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

In the Matter of	)	
	)	
Unbundled Access to Network Elements	)	WC Docket No. 04-313
	)	
Review of Section 251 Unbundling	)	
Obligations of Incumbent Local	)	CC Docket No. 01-338
Exchange Carriers	)	

SUPPLEMENTAL FILING BY THE PENNSYLVANIA PUBLIC UTILITY COMMISSION OF ADDITIONAL RECORD EVIDENCE FROM STATE "9-MONTH" PROCEEDING

The Commission encourages state commissions to file state records and summaries of proceedings initiated in response to the *Triennial Review Order*, particularly the "9-Month" proceedings. NOPR at para. 15.

Pertinent parts of the record developed in Pennsylvania at our Docket No. I-00030099, including a summary of record evidence prepared by the presiding administrative law judge and comments thereto were previously submitted on CD-ROM by overnight mail to the Commission on October 5, 2004. Additional record evidence was inadvertently left out of Pennsylvania's previously submitted filing. Attached for your review is testimony that should also have been included, more specifically, the Office of Consumer Advocate (OCA) testimony of Rowland Curry and Dr. Bob Loube. The PA PUC expresses no opinion on the merits of the materials submitted since the PA PUC never had the opportunity to take official

action regarding this proceeding, but requests that it be included to supplement the materials previously filed.

RESPECTFULLY SUBMITTED,

_____

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Dated: October 4, 2004

Attachment A

BEFORE THE

PENNSYLVANIA PUBLIC UTILITY COMMISSION

Investigation into the Obligations of Incumbent Local Exchange Carriers to Unbundle Network Elements	)))	Docket No. I-00030099

DIRECT TESTIMONY OF DR. ROBERT LOUBE

AND MR. ROWLAND CURRY

ON BEHALF OF

PENNSYLVANIA OFFICE OF CONSUMER ADVOCATE

January 9, 2004

(Redacted Version)

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Exhibit RL-1, Table A-HHI for Pennsylvania Markets, Table B-determining minimum line count necessary to be a "trigger carrier"

Exhibit RC-1, Comparison of Line Counts with 3% Thresholds for Each Carrier in Each Market (Proprietary)

Appendix 1 C.V. of Dr. Robert Loube

Appensix 2 C.V. of Rowland Curry

Q: Please state your names and business addresses.

Dr. Loube: My name is Robert Loube. My business address is 10601 Cavalier Drive, Silver Spring, Maryland 20901.

Mr. Curry: My name is Rowland Curry. My business address is 1509 Mearns Meadow Blvd., Austin, Texas 78758.

Q: By whom are you employed and in what capacity?

Dr. Loube: I am the Director, Economic Research, Rhoads and Sinon, LLC.

Mr. Curry: I am self-employed as the Principal of Curry & Associates, an independent telecommunications consulting firm.

Dr. Loube and I have been retained by the Pennsylvania Office of Consumer Advocate ("OCA") to provide assistance and expert analysis in this proceeding concerning the petition of Verizon Pennsylvania, Inc. ("Verizon") to undertake the targeted, granular unbundling analysis and other related work assigned to the Pennsylvania PUC ("PUC" or "the Commission") by the Federal Communications Commission's ("FCC's") Triennial Review Order ("*TRO*")[1].

[1] *In the Matter of Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers, Implementation of the Local Competition Provisions of the Telecommunications Act of 1996, and Deployment of Wireline Services Offering Advanced Telecommunications Capability*, CC Docket Nos. 01-338, 96-98 & 98-147, Report and Order and Order on Remand and Further Notice of Proposed Rulemaking, FCC 03-36 (rel. Aug. 21, 2003) (hereinafter "*Triennial Review Order*" or "*TRO*").

Q: Please provide us with information regarding your relevant experience.

Dr. Loube: My consulting practice centers on providing expert advice to state agencies involved in telecommunications regulation. Prior to joining Rhoads and Sinon, LLC, I have worked for the FCC, the Public Service Commission for the District of Columbia, and the Indiana Utility Regulatory Commission. At those commissions I worked on issues associated with incremental cost, rate design, competition, universal service and separations. My vita is attached to this testimony.

Mr. Curry: I have 34 years experience in the telecommunications industry, predominantly focusing on state and federal regulatory policy and technological issues. Prior to beginning my consulting career in 2001, I worked on the staff of the Public Utility Commission of Texas (Texas PUC) for almost 25 years. My vita is attached to this testimony.

Q: Have you ever participated in proceedings before the Pennsylvania Public Utility Commission or other regulatory bodies?

Dr. Loube: Yes. I have testified as a staff witness in 18 cases before the Indiana Utility Regulatory Commission and 8 cases before the Public Service Commission for the District of Columbia. I am currently involved as a telecommunications consultant in proceedings in California and Nevada. I have also submitted affidavits attached to comments filed with the FCC.

Mr. Curry: Yes. I have provided advice and testimony for the OCA in several proceedings, including the collaborative workshops in (M-00011582), the proposed rulemaking

on telephone service quality (P-00021985), Verizon's Network Modernization Plan (P-00930715F0002), and the investigation into CLEC calling areas (I-00030096). While employed on the staff of the Texas PUC, I testified in, or was otherwise involved in, hundreds of proceedings. In addition, I am currently or have been involved as a telecommunications consultant in proceedings in California, Florida, Nevada, and Texas, as shown on my vita.

Q: What specific issues do you intend to address in this joint testimony?

Mr. Curry: We will address a number of technical and regulatory issues in support of the OCA's position in this proceeding, including the importance of Unbundled Network Elements (UNE) switching and Unbundled Network Element – Platform (UNE-P) to mass market residential customers, the definition of market areas, our analysis of the FCC defined triggers in Pennsylvania, the importance of batch hot cuts in these deliberations, and our overall findings as to impairment of competition in Pennsylvania.

