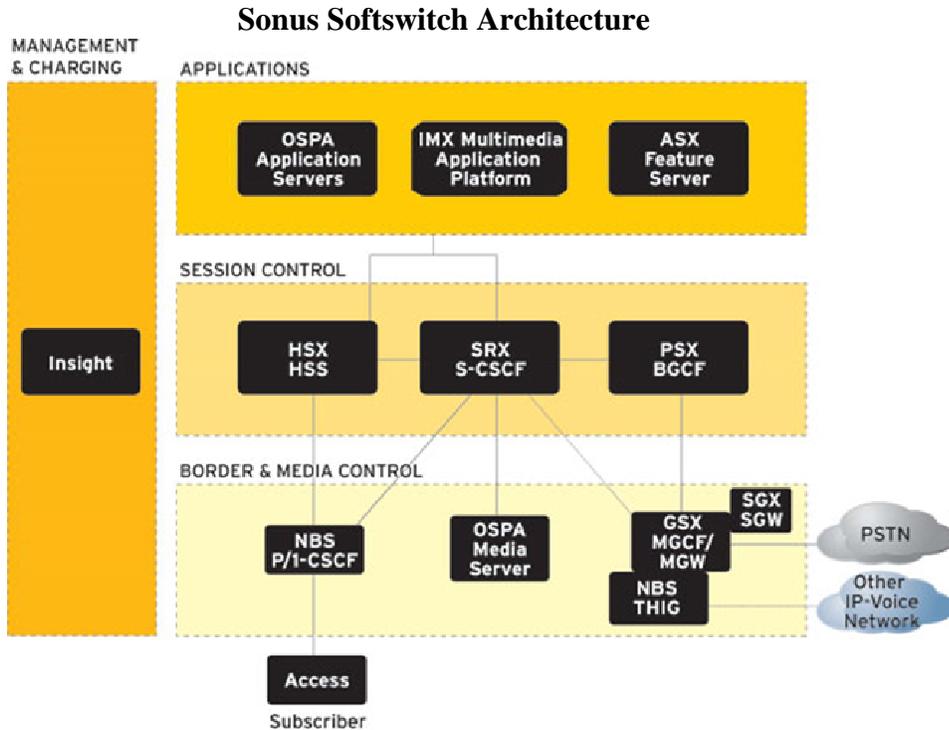
56. As AT&T's comments unequivocally confirms, however, softswitch expansions *are* driven by trunk port expansions, which in turn *are* driven by traffic volumes (or rather, in the context of the costing exercise, a hypothetical expansion to account for the total volume of terminating traffic). Further, because softswitches are sized to accommodate traffic,<sup>52</sup> it is obvious that a massive increase in the total volume of traffic – associated with call terminations – requires a *massive* expansion of softswitch facilities.
57. The schematic below depicts the basic layout of a Sonus softswitch<sup>53</sup> and supports the following line of reasoning: a massive increase in traffic volumes – associated with call terminations – requires a massive increase in the number of trunk ports, which in turn requires a massive increase in softswitches.

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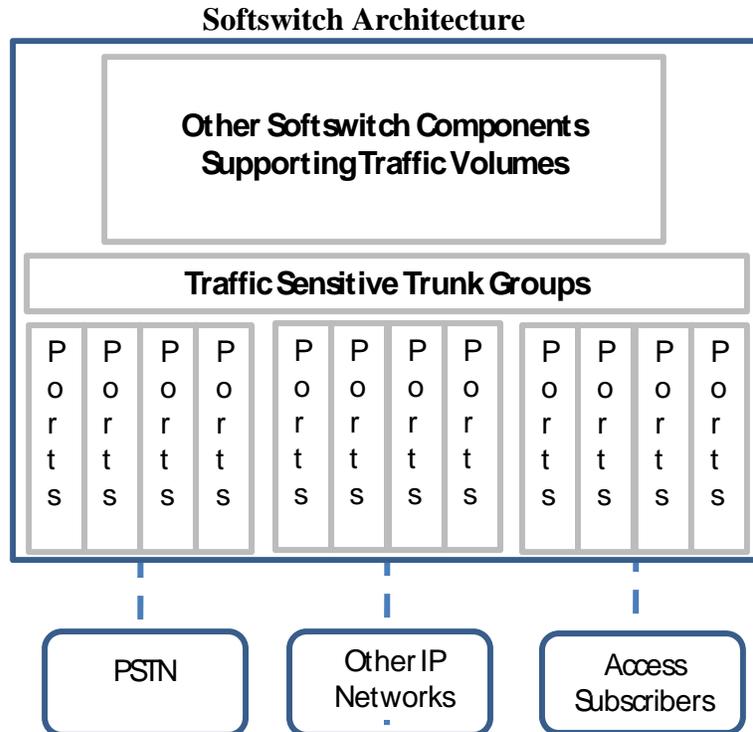
<sup>51</sup> FNPRM, Appendix A, ¶ 259.