In preparing this testimony, we have reviewed Verizon's initial Petition dated October 31, 2003 and Verizon's supplemental testimony dated December 19, 2003, as well as other filings, pleadings, and data responses in this proceeding.

I. THE *TRO*'S IMPACT ON MASS MARKET RESIDENTIAL CUSTOMERS

Q. What is the OCA's primary interest in this proceeding?

Mr. Curry: The decisions made by the Pennsylvania PUC in response to the FCC's *TRO* may have a very significant impact on the availability of competitive options for residential telecommunications customers.

Competition for residential customers relies heavily on the ability of competitive carriers to purchase UNE-P services from the incumbent carrier. The FCC's *TRO* proceeding essentially focused on determining whether competitive carriers are able to provide service without using UNE-P and the incumbent carrier's switch. To the extent that adequate competitive options are available, there should be no harm to the ability of customers to select competitive options. However, the OCA is very concerned that if the UNE-P elements are eliminated, Pennsylvania customers will no longer be able to benefit from competitive choice. In particular, the UNE-P for many customers is their only competitive option for local telephone service.

Q: How important is the role played by UNE-P in Pennsylvania's competitive market for residential and small business customers?

Mr. Curry: Data submitted in this proceeding show that there are over 315,600 residential lines, and over 128,700 business lines being served in Pennsylvania using UNE-P. Over half of the local customers served by CLECs in Verizon's Pennsylvania territory are served using UNE-P service.

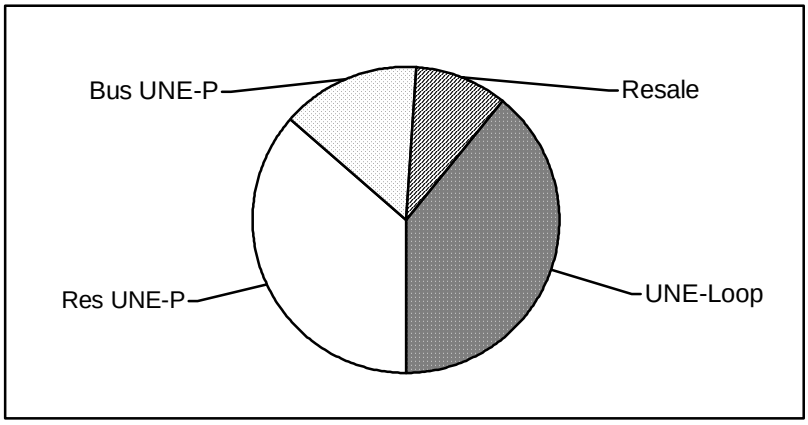

Chart 1: Competitive Services in Pennsylvania
(Source: Verizon Response to MCI 1-41)

Q: Have you been able to calculate an index of competition for the Pennsylvania markets?

Dr. Loube: Yes, I calculated the Herfindahl-Hirschman Index (HHI) for each market in Pennsylvania. The HHI ranges from 0 to 10,000. As the value approaches 10,000, the existence of a monopoly is indicated. Low values indicate competitive markets. In perfect competition, where each firm's market share is equal to 1 percent or less, the HHI would be at or below 100. The Department of Justice uses a post-merger value of 1,800 to indicate when a market has become highly concentrated and when further mergers in that market will raise significant competitive concerns.[2] The number of effective firms in a market can be determined by dividing the HHI into 10,000. For example, if there are five firms, each with a 20 percent share of the market, the HHI will be 2,000. Dividing 2,000 into 10,000 produces five equivalent firms.

[2] U.S. Department of Justice and the Federal Trade Commission, Horizontal Merger Guidelines, Issued: April 2, 1992, revised April 8, 1997, page 16.

Q: How did you calculate the HHI for Pennsylvania markets?

Dr. Loube: I used the Verizon retail residential lines and the Verizon count of Competitive Local Exchange Carrier ("CLEC") mass market lines by market. The Verizon count of retail residential lines underestimates the Verizon share of the facilities-based mass market because it excludes the Verizon mass market business customers. The Verizon count of CLEC mass market lines over-estimates the CLEC counts because, in many instances, the CLECs report fewer lines than Verizon reports for the same CLECs. **[Begin Proprietary Information]**

[3] **[End Proprietary Information]** Therefore, by using Verizon line counts, my calculations will report more competition than actually exists. This example also demonstrates how the Commission cannot rely upon Verizon's line number estimates.

Q: What were the results of your calculations?

Dr. Loube: My results demonstrate that Verizon continues to dominate every Pennsylvania market. The HHI ranges from 5,719 to 9,238, and the number of equivalent firms ranges from 1.08 to 1.75, depending on the market. The lowest HHI is 3 times higher than the Department of Justices' indicator of a highly concentrated market.

[3] Supplemental Direct Testimony of Harold E. West, III and Carlo Michael Peduto, II on behalf of Verizon Pennsylvania Inc. and Verizon North Inc., Exhibit 1, Part A.

Because the number of effective firms is less than 2 in every market, the sum of the impact of all other firms never generates a second firm that is equal to Verizon. Individual market results are shown in Exhibit RL-1, Table A.

Q: In what ways do the *TRO* issues threaten the availability of UNE-P?