<sup>52</sup> The FNPRM notes the scalability of softswitches: “[S]oftswitches are easily scalable, and thus the incremental cost of termination does not vary with the number of lines the switch serves.” (FNPRM, Appendix A, ¶ 274.) While we take issue with the assertion that softswitches are perfectly scalable (scalable over smaller ranges, say for CLECs and rural LECs and in the sense that per unit cost does not vary with scale), clearly, softswitches are sized to traffic where it concerns large volumes of traffic. That is, when traffic volumes are large, the costs associated with any “breakage,” inherent in the softswitch architecture, is small relative to the total costs of investments in softswitches needed to accommodate the total volume of traffic. As discussed herein, the issue of scalability is directly relevant to the question of whether smaller carriers are adequately compensated at rates based on larger carrier costs: we explain that they are not.

<sup>53</sup> Sonus is a manufacturer of softswitches used by many CLECs. The diagram is taken from [http://www.sonusnet.com/contents/brochures/Sonus\\_IMS\\_022006.pdf](http://www.sonusnet.com/contents/brochures/Sonus_IMS_022006.pdf)



58. The above diagram can be simplified for cost discussion purposes as follows:



Again, for costing purposes, the point is that the more traffic a carrier needs to terminate, the more ports are needed, and the more ports are needed, the more softswitch components/facilities are needed. Similarly, Embarq notes that “a soft switch is more sensitive to traffic volumes as it continuously sends voice packets throughout the duration of the call.”<sup>54</sup>

59. The cost implications are that the more softswitch components/facilities are needed, the larger a carrier’s total costs for terminating calls will be.
60. While the above discussion does not yet account for the costs of many other network components associated with the termination of traffic, such as transport and collocation, the Commission should recognize that AT&T’s comments regarding this issue directly *invalidate* the FNPRM’s assertions and its proposals.

***B. Arguments that a Unified Statewide Average Rate Is Consistent with a Free market outcome Are Misguided***

61. AT&T, Verizon, and a handful of others argue in favor of a unified statewide average rate for call termination.<sup>55</sup> While the support for this proposal comes in many forms, AT&T argues that a unified average rate is consistent with free-market outcomes. Specifically, AT&T notes:

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<sup>54</sup> Embarq Comments at 49. Embarq also notes that “The deployment of a soft switch as mentioned above would require the addition of several network components [the soft switch processor, IP switches, routers, firewall, session border controller and media gateways] all of which are sensitive to traffic volumes and result in significant additional costs. The transport network itself would have to be upgraded if carriers moved to soft switch architecture. Not only would more traffic be placed on the data network, which would require more resources, every element in the data network would have to be upgraded to provide redundancy, security, and to handle quality of service requirements.” *Id.*

<sup>55</sup> See, e.g., AT&T Comments at 5 and Verizon Comments at 42.

In other words, one carrier's network could be said to have "higher" forward-looking costs than the ILEC's network only to the extent that consumers might value any additional functionality it offers that the ILEC's network does not. *In a free market*, however, any determination of *what* consumers value and *how much* they value it should be left to consumers themselves. Shifting that inherently subjective inquiry to the regulatory process would add a chaotic new dimension to the regulatory uncertainty that has beset intercarrier compensation disputes since 1996.<sup>56</sup>

62. As a matter of economics, this argument is misguided for a number of reasons.
63. First, the FNPRM envisions that ILECs will be able to draw on universal service subsidies to make up for access revenue losses not recouped elsewhere.<sup>57</sup> This is true even for AT&T and Verizon, for whom the universal service subsidies would likewise provide a safety net in the event they are unable to recoup the access revenue losses in the market place and their earnings are adversely impacted. Given that the country is heading into a deep and possibly prolonged recession, it is not unlikely that both AT&T and Verizon will come to the USF – a government-mandated subsidy program – with hat in hand. In any event, the safety net provisions available to AT&T, Verizon, and others belie all the brazen "free-market" talk.
64. Second, in the case of intercarrier compensation, the "consumers" are other carriers, including interexchange carriers such as AT&T and Verizon. That is,

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<sup>56</sup> AT&T Comments at 15.

<sup>57</sup> The FNPRM proposed that rate of return carriers would be able to draw from the federal USF without any restrictions, while price cap carriers would need to make a showing of the need for additional moneys.

with the proper substitutions, AT&T and Verizon are in essence advocating the following: “what [AT&T and Verizon] value and how much they value it should be left to [AT&T and Verizon] *themselves*.” One does not need to be an economist to see that adopting a policy that follows this recommendation would be highly inappropriate.

65. Third, the free market analogy omits an essential aspect of free markets that is lacking in intercarrier traffic. In free markets, if a firm believes that it is not being adequately compensated, it is free to reduce output and scale back its operations or pick and choose its customers. That is, a firm in a free market could choose not to serve particular “*customers*” that are unwilling to pay a rate that compensates the firm at a price that allows the firm to recover its reasonable costs. This is decidedly not true for intercarrier traffic: *carriers are required to terminate all traffic sent to them by other carriers*. They are, so to speak, *captive suppliers*.
66. Thus, because carriers, as captive suppliers, do not have the recourse (and protections) of firms in free markets –to reduce output and scale back their operations or decline service to particular customers that demand service be provided below cost – it is essential that they receive adequate compensation.
67. Fourth, and closely related to the previous reason, the standing pricing paradigm in telecommunications utility regulation is that *regulated* prices for wholesale products and services are set at costs that are reflective of company specific conditions and circumstances so as to ensure adequate compensation.