Mr. Curry: In the Triennial Review proceeding, the FCC examined whether CLECs are ***impaired*** or ***not impaired*** without access to incumbent carriers' network facilities and switching on an unbundled basis. With respect to circuit switching, a finding of "no impairment" would indicate that competitors should be able to provide service without using UNE-P and the incumbent carrier's switch. Based on that decision, the incumbent carrier would no longer be required to offer the circuit switching element on an unbundled basis at Total Elemental Long Run Incremental Cost (TELRIC) prices to competitors. With a finding that competitors are, in fact, impaired without access to the incumbent carrier's network, the incumbent carrier would be required to continue offering the UNE-P option at TELRIC prices.

Q: How was this issue resolved by the FCC?

Mr. Curry: From the standpoint of circuit switching, which is the key to UNE-P service, the FCC first found "on a national basis, that competing carriers are impaired without access to unbundled local circuit switching for mass market customers … based on evidence in our record regarding the economic and operational barriers caused by the cut over process."[4] Further, the FCC recognized that a more geographically

[4] *TRO*, ¶ 459.

specific record may identify particular markets where there is no impairment and asked states to apply FCC-defined triggers measuring existing switch deployment serving this market and, if necessary, "consider operational and economic barriers to switch deployment to serve this market."[5]

Q: Who are "mass market" customers?

Mr. Curry: Generally speaking, residential and small business customers are referred to as "mass market" customers, while medium and large business customers are called "enterprise" customers. The FCC defines mass market customers as those who purchase a limited number of "POTS" (Plain Old Telephone Service) voice-grade lines, and can only be economically served using DS0 (single-line, voice-grade) loops. The FCC left to the states the more precise identification of the cross-over point where it may be more economical to use DS1 (digital carrier) systems to serve a number of customers rather than individual single lines. Absent significant evidence to the contrary, however, the FCC established a default cutoff of four lines.[6] Customers with three or fewer DS0 lines are to be considered mass market customers, unless the PUC determines otherwise.

Q: What do you see as the overall key to this proceeding?

Mr. Curry: This proceeding, alongside similar proceedings in other states, will determine whether the competitive plan adopted by Congress in the 1996 Telecommunications

[5] *Id*, ¶ 494.

[6] *Id*, ¶ 497. In the *UNE Remand Order* (15 FCC Rcd at 3822-31), the FCC determined that incumbent LECs that make the EEL combination available are not obligated to provide unbundled local circuit switching to requesting carriers for serving customers with four or more DS0 loops in density zone one of the top fifty MSAs.

Act[7] has progressed to the point where the incumbent carriers no longer are required to provide unbundled switching.

Competition has not yet gained a strong enough foothold to eliminate the key local circuit switching element in <u>any</u> market in Pennsylvania. If the Commission finds "no impairment" and retracts that element, then competition will be diminished and customers will no longer receive the benefits of competitive choice: lower prices and improved services.

II. THE DEFINITION OF MARKET AREA

Q: What is the purpose of defining the market area?

Dr. Loube: As indicated by Mr. Curry, the FCC has found "on a national level, that requesting carriers are impaired without access to unbundled local circuit switching when serving mass market customers. This finding is subject to a more granular review by the states…in specific geographic markets."[8] Therefore, the FCC directs state commissions to perform a "granular market-by-market analysis of impairment."[9] In order to perform such analysis, a definition of "market" is required.

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[7] Telecommunications Act of 1996, Pub. L. No. 104-104, 110 Stat. 56, codified at 47 U.S.C. §§ 251 *et seq*.

[8] *TRO*, ¶ 419.

[9] *Id*, ¶ 424.

Q: How does the FCC *TRO* define "market?"

Dr. Loube: The *TRO* does not define "market." Instead, the FCC directs state commissions to define "market." "State commissions must define the markets in which they will evaluate impairment by determining the relevant geographic area to include in each market."[10] The FCC "delegate[s] authority to state commissions to ensure that the unbundling rules are implemented on the most accurate level possible while still preserving administrative practicality."[11]

Q: Does the FCC provide guidance for the state commissions in determining the definition of "market?"

Dr. Loube: Yes. The FCC offers state commissions guidance in determining the definition of market to be used in the granular impairment analysis.

Q: Please elaborate on the FCC's guidance to state commissions.

Dr. Loube: Broadly, the *TRO* states, "state commissions have discretion to determine the contours of each market, but they may not define the market as encompassing the entire state."[12]

More specifically, as described in the *TRO*, and codified in new §51.319(d)(2)(i),[13] the FCC directs state commissions to define the markets in which it will evaluate impairment by taking into consideration the location of mass market customers

[10] *Id*, ¶ 495.

[11] *Id*, ¶ 130.

[12] *Id*, ¶ 495.

[13] *See* Part 51 of Title 47 of the Code of Federal Regulations.

actually being served by competitors, the variation of factors affecting competitors' ability to serve each group of customers, and the competitors' ability to target and serve specific markets profitably and efficiently using current technologies.[14]

Q: Does the FCC provide additional guidance?

Dr. Loube: Yes. The FCC further advises that "[w]hile a more granular analysis is generally preferable, states should not define the market so narrowly that a competitor serving that market alone would not be able to take advantage of available scale and scope economies from serving a wider market."[15] Moreover, "state commissions should consider how competitors' ability to use self-provisioned switches or switches provided by a third-party wholesaler to serve various groups of customers varies geographically and should attempt to distinguish among markets where different findings of impairment are likely."[16]

The FCC acknowledges that state commissions may have already established methods to identify markets, such as UNE loop rate zones, intrastate universal service mechanisms, and retail ratemaking, and concludes that "already defined markets would be appropriate to use…" in the granular impairment analysis.[17]

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[14] *TRO*, ¶ 495.

[15] *Id*, ¶ 495.

[16] *Id*, ¶ 495.

[17] *Id*, ¶ 496.