68. This is certainly true for all unbundled network elements, OSS functions, resale products, and other products and services that *ILECs* are required to offer under the Telecommunications Act of 1996. None of these products and services is being offered at a unified state-wide averaged rate that applies to all *ILECs* under some claim that in competitive markets all carriers would have to meet the price of the least cost provider. Indeed, the Commission's own rules mandate that UNE rates be set for individual LECs by individual state, and state commissions employ distinct UNE cost zones for RBOCs to more accurately account for further cost differences that exist *within* a serving territory of a single RBOC.
69. The same has traditionally been true for switched access and special access services: they too have generally been offered at rates that reflect company and geographic market specific conditions and circumstances.<sup>58</sup>
70. To the extent that *ILECs* have been required to offer service at below cost rates, regulators have invariably provided for other support flows, either through universal service subsidies or subsidies embedded in above cost prices for other monopoly services (such as business lines subsidizing residential lines, etc.). In fact, we are not aware of any instance in which *ILECs* have been required to offer service at below cost rates without some offsetting revenue flows.

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<sup>58</sup> To the extent that *ILECs* have pricing flexibility for special access services, they have even greater ability to set rates at levels that ensure adequate compensation or to not offer the service at all (by setting a high price that stifles demand).

71. Dr. Alfred Kahn has made the same point on behalf of SBC (now AT&T). He noted:

I find such a situation astounding. As a regulator, I could not possibly have justified setting any rates – *unless they were explicitly subsidized by other rates* – at such a level that it would require the company to lose huge numbers of dollars out-of-pocket, unless I had made some sort of positive finding that its management was almost criminally negligent.<sup>59</sup> (Emphasis added.)

72. Ironically, these AT&T sponsored comments concern TELRIC prices were made in the context of SBC's considerable efforts at the time to ensure that TELRIC rates were adequately compensatory.

73. In sum, any proposal to ignore company specific costs and to impose unified statewide average rates is at odds with sound and longstanding public utility pricing practices.

***C. Unified Statewide Average Rates Are By Definition Unjust to Smaller Carriers and an Inappropriate Win-Win for the RBOCs***

74. Both AT&T and Verizon heartily embrace a unified statewide average intercarrier compensation rate. For example, Verizon notes:

[The Commission should] reject suggestions that different carriers should receive different compensation for terminating traffic, either by expressly establishing different terminating rates or by imposing disparate rights and obligations that effectively establish different compensation for some carriers.<sup>60</sup>

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<sup>59</sup> Testimony of Alfred E. Kahn before the House Public Utilities Committee and Senate Environment and Energy Committee of the Illinois State Legislature, Springfield, Illinois, May 5, 2003, page 2 and 3.

<sup>60</sup> Verizon Comments at 42.

AT&T makes similar recommendations in favor of a unified statewide average rate.<sup>61</sup>

75. AT&T's and Verizon's recommendations are wrong and opportunistic.
76. First, as we noted in our previous declaration, there are a number of obvious reasons why costs differ across companies:

It seems highly improbable that regulators can establish *a single rate* that is just and reasonable *for vastly different companies*. As with TELRIC-based UNE costs and rates, the Commission must recognize company-specific cost and rate deaveraging, so as to permit the rates to reflect company-specific conditions. Consider, for example, that within its merger-related conditions for AT&T, while the FCC required AT&T to “port” interconnection agreement *terms and conditions* from one state to another, it specifically did not require that AT&T “port” *rates* from one jurisdiction to another, and AT&T's UNE rates and interconnection agreements continue to vary from state to state. This was a clear acknowledgment on the part of both AT&T (and presumably the Commission in accepting and approving the conditions) that costs can differ between geographies. Likewise, costs differ between carriers (e.g. state commissions have been loath to adopt UNE rates from one carrier to be used by another – even within the same geographic area).

77. Clearly, as recognized by many other commenters, a unified statewide average rate will fail to adequately compensate carriers smaller than AT&T and Verizon.
78. The Commission should recognize that different carriers have different costs. For example, wireline and wireless carriers use switches in demonstrably different ways because wireless calls require a much higher degree of switch processor involvement (for example, because the switch needs to continuously

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<sup>61</sup> See AT&T Comments at 5.

track the location of the wireless call). This means that cost studies should differentiate between different types of carriers rather than run all costs through the “sausage maker” in an unjustifiable attempt to generate a one-size fit all rate.