Lastly, the FCC *TRO* asserts, "the market definitions used for the analysis of the triggers must also be used for the second step of the analysis, if the triggers are not satisfied."[18]

Q: How should the PUC use the FCC's guidelines to determine reasonable geographic markets?

Dr. Loube: The PUC should establish markets that facilitate the determination of whether new entrants are impaired without the ability to secure the use of the combined UNEs, commonly known as UNE-P. Impairment occurs "when lack of access to an incumbent LEC [local exchange carrier] network element poses as a barrier to entry, including operational and economic barrier, that are likely to make entry into a market uneconomic."[19] Thus, the geographic boundaries of the market should reflect those factors that affect the profitability of competitive entry. Such factors as retail and wholesale rates, economies of scale and sunk cost drive the profitability of entry and should be important attributes impacting the PUC's market determination. The PUC must focus on these conditions that allow new entrants the opportunity to establish long term profitability. At the same time, the markets should be as granular as possible, allowing the new entrants to minimize their need to obtain large scale investments that might be beyond their ability to finance in the capital markets. Overall, the market should be defined as such so that it does not remove the only available competitive alternative for a customer, as the

[18] *TRO* at footnote 1540.

[19] *TRO*, ¶ 84.

ultimate objective of this proceeding should be to promote competition, not hinder competition.

Q: What factors affect the profitability of the new entrants?

Dr. Loube: The two most important factors affecting the entrants' profitability are the revenue it might be able to obtain and the cost of serving its customers. Its revenue opportunities are dependent on the incumbent's rates because a new entrant will not be able to charge as much as the incumbent and in many instances must charge less than the incumbent in order to attract the customers away from the incumbent. The entrant's costs are the sum of any self-provisioned facilities and overhead costs along with any network elements its purchases from the incumbent. The element that most entrants will likely continue to purchase is the loop. Thus, in defining an appropriate market, the factors that affect the entrant's profitability and that the PUC should be concerned with are the retail local rate and the UNE Loop rate.

Q: Please explain how economies of scale affect cost and profitability.

Dr. Loube: Economies of scale refers to the decrease in average cost associated with increases in output. For example, using the switching equations embedded in the FCC's synthesis model, when the number of lines served increases from 1000 to 5000, average monthly investment related cost decreases from $6.46 to $2.07. However, when the number of lines served increases from 20,000 to 25,000, the average monthly investment-related cost decreases from $1.25 to $1.20, showing that economies of scale are important at low levels of output, but after a certain

minimum efficient scale, become relatively unimportant. Of course, scale economies in one function can be offset by diseconomies in another. The large switch could put pressure on transport and marketing, causing increases in the costs of these functions. Therefore, the market should be large enough to allow firms to exploit scale economies but not too large that the size of the market starts endangering profitability.

Q: Please explain sunk costs and how they affect profitability.

Dr. Loube: Sunk costs are costs that cannot be recovered when a carrier exits a market. Sunk costs may include advertising to create brand loyalty, and spending to create a marketing network. Costs such as switches are generally thought to be fixed rather than sunk because the carrier may be able to sell the switch to an alternative carrier upon exiting the market. However, installation costs and out-of-date software associated with a switch can be sunk. Further, if the remaining carriers have sufficient switch capacity to meet the market demand, the exiting carrier may not be able to recover a significant portion of its switch investment. Moreover, if switch manufacturers refuse to support the resold switches, then the market for those switches will not be robust.

Given the existence of these sunk costs, an entrant will have to make large investments to enter the market and the capital markets could evaluate these investments as risky compared to the incumbents' investments. The high risk associated with the sunk investments will increase the entrant's cost of capital and reduce its profitability.

Q: What geographic region should the PUC use to define "market?"

Dr. Loube: The PUC should define the markets as the density cells within the MSAs. Such a definition is consistent with the FCC's guidelines and will facilitate any impairment analysis that the PUC might undertake during further phases of this proceeding.[20] The local retail rates and UNE-Loop rate are fairly constant across the density cells. Therefore, the opportunity to earn a profit or to judge whether an entrant is impaired without access to the local circuit switching and common transport UNEs can be evaluated. The CLECs can make reasonable decisions about whether they should enter the market because they determine what alternatives the customers may choose from in a consistent manner. Due to the relatively small size and compactness of density cells 1, 2 and 3, it appears that a CLEC should be able to build a reasonably efficient backhaul network to bring the traffic back from the incumbent's wire centers to the CLEC switch. The boundaries of the market are administratively easy to determine and are available to all current or potential entrants. Moreover, if the incumbent decides to change any retail rates, those changes will usually occur at the density cell level. Therefore, any changes in the expected profits of the entrant can also be evaluated at the density cell level.

[20] The FCC encourages the use of UNE zones as markets when UNE loop rates vary significantly across the state. *See TRO*, footnote 1538.

Q: Are there any exemptions to your general recommendation to use density cells to define geographic markets?

Dr. Loube: Yes. In the Scranton-Wilkes-Barre MSA, the wire centers that serve the city of Hazleton, which are in Density Cell 3, should be excluded from the list of wire centers that are included in the Scranton-Wilkes-Barre density cell 3 market. The exemption is due to the fact that Hazleton is not contiguous or located close to the other cities in the MSA. Therefore, the ability to build a compact and efficient backhaul network for the MSA would be compromised if Hazleton were included in the market definition. The failure to build an efficient backhaul network could lead to a finding of impairment when the more granular market that includes only Scranton and Wilkes-Barre would not. Thus, because of the general direction to establish markets that are granular and because of the difficulties that might be incurred in building an efficient backhaul network, I recommend that the wire centers that serve the city of Hazleton be excluded from the Scranton-Wilkes-Barre market.

Q: Should the PUC use the entire Metropolitan Statistical Areas (MSAs) for the definition of geographic markets?