79. The Commission should recognize the opportunistic nature of AT&T’s and Verizon’s recommendations. AT&T and Verizon, as the largest interexchange carriers,<sup>62</sup> would in effect receive huge discounts for their terminating long distance traffic, significantly reducing their costs and improving their bottom line. To the extent that they also may incur revenue reductions associated with their own access services, those revenue shortfalls would be largely offset by increases in local service rates for monopoly ratepayers and increased universal service subsidies. The ploy is transparently a *win-win* for AT&T and Verizon, and a *net loss* for almost all carriers that do *not* have monopoly ratepayers and/or receive universal service subsidies. Most importantly, from a public policy perspective, it would be a net loss for the nation’s ratepayers, who ultimately will end up paying higher local rates and see diminished competitive choices.

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<sup>62</sup> For example, based on the FCC Network Usage MOU reports, AT&T and Verizon’s share of interstate access minutes is 72% out of all ILECs.

***D. Many Commenters Fail to Recognize the Economic Difference between the Exchange of Local Traffic and Access Traffic – the Former Concerns Two-Way Compensation, the Latter Concerns One-Way Compensation***

80. A number of comments fail to differentiate between access traffic and the exchange of local traffic and instead analyze the economics of intercarrier compensation as if the two were the same. Of course, they are not: compensation for access traffic is one-way compensation; compensation for the exchange of local traffic is two-way compensation. As will be discussed presently, this distinction is critical in determining adequate levels of compensation.

81. For example, the Michigan Public Service Commission (“MPSC”) comments that rates should be symmetrical and reciprocal because no carrier has petitioned it for higher rates:

In accordance with the FCC’s findings, the MPSC has not received any filings in which a competitive carrier sought to establish their own higher costs and set a reciprocal compensation rate higher than the incumbent LEC’s. Therefore, the MPSC agrees with the FCC’s tentative mandate requiring, without exception, symmetrical reciprocal compensation rates.<sup>63</sup>

82. The MPSC’s reasoning is unsound. As noted, compensation for the exchange of local traffic is currently reciprocal and two-way. This means that as long as traffic is reasonably balanced between two carriers, the reciprocal compensation rates is relatively irrelevant as carriers only pay (or receive) the net-balance of their reciprocal invoices. The futility of engaging debates over

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<sup>63</sup> MPSC Comments at 7.

*two-way compensation* when traffic is reasonably balanced has been expressed by carriers when they refer to it as “pushing checks across the table.”

83. Thus, the observation that the MPSC “has not received any filings in which a competitive carrier sought to establish their own higher costs and set a reciprocal compensation rate higher than the incumbent LEC’s” is largely explained by the fact that competitive carriers need to set their priorities: It makes no economic sense for CLECs to expend their limited resources litigating for asymmetric reciprocal compensation rates when the net gain from such litigation would be negligible in light of the relative balance of local traffic exchanged. The Michigan PSC’s observation has absolutely no bearing, however, on the concern that carriers have with respect to *one-way compensation* for access traffic.
84. When a LEC terminates traffic for an IXC it will incur costs. The only way to get compensated for those costs is through access charges. That is, access traffic involves compensation that is one-way. This also means that if rates are inadequate and fail to compensate the LEC, the LEC will have unrecovered costs. In sum, unlike with two-way compensation, the level of rates for one-way compensation does matter. The MPSC failed to recognize this distinction, and thus its recommendations are flawed on this issue.

85. Verizon also fails to differentiate between one-way and two-way compensation. Verizon comments that rates established in “market based negotiations” should provide guidance and proceeds to note that it has interconnection agreements in place with CLECs at \$0.0007, which, Verizon claims, demonstrates that a rate of \$0.0007 per minute is presumptively reasonable:

Verizon Wireless has negotiated agreements with at least three different CLECs in five states in which the parties voluntarily agreed to the \$0.0007 per minute rate. Verizon Wireless has also negotiated at least 22 bill-and-keep agreements with CLECs, including Comcast. Verizon Wireless’ bill and keep agreement with Comcast was filed in 29 states.<sup>64</sup>

[...]

The Commission can therefore rely on evidence of negotiated, market outcomes to conclude that \$0.0007 per minute is a “reasonable approximation of the additional costs” of terminating calls and to cap the final uniform default terminating rate that can be set by the states can set under Section 252(d)(2) at \$0.0007 per minute.<sup>65</sup>

86. Of course, the agreements that Verizon has negotiated concern compensation for the exchange of local traffic and not compensation for access traffic. As explained above, compensation for the exchange of local traffic is two-way compensation, which means that the actual level of rates is not particularly relevant as long as traffic is reasonably balanced. (Again, it is “like pushing checks across the table.”) Thus, the fact that Verizon and some CLECs have voluntarily agreed to a rate of \$0.0007 per minute (or, a bill-and-keep

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<sup>64</sup> Verizon Comments at n. 65.

<sup>65</sup> Verizon Comments at 50-51.

arrangement) has absolutely no relevance at all to the question of what should be adequate compensation for access traffic, which is one-way compensation.