Dr. Loube: No. The MSAs are not granular enough to be used as markets for the purposes of determining whether an entrant is impaired without access to a particular UNE. Within each MSA there are at least two density cells and in the case of Philadelphia and Pittsburgh MSAs, there are four density cells. It is possible that an entrant could be impaired in one of the cells but not the others. If the decision to determine

whether to eliminate the access to the local circuit switching UNE was made on the MSA level, then there could be areas where impairment exists but the switching UNE is not available. On the other hand, if the PUC determined that entrants were entitled to access to the local circuit switch UNE, then there could be areas where no impairment exists, but carriers still had the right to use the UNE.

In addition, the MSAs contain many small towns and rural areas that are in density cell 4. For example, the town of Smithfield in Fayette County is at the edge of the Pittsburgh MSA. Using a MSA market definition would include it within the Pittsburgh MSA and could deny a CLEC the use of the UNE-P to serve Smithfield customers. Obviously, given the difference between the UNE Loop rate in Smithfield and downtown Pittsburgh, the ability for a CLEC to serve a customer is significantly different in these areas and these two communities should not be placed in the same market.

Moreover, the MSA boundaries are controlled by the United States Office of Management and Budget ("OMB") rather than by the PUC. They are not designed to evaluate impairment issues, and can be changed without regard to telephone market realities. The OMB statistical area design criteria are based on population and commuter standards.[21] These standards do not necessarily follow telephone traffic patterns and do not follow the factors that determine impairment such as local retail rates and UNE rates.

[21] Federal Register, Vol. 65, No. 249, 82228-82238, Wednesday, December 27, 2000.

Finally, if MSAs were adopted as market areas, the PUC would have to re-evaluate its impairment findings every time OMB changed the MSA boundaries, as OMB recently did when it removed Lebanon from the Harrisburg-Carlisle MSA, and added Armstrong County to the Pittsburgh MSA.

Q: Does the FCC direct the state commissions to rely on its access pricing rules and the MSA guidelines in those rules to establish markets in this proceeding?

Dr. Loube: No. Verizon witnesses West and Peduto were incorrect when they tried to transfer the FCC's reasoning related to access pricing to UNE impairment analysis.[22] The FCC rejected using the access rules because the pricing flexibility rules "go to protecting consumers from anticompetitive pricing, which is not the same as our unbundling rules, which go to asking whether entry into a market is economic and to serving a host of statutory goals beyond protecting consumers from anticompetitive pricing."[23]

Q: How does your definition of the market differ from Verizon's definition?

Dr. Loube: In practice, excluding my Hazleton exception, Verizon and I support the same market definition, the density cells within the MSAs. Verizon's preference, however, is to use MSAs as market areas. Verizon's witnesses West and Peduto state that "[a]mong the existing definitions, Metropolitan Statistical Areas

[22] Direct Testimony of Debra M Berry and Carlo Michael Peduto II on behalf of Verizon Pennsylvania Inc. adopted by Harold E. West III, page 11 line 14 to page 12 line 1.

[23] *TRO*, ¶ 104.

("MSAs") and Density Cells are the most appropriate."[24] Thus, it appears that Verizon is supporting two different market definitions, MSAs and density cells within MSAs. Of these two alternatives, West and Peduto explain why MSAs are the preferred market area because "MSAs meet each of the three criteria for defining the market established by the FCC."[25] I disagree with West and Peduto. As I stated above, the MSAs should not be used as market areas because they do not provide a sufficient granular playing field for the determination of impairment.

Verizon witnesses West and Peduto offer as an alternative to MSAs that "the Commission may choose to define the market more narrowly, by differentiating among the pricing Density Cells within those MSAs."[26] My position is that the PUC not only may but should choose to use the Density Cells within the MSAs because the density cells more closely match the need to define markets according to the requirements of the impairment standard. Moreover, in each instance where Verizon asks the PUC to determine that the trigger mechanism has been met, Verizon uses the density cells within the MSAs as the market.[27]

Q: Should the PUC use individual wire centers to define the geographic market?

Dr. Loube: No. While an individual wire center is the most granular area that could be used to define the market, it should not be used to define the market because the factors that

[24] Direct Testimony of Debra M. Berry and Carlo Michael Peduto II on behalf of Verizon Pennsylvania Inc., adopted by Harold E. West III, page 11, 7-8.

[25] *Id*, page 12, lines 3-4.

[26] *Id*, page 13, lines 6-7.

[27] *Id*, page 33, lines 12-14, and Supplemental Direct Testimony of Harold E. West, III and Carlo Michael Peduto, II, on behalf of Verizon Pennsylvania Inc, and Verizon North Inc., page 6, lines 2-8.

affect an impairment analysis generally affect a geographic area that is larger than the wire center. First, the ILEC's retail rate is not unique to a particular wire center level. Second, because UNE loop rates are set at the density cell level, the major cost of service does not change from wire center to wire center within the density cell. Third, efficient backhaul networks would not be created for an individual wire center. Rather they would be established for a group of wire centers that are geographically related. Finally, marketing expenses are usually incurred over an area much larger than the wire center.

Q: Is there another method for the determining geographic markets that could guide the PUC in its search for reasonable markets?