***E. Traffic Stimulation: Problems Emerge when Rates Are Significantly Out of Alignment with Costs – This is True for All Wholesale Products, Including Access Services***

87. A number of commenters, especially AT&T and Verizon, argue strenuously for additional prohibitions on revenue sharing (disparagingly referred to as traffic pumping). The arguments against and the recommendations for how to prevent revenue sharing, however, are generally misguided.
88. The following comments by AT&T are representative:

The Commission should put an immediate stop to “traffic-pumping” schemes, which, at the expense of ordinary consumers, churn out windfall profits for unscrupulous LECs with *grossly inflated access charges*. Specifically, the Commission should conclude that it is per se unjust and unreasonable for any LEC to assess access charges for calls to end users with whom the LEC has entered into a “revenue sharing” arrangement—*i.e.*, an arrangement that will produce net payments from the LEC to the calling provider over the life of the arrangement.<sup>66</sup>

89. To the extent there is a problem, it emerges, as recognized by AT&T, when *access charges are out of alignment with costs*. This observation is neither novel nor unique to access rates: the Commission and most policy makers and economist have long and consistently recognized that problems are likely to emerge when rates are out of alignment with costs.

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<sup>66</sup> AT&T Comments at 6.

90. The solution to any problems that emerge because rates are out of alignment with costs, however, is simple: *bring rates into alignment with costs*.
91. With respect to the perceived problem of traffic stimulation, the simple solution is to set access rates at levels that reflect a carrier's costs. If rates are set at levels that are adequately compensatory – but no higher – then (1) there are no artificial incentives for LECs to stimulate traffic beyond natural calling patterns, and (2) LECs will be deterred from revenue sharing since revenues are only adequate to compensate the LEC for its costs and would leave no room for payments to other entities.
92. Of course, the FNPRM's proposals will result in intercarrier compensation rates that almost certainly fail to provide adequate compensation to most LECs other than AT&T and Verizon. That is, rather than solving the industry's problems by bringing rates into alignment with costs, the FNPRM's proposal would wreak havoc by imposing rates that are in essence arbitrary and capricious and will cause, in turn, their own distortions and problems.

***F. The FNPRM's Expressly Below-Cost Rate Proposals Will Distort Special Access Markets and Cause Other Unintended Problems***

93. The previous section discussed that problems emerge when rates are out of alignment with costs (and solved when rates are brought into alignment with costs). One problem to almost certainly emerge from the FNPRM's proposed below-cost intercarrier compensation rates pertains to special access services.

94. As Cincinnati Bell notes in its comments, below-cost intercarrier compensation rates will distort special access markets:

By eliminating compensation to the LEC for the cost of transport from the “edge” to the customer and for end office switching, the Commission would eliminate the incentive for IXCs to purchase special access, because they could receive that same service for free. As a result, LECs will likely experience significant declines in special access revenue as well as the elimination of switched access revenue by the end of the 10-year transition period.<sup>67</sup>

95. This is but one distortion of what will undoubtedly be a host of serious but as of yet unknown distortions. The Commission should note that not all distortions can be identified in advance: the industry does not have a crystal ball. What we do know, however, is this: *below cost rates cause distortions*. This principle is fundamental to economics and public utility regulation and there is nothing in the FNPRM that explains why it does not also apply to intercarrier compensation rates.
96. In our impact analysis, discussed previously, we incorporated an estimated revenue shortfall due to special access erosions.

***G. AT&T and Verizon Are Inappropriately Seeking to Continue Their Abusive Self-Help Practices***

97. It is well established that Verizon and AT&T have consistently used their monopsony powers to extract undue concessions from CLECs to whom they terminate long distance traffic.

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<sup>67</sup> Cincinnati Bell Comments at 17.

98. Verizon now calls for the Commission to sanction these practices by arguing that carriers should be free to negotiate agreements outside the regime established by the FCC:

Any new terminating rate regime established by the Commission should be a default regime only – carriers *should be free* to negotiate commercial agreements that may depart from the default regime. This approach ensures that the industry continues to move toward *market-based* rates, and provides carriers the flexibility to adapt their agreements in response to changing business needs and evolving technologies. Permitting negotiated agreements also reduces the regulatory burden on state commissions by eliminating the need for regulatory involvement where the parties are able to reach mutually beneficial agreements on their own.<sup>68</sup> (VZ at 47)

99. While the FCC has previously permitted carriers to negotiate commercial agreements, such negotiations only work when parties have relatively equal bargaining power. The history in the industry is that BOCs have unlawfully enhanced their bargaining power by engaging in “self-help” practices that have been terribly destructive to the CLEC industry.<sup>69</sup> Rather than sanction self help, the FCC should once again expressly prohibit these practices.

## V. CONCLUSION

100. In this Declaration, we have demonstrated that the FNPRM’s proposals are ill considered and are driven more by desired outcomes than by sound

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<sup>68</sup> Verizon Comments at 47.

<sup>69</sup> For example, Integra’s November 26, 2008 comments (at p. 11) showed that commercially negotiated agreements for Qwest’s Local Switching (which followed the FCC’s elimination of the unbundled requirements for local switching as part of TRO) resulted in local switching rates that significantly exceed cost. Specifically, the commercial rates constitute 162% of cost on average for Qwest’s 14-state territory, and are as high as 210% in the state of Washington and 191% in Minnesota.

economics. Comments from carriers such as AT&T and Cincinnati Bell cast further doubts on the FNPRM's proposals. As we have shown, AT&T's comments regarding softswitches are further proof that the FNPRM fundamentally misunderstands the technology and economics of softswitches. Cincinnati Bell's comments, which point out the adverse impact on special access revenues, are yet another reminder of what has long been recognized by economist and policy makers: ad hoc pricing policies that disregard costs will lead to unintended consequences and distortions.

101. Last, we have provided an impact assessment and shown that the FNPRM's proposals could well lead to a \$9.9 billion revenue shortfall for the nation's local exchange carriers, that shortfall could not be recovered through the proposed SLC increases, and revenue neutrality for ILECs would more than double the current size of the high cost fund.

APPENDIX 1. CALCULATION OF THE REVENUE IMPACT

	Note	BOC			Other ILECs		
		Interstate	Intrastate	Total	Interstate	Intrastate	Total
<b>I. CURRENT PER MINUTE ICC REVENUE (2006)</b>							
Per-minute charges for originating or terminating calls							
Provided under state or federal access tariff	1	\$ 2,391	\$ 2,869	\$ 5,260	\$ 1,025	\$ 2,202	\$ 3,227
Provided as unbundled network elements or other contract arrangement	1	\$ 372	\$ 575	\$ 947	\$ 27	\$ 98	\$ 125
<b>TOTAL</b>		<b>\$ 2,763</b>	<b>\$ 3,444</b>	<b>\$ 6,207</b>	<b>\$ 1,052</b>	<b>\$ 2,300</b>	<b>\$ 3,352</b>
<b>Including:</b>							
Originating Access Revenue	1a	\$ 1,196	\$ 1,435	\$ 2,630	\$ 513	\$ 1,101	\$ 1,614
Terminating Access Revenue	1a	\$ 1,196	\$ 1,435	\$ 2,630	\$ 513	\$ 1,101	\$ 1,614
Assumed % Local Inter-carrier Compensation Other than ISP	1b	0%	90%		0%	95%	
Local Inter-carrier Compensation Revenue Other than ISP	1b	\$ -	\$ 518	\$ 518	\$ -	\$ 93	\$ 93
<b>II. TRAFFIC VOLUMES (2006)</b>							
AMOU	2	308,472,913,903	232,806,609,431		70,786,113,659	59,997,184,862	
Implied Local Inter-carrier Compensation MOU (Other than ISP)	3	-	191,666,666,667		-	34,481,481,481	
<b>III. CURRENT RATES</b>							
Implied Composite Access Rate per Min	4	0.0078	0.0123		0.0145	0.0367	
Assumed Composite Reciprocal Compensation Rate per Min	5	0.0027	0.0027		0.0027	0.0027	
<b>IV. SWITCHED ACCESS LINE COUNTS/USF LOOPS</b>							
	6			123,154,651			21,558,340
<b>V. STAGE 1 IMPACT: TERMINATING INTRASTATE ACCESS RATES ARE SET EQUAL TO INTERSTATE ACCESS</b>							
Stage 1 Terminating Access Rate		0.0078	0.0078		0.0145	0.0145	
Stage 1 Terminating AMOU	7	154,236,456,952	116,403,304,716		35,393,056,830	29,998,592,431	
Stage 1 Terminating Access Revenue (\$M)		\$ 1,196	\$ 902	\$ 2,098	\$ 513	\$ 434	\$ 947
Stage 1 Loss in Terminating Revenue (\$M)		\$ -	\$ 532	\$ 532	\$ -	\$ 667	\$ 667
Stage 1 Loss in Terminating Revenue (% Baseline)		0%	37%	20%	0%	61%	41%
Stage 1 Loss in Terminating Revenue per Access Line per Month			\$	\$ 0.36		\$	\$ 2.58