Dr. Loube: Yes. Antitrust investigations have long analyzed the problem of determining a geographic market. The principles used in these investigations are incorporated in the Horizontal Merger Guidelines (HMG). These guidelines start at the most granular level and increase the size of the market until it is possible to establish market power with a sustained price increase. The ability to sustain the price increase is dependent on cost advantages that are to some extent generated by economies of scale and sunk costs that we have used to determine that density cells are best. Our analysis also starts with the most granular and then stops when a threshold is reached. That is, I have analyzed whether the market should be defined at the most granular level, the wire center and compared that market to larger markets, such as the density cell and the MSA. Following the FCC's guidance, I provide a different analysis than is used in antitrust work due to the fact that the

threshold we are seeking is the profitability of the entrant rather than the ability to sustain a non-competitive price.[28] Thus, I am informed and instructed by the merger guidelines but not determined by those guidelines. As such our analysis is consistent with generally accepted practices of determining geographic markets.

III. SWITCHING IMPAIRMENT AND TRIGGER ANALYSIS

Q: What is local circuit switching?

Mr. Curry: Local circuit switching represents the provision of basic local switching equipment in a customer's community. This function is a key part of the provision of basic local telephone service, and is currently classified as an UNE in the FCC's interconnection architecture. In the *TRO*, the FCC defines "local circuit switching to encompass line-side and trunk-side facilities, plus the features, functions and capabilities of the switch," including "the basic switching function of connecting lines to lines, lines to trunks, trunks to lines, and trunks to trunks."[29] In addition, "the features, functions, and capabilities of the local circuit switching UNE also include the same basic capabilities that are available to the incumbent LEC's customers, such as telephone number, directory listing, dial tone, signaling, and access to 911, and in [certain] cases…operator services and directory assistance."[30]

[28] *Id*, ¶ 111.

[29] *Id*, ¶ 433.

[30] *Id*, ¶ 433.

(The incumbent LEC must offer unbundled access to operator services and directory assistance services if it does not provide customized routing.[31])

Q: What does the *TRO* say about the availability of unbundled incumbent LEC local switching for the mass market?

Mr. Curry: Before addressing the issues of geographic markets and trigger analysis, the FCC found "on a national basis, that competing carriers are impaired without access to unbundled local circuit switching for mass market customers … based on evidence in our record regarding the economic and operational barriers caused by the cut over process."[32] The FCC further directed states to "approve, within nine months of the effective date of this Order, a batch cut migration process to be implemented by incumbent LECs that will address the costs and timeliness of the hot cut process."[33] We will discuss OCA's position with respect to batch hot cuts in Section IV of this testimony.

Q: Assuming that the hot cut process issue is resolved, what is the next step in evaluating impairment related to local circuit switching elements?

Dr. Loube: The FCC finds "on a national level that requesting carriers are impaired without access to unbundled local circuit switching when serving mass market customers. This finding is subject to a more granular review by the states pursuant to specifically enumerated triggers and other operational and economic criteria

[31] *TRO* at footnote 1327.

[32] *TRO*, ¶ 459.

[33] *Id*, ¶ 488.

regarding facilities-based entry in specific geographic markets."[34] The *TRO* institutes "a more granular market-by-market analysis of impairment on a going forward basis."[35]

Q: Please elaborate on the granular review to be performed by state commissions.

Dr. Loube: In the *TRO* decision, as codified in new §51.319(d)(5)(i), the FCC directs "the states to identify where competing carriers are impaired without unbundled switching, pursuant to the triggers and analysis of competitors' potential to deploy."[36] The *TRO* explains that state commissions should "follow a two-step process in determining whether to find "no impairment" in a particular market. In the first step, states will apply self-provisioning and wholesale triggers to a particular market to determine if the marketplace evidence of deployment of circuit switches serving the mass market requires a finding of no impairment."[37] If the triggers are satisfied, that is, if the states determine that the level of competition in a particular market is adequate to find that there is "no impairment", then there is no need to go to the second step.

Q: How many triggers does the first step of analysis include?

Dr. Loube: There are two triggers in the first step of the analysis. The FCC recognizes that "a more granular analysis may reveal that a particular market is not subject to

[34] *Id*, ¶ 419.
[35] *Id*, ¶ 424.
[36] *Id*, ¶ 473.
[37] *Id*, ¶ 494.

impairment in the absence of unbundled local circuit switching. We [the FCC] therefore set forth two triggers that state commissions must apply in determining whether requesting carriers are impaired in a given market."[38] The two triggers are the self-provisioning trigger and the wholesale trigger. The FCC clearly directs the state commissions to "examine these triggers first in their analysis."[39]

Q: Please describe the self-provisioning trigger.

Dr. Loube: The first trigger, the self-provisioning trigger, considers "evidence of competitive LEC circuit switch deployment."[40] In the *TRO*, the FCC finds that "evidence of self-deployment is the best indicator of whether competitive LECs have been able to overcome barriers to entry with respect to facilities deployment."[41] "First, where a state determines that there are three or more carriers, unaffiliated with either the incumbent LEC or each other, that are serving mass market customers in a particular market using self-provisioned switches, the state must find "no impairment" in that market."[42]

The FCC believes "the existence of three self-provisioners of switching demonstrates adequately the technical and economic feasibility of an entrant serving the mass market with its own switches, and indicates that existing barriers

[38] *Id*, ¶ 461.
[39] *Id*, ¶ 461.
[40] *Id*, ¶ 435.
[41] *Id*, ¶ 435.
[42] *Id*, ¶ 462.

to entry are not insurmountable."[43] "The competitive switch providers should be actively providing voice service to mass market customers in the market."[44]

Q: Please describe the wholesale trigger.

Dr. Loube: The second trigger, the wholesale trigger, examines the availability of wholesale switching alternatives.[45] "Second, a state must find no impairment when it determines that there are two or more competitive wholesale suppliers of unbundled local circuit switching, unaffiliated with the incumbent or each other."[46]

The FCC finds that "this test will ensure that local circuit switching can readily be obtained from a firm using facilities that are not provided by the incumbent."[47] "Identified carriers providing wholesale service should be actively providing voice service used to serve the mass market and be operationally ready and willing to provide wholesale service to all competitive providers in the designated market."[48]

Q: Do you have further comment regarding the triggers?

Dr. Loube: Yes. According to the *TRO*, both triggers require the competitive carriers to be "using or offering their own separate switches" and "should be actively providing voice grade service to mass market customers in the market."[49] Furthermore, the

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43 *Id*, ¶ 501.

44 *Id*, ¶ 499.

45 "While the record shows that such wholesale alternatives are not generally available at this time…such alternatives may well develop in the future." *TRO*, ¶ 504.

46 *TRO*, ¶ 463.

47 *Id*, ¶ 504.

48 *Id*, ¶ 499.

49 *Id*, ¶¶ 499 and 509.

FCC prohibits state commissions from evaluating other factors, "such as the financial stability or well-being of the competitive switching providers."[50] "The key consideration to be examined by state commissions is whether the providers are currently offering and able to provide service, and are likely to continue to do so." [51]

Q: Does the FCC's errata change to paragraph 499 of the *TRO* alter the way state commissions implement the trigger mechanisms?

Dr. Loube: Yes. The errata deleted the phrase "should be capable of economically serving the entire market."[52] This relieves the CLEC from the responsibility to completely duplicate the service capabilities of the existing incumbent carrier across the entire market.

Q: Is a state commission required to count every CLEC offering services in the market when the state commission implements the trigger mechanisms?

Dr. Loube: No. The CLEC must **actively** seek to serve the market. For example, if the market covers an area of 20 exchanges, a CLEC serving only 18 of those exchanges could be counted as one of the trigger CLECs. However, if the CLEC is only serving 2 of the exchanges, the state commission may find that the CLEC is not actively serving

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[50] *Id*, ¶ 500.

[51] *Id*, ¶ 500; "For instance, states should review whether the competitive switching provider has filed a notice to terminate service in that market." *TRO* at footnote 1556.

[52] *In the Matter of Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers, Implementation of the Local Competition Provisions of the Telecommunications Act of 1996, Deployment of Wireline Services Offering Advanced Telecommunications Capability*, CC Docket Nos. 01-338, 96-98, 98-147, *Errata*, released Sept. 17, 2003, FCC 03-227, Number 21.

the market. The state commission does not have to count such a CLEC, because the FCC noted:

> For example, if the marketplace evidence shows that new entrants have deployed a certain type of facility, we will consider the facts as evidence that the barriers to entry in that market for that element are surmountable. In deciding what weight to give this evidence, we will consider how extensively carriers have been able to deploy such alternatives to serve what extent of the market, and how mature and stable that market is.[53]

If the state commission finds that a carrier is not serving the market to a sufficient extent, that commission can exclude the carrier from the count used to meet a particular trigger.

Moreover, in instances where two carriers serve significant parts of a market and a third carrier serves only a small segment of the market, the PUC should not determine that the trigger mechanism has been met for the entire market. Instead, the PUC should redefine the market to include only the small segment of the market served by the third carrier, and finding that impairment still exists in the large segment of the market.[54]

Q: What guidance does the FCC provide regarding whether a CLEC is serving a sufficient portion of the market?

Dr. Loube: The FCC's guidance regarding whether a sufficient portion of the market is being served is divided into two parts. First, the FCC requires the CLEC to have the

[53] *Id*, ¶ 94.

[54] *TRO*, footnote 1552.

"ability to serve each group of customers" within the relevant geographic market.[55] The two groups of mass market customers are the residential and very small business customers served using DS0 lines.[56] If the carriers are not serving one group, then that carrier should be eliminated from the trigger count. Moreover, it is more important that the carrier be serving the residential market because that is the largest part of the market.

While it has been hard to document the size of the business mass market in this proceeding, a proxy for that portion of the market is the number of single-line business access lines. In Pennsylvania, Verizon served 121,677 single-line business lines and 4,248,750 residential lines as of December 31, 2002.[57] Thus, the single-line business group represents less than 3 percent of the mass market. The fact that a CLEC may be serving the smaller, but more lucrative business portion of the market does not provide evidence that carriers are not impaired in general, and if the carrier is only serving this small portion of the market, without also serving residential customers, the carrier should not be included in the trigger count. The elimination of access to unbundled switching, solely on the basis of CLECs that provide service to business customers, would discriminate against the larger group of mass market customers – residential customers. Thus, carriers serving only business and not residential customers should not be included in the self-provisioning trigger count in the mass market analysis.

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55 *Id*, ¶ 495.

56 *Id*, ¶ 127.

57 ARMIS 43-01, Table II, rows 2090, 2100, 2110, summed across Verizon PA and Verizon North.

Q: Please describe the FCC's second guideline for evaluating whether a CLEC is serving the market?

Dr. Loube: The FCC noted that 3 percent of the residential market represented only a small percentage of the residential voice grade market, and that this percentage of customers served did not demonstrate a lack of impairment.[58] Stated differently, the FCC recognized that the presumption of impairment still holds even if some CLEC uses its own switching to serve a very small percentage of residential customers. This minimum is also important to each CLEC because of the pervasive existence of economies of scale and scope in the provision of telecommunications services.[59] Competitors serving small markets segments will not be viable and will not be able "to serve specific markets profitably."[60] CLECs serving the small niche markets may be doing so for a variety of reasons, but such service is not evidence of lack of impairment in the market. For example, a CLEC serving an enterprise customer might as part of that service provide lines to employees that are telecommuting, or a line to the corporate president at his or her residence. Such niche market service is insufficient to constitute service to the residential market and does not correspond to "actively providing voice service to mass market customers in the market."[61]

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58 *TRO*, ¶¶ 438-440.