	Note	BOC			Other ILECs		
		Interstate	Intrastate	Total	Interstate	Intrastate	Total
<b>VI. STAGE 3 IMPACT: ALL TERMINATING INTERCARRIER COMPENSATION RATES ARE SET TO 0.0007</b>							
Stage 3 Terminating Rate		0.0007	0.0007		0.0007	0.0007	
Stage 3 Terminating MOU	8	154,236,456,952	308,069,971,382		35,393,056,830	64,480,073,912	
Stage 3 Terminating Access Revenue (\$M)		\$ 108	\$ 216	\$ 324	\$ 25	\$ 45	\$ 70
Stage 3 Loss in Terminating Revenue (\$M)		\$ 1,088	\$ 1,736	\$ 2,824	\$ 488	\$ 1,149	\$ 1,637
Stage 3 Loss in Terminating Revenue (% Baseline)		91%	89%	90%	95%	96%	96%
Stage 3 Loss in Terminating Revenue per Access Line per Month			\$	1.91		\$	6.33
<b><u>Including the Impact of Setting Reciprocal Compensation Rates to 0.0007</u></b>							
Stage 3 Terminating Rate		0.0007	0.0007		0.0007	0.0007	
Stage 3 Terminating MOU		-	191,666,666,667		-	34,481,481,481	
Stage 3 Terminating Revenue (\$M)		-	134	134	-	24	24
Stage 3 Loss in Terminating Revenue (\$M)		\$ -	\$ 383	\$ 383	\$ -	\$ 69	\$ 69
Stage 3 Loss in Terminating Revenue (% Baseline)			26%	26%		26%	26%
Stage 3 Loss in Terminating Revenue per Access Line per Month			\$	0.26		\$	0.27
<b>VII. IMPACT OF ORIGINATING ACCESS RATES SET TO ZERO</b>							
Final Originating Access Rate		0.0000	0.0000		0.0000	0.0000	
Originating AMOU		154,236,456,952	116,403,304,716		35,393,056,830	29,998,592,431	
Loss in Originating Revenue (\$M)	9	\$ 1,196	\$ 1,435	\$ 2,630	\$ 513	\$ 1,101	\$ 1,614
Loss in Originating Revenue (% Baseline)		100%	100%	100%	100%	100%	100%
Loss in Originating Revenue per Access Line per Month			\$	1.78		\$	6.24
<b>VIII. COMBINED IMPACT OF FINAL CHANGES TO TERMINATING AND ORIGINATING RATES</b>							
Loss in Revenue (\$M)		\$ 2,283	\$ 3,171	\$ 5,454	\$ 1,000	\$ 2,250	\$ 3,250
Loss in Revenue (% Baseline Total ICC Revenue)		83%	92%	88%	95%	98%	97%
Loss in Revenue per Access Line per Month			\$	3.69		\$	12.56
% Non Price Cap Other ILECs (based on MOU)						\$	1,406.3

APPENDIX 1. CALCULATION OF THE REVENUE IMPACT

	CLECs			TOTAL ILEC and CLEC
	Interstate	Intrastate	Total	Total Interstate and Intrastate
<b>I. CURRENT PER MINUTE ICC REVENUE (2006)</b>				
Per-minute charges for originating or terminating calls				
Provided under state or federal access tariff	\$ 362	\$ 577	\$ 939	\$ 9,426
Provided as unbundled network elements or other contract arrangement	\$ 54	\$ 385	\$ 439	\$ 1,511
<b>TOTAL</b>	<b>\$ 416</b>	<b>\$ 962</b>	<b>\$ 1,378</b>	<b>\$ 10,937</b>
<b>Including:</b>				
Originating Access Revenue	\$ 181	\$ 289	\$ 470	
Terminating Access Revenue	\$ 181	\$ 289	\$ 470	\$ 4,713
Assumed % Local Intercarrier Compensation Other than ISP	0%	100%		
Local Intercarrier Compensation Revenue Other than ISP	\$ -	\$ 385	\$ 385	\$ 996
<b>II. TRAFFIC VOLUMES (2006)</b>				
AMOU	46,703,134,602	35,247,173,824		754,013,130,281
Implied Local Intercarrier Compensation MOU (Other than ISP)	-	142,592,592,593		368,740,740,741
<b>III. CURRENT RATES</b>				
Implied Composite Access Rate per Min	0.0078	0.0164		0.0125
Assumed Composite Reciprocal Compensation Rate per Min	0.0027	0.0027		0.0027
<b>IV. SWITCHED ACCESS LINE COUNTS/USF LOOPS</b>			<b>27,474,972</b>	<b>172,187,963</b>
<b>V. STAGE 1 IMPACT: TERMINATING INTRASTATE ACCESS RATES ARE SET EQUAL TO INTERSTATE ACCESS</b>				
Stage 1 Terminating Access Rate	0.0078	0.0078		
Stage 1 Terminating AMOU	23,351,567,301	17,623,586,912		
Stage 1 Terminating Access Revenue (\$M)	\$ 181	\$ 137	\$ 318	\$ 3,362
Stage 1 Loss in Terminating Revenue (\$M)	\$ -	\$ 152	\$ 152	\$ 1,351
Stage 1 Loss in Terminating Revenue (% Baseline)	0%	53%	32%	29%
Stage 1 Loss in Terminating Revenue per Access Line per Month			\$ 0.46	\$ 0.65

	CLECs			TOTAL ILEC and CLEC	
	Interstate	Intrastate	Total	Total Interstate and Intrastate	
<b>VI. STAGE 3 IMPACT: ALL TERMINATING INTERCARRIER COMPENSATION RATES ARE SET TO 0.0007</b>					
Stage 3 Terminating Rate	0.0007	0.0007			
Stage 3 Terminating MOU	23,351,567,301	160,216,179,505			
Stage 3 Terminating Access Revenue (\$M)	\$ 16	\$ 112	\$ 128	\$	522
Stage 3 Loss in Terminating Revenue (\$M)	\$ 165	\$ 561	\$ 726	\$	5,187
Stage 3 Loss in Terminating Revenue (% Baseline)	91%	83%	85%		91%
Stage 3 Loss in Terminating Revenue per Access Line per Month			\$ 2.20	\$	2.51
<b><u>Including the Impact of Setting Reciprocal Compensation Rates to 0.0007</u></b>					
Stage 3 Terminating Rate	0.0007	0.0007			
Stage 3 Terminating MOU	-	142,592,592,593			
Stage 3 Terminating Revenue (\$M)	-	100	100		258
Stage 3 Loss in Terminating Revenue (\$M)	\$ -	\$ 285	\$ 285	\$	737
Stage 3 Loss in Terminating Revenue (% Baseline)		26%	26%		26%
Stage 3 Loss in Terminating Revenue per Access Line per Month			\$ 0.86	\$	0.36
<b>VII. IMPACT OF ORIGINATING ACCESS RATES SET TO ZERO</b>					
Final Originating Access Rate	0.0000	0.0000			
Originating AMOU	23,351,567,301	17,623,586,912			
Loss in Originating Revenue (\$M)	\$ 181	\$ 289	\$ 470	\$	4,713
Loss in Originating Revenue (% Baseline)	100%	100%	100%		100%
Loss in Originating Revenue per Access Line per Month			\$ 1.42	\$	2.28
<b>VIII. COMBINED IMPACT OF FINAL CHANGES TO TERMINATING AND ORIGINATING RATES</b>					
Loss in Revenue (\$M)	\$ 346	\$ 850	\$ 1,196	\$	9,900
Loss in Revenue (% Baseline Total ICC Revenue)	83%	88%	87%		91%
Loss in Revenue per Access Line per Month			\$ 3.63	\$	4.79
% Non Price Cap Other ILECs (based on MOU)					

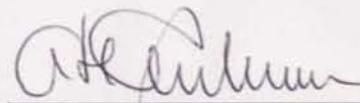
## Notes on Data Sources

- 1 From Telecom Industry Revenue Report for 2006 (released 8/8), Table 5 Line 304. 2006 is the most recent year available.
- 1a Traffic and revenue are assumed to be split 50/50 between originating and terminating directions. (There is no sufficient data for intrastate jurisdiction and smaller LECs to make a more detailed breakdown).
- 1b Per minute Interstate UNE/Other Revenue is assumed to be ISP-bound traffic (and as such, is excluded from further analysis). Per Minute Intrastate UNE/Other Revenue is expected to come from two sources, (1) reciprocal compensation and (2) UNE local and/or tandem switching (or their commercial substitutes.) To remove revenue associated with UNE switching, an assumption about the portion of intrastate UNE/Other Revenue associated with UNE switching is made. This portion is assumed to be 10% for BOCs, 5% for other ILECs and zero for CLECs based on the expectation that BOCs likely provide more UNE switching services (or their commercial substitutes) than other ILECs, while CLECs do not provide UNE switching.
- 2 Interstate AMOU for ILECs are from the FCC Network Usage MOU Reports (2006 used to match the revenue data). Interstate AMOU for CLECs are calculated as CLEC Revenue divided by the BOC access revenue per AMOU (this formula makes use of the current FCC rules under which CLECs access rates are tied to ILEC rates). Intrastate AMOU are calculated as Interstate AMOU \* ratio of State and Interstate DEMs for 2000 (DEM data are also from the FCC; 2000 is the last year for which DEM data are available). For CLECs the BOCs ratio was used.
- 3 MOU for Local Intercarrier Compensation other than ISP are calculated as revenues for Local Intercarrier Compensation Revenue Other than ISP divided by the assumed per min composite rate for UNE/other arrangements.
- 4 Access per minute revenue over AMOU.
- 5 Taken from QSI study that derived weighted average TELRIC-based composite reciprocal compensation rates (filed with NuVox 10/2/8 Ex Parte in docket CC No. 01-92 (Starkey Declaration, Exhibit 2). Conservatively assumes that non-BOC ILECs have the same weighted average composite reciprocal compensation rate as RBOCs.
- 6 ILEC lines are USF Loops (NECA filing for 2006). CLEC lines are taken from Trends Report, Table 7.1 (column 2 minus column 6).
- 7 Terminating AMOU are assumed to be 50% of total AMOU.
- 8 Terminating AMOU + MOU associated with UNE/other contract arrangements.
- 9 Originating access rates are assumed to be equal to terminating access rates for simplicity. (This is typically true for BOCs rates in the interstate jurisdiction. While in some state jurisdictions terminating rates may be higher than originating rates, in some other states the reverse is true.)

**VERIFICATION**

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

Executed this 22<sup>nd</sup> day of December, 2008.



August H. Ankum, Ph.D.

**VERIFICATION**

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

Executed this 22 day of December, 2008.



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Olesya Denney, Ph.D.