59 *Id*, ¶ 86.

60 *Id*, ¶ 495.

61 *Id*, ¶ 499.

To separate those CLECs that are actively serving and can serve the mass market profitably from those CLECs that are not able to serve the market profitably and are only functioning as niche players, I recommend that the PUC adopt a 3 percent rule. Such a rule would require that a CLEC provide service to approximately 3 percent of the mass market in a market area before that CLEC can be used in the count of self-provisioning CLECs under the trigger test. In implementing the rule, I have made it easier to be counted as a self-providing carrier. This is because, due to problems of identifying mass market business lines, I did not count Verizon mass market business customers. I also did not include Verizon's wholesale customers and the CLECs' customers to ensure that my minimum line requirement was less than 3 percent. Exhibit RL-1, Table B shows the results of my calculations. For each market area defined by Verizon, I provide the number of Verizon retail residential lines and show 3 percent of those lines. In Exhibit RC-1, we compare the minimum necessary line counts to the number of lines served by each CLEC in the individual markets.

Q: How did Verizon count CLECs?

Dr. Loube: Verizon counted each and every CLEC that serves at least one customer in any market under Verizon's estimation. It included five carriers that served only one customer per market as effectively providing service in those areas. Two of those carriers were serving an area where Verizon's retail line count exceeded 486,000. Verizon included an additional 9 carriers that served more than one line but less than 100 lines. Two of those carriers operated in an area where Verizon has over

800,000 lines. Verizon's counting method means that if three carriers each with one customer operate in a market, then all CLECs operating in that market would be denied access to the local circuit switch UNE as part of a UNE-P combination. Thus, 3 carriers serving 1 mass market line each would eliminate UNE-P to more than 800,000 lines.

Q: How did Verizon justify counting these tiny operations?

Dr. Loube: Verizon witnesses Peduto and West assert that the PUC must not make any subjective decisions; that the PUC must rely only on objective data. They believe that "this objectivity allows trigger determination to be made quickly and accurately, and avoids the need for protracted proceedings."[62]

Q: Should the PUC use Verizon's counting method?

Dr. Loube: No. Verizon's witnesses Peduto and West ignore the FCC's statement that "the key consideration to be examined by state commissions is whether the providers are currently offering and able to provide service, and are likely to continue to do so."[63] Accordingly, the state commissions must determine what it means to serve, to be able to serve and whether the carrier is likely to continue to serve. State commissions must answer these questions using their judgment regarding the markets in their states. Despite Verizon's contention to the contrary, inevitably, this Commission must use some subjectivity in making the necessary

[62] Direct testimony of Debra M. Berry and Carlo Michael Peduto, II, on behalf of Verizon Pennsylvania Inc., adopted by Harold E. West III, page 9, lines 3-11.

[63] *TRO*, ¶ 500.

determinations in this proceeding. As noted above, the FCC provided some guidance with regard to how to determine whether a carrier is actually serving the market, and I have provided a systematic and practical way to put that guidance into operation.

Q: How should the PUC consider cable telephony providers as trigger candidates?

Dr. Loube: The *TRO* expressly considers the availability of intermodal alternatives when determining ILEC unbundling obligations.[64] The *TRO* cites that "some cable companies have begun offering local voice service. In mid-2002, cable telephony represented over 2.5 million access lines in 27 states, a 39 percent growth over the previous year. Industry sources state that over 10 million households have access to cable telephony. Cable companies' voice service competes with the primary landline voice service…"[65]

However, the FCC warns that "although the existence of intermodal switching is a factor to consider…the limited use of intermodal circuit switching alternatives for the mass market is insufficient for us to make a finding of no impairment in this market, especially since these intermodal alternatives are not generally available to new competitors."[66]

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[64] *Id*, ¶ 5.

[65] *Id*, ¶ 52.

[66] *Id*, ¶ 443.

Moreover, cable networks were "built for other purposes, often under government franchise, and therefore have first-mover advantages and scope economies not available to other new entrants."[67] The cable provider may not only self-provide its own switch, but also its loops. This strategy is only available to the franchised cable company. It is not available to other entrants and therefore, the existence of the cable company's telephone service provides no "evidence of an entrant's ability to access the incumbent LEC's wireline voice-grade local loop and thereby self-deploy local circuit switches."[68] Given the limited potential for CLECs to enter the cable telephony field, cable companies should not be counted as mass marketing triggering carriers.

Q: Should ILECs operating as CLECs or through ILEC subsidiaries be considered as mass market triggering companies?

Dr. Loube: No. These ILECs have many of the same unique characteristics that cable companies have. ILECs have switches that serve the incumbent franchise territory, and therefore, enjoy the benefits of economies of scope not available to new entrants. **(Begin Proprietary)**

[69] **(End Proprietary)** If these ILECs have a rural exemption to the provision of UNEs, they also have a protected monopoly franchise that provides

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[67] *Id*, ¶ 98.

[68] *Id*, ¶¶ 98 and 446.

[69] Response of CEI Networks, Inc. to Preliminary Data Request, A-6.

them with a secure base of operations to expand into other services. Such a secure base is not available to competitive carriers. For these reasons it is reasonable to establish a distinction and exclude these types of ILEC affiliates or subsidiaries from the trigger count. In some instances (e.g., SBC), the CLEC may be from an ILEC that does not operate in proximity to Pennsylvania, and does not have a switch nearby. In that case, the ILEC could be counted for the purpose of the self-provisioning trigger analysis. The Commission should not allow ILEC-affiliated CLECs to be included in the competitive trigger analysis unless evidence is presented that shows its total independence from the ILEC's switching equipment and operations.

Q: Are there exceptions to the two triggers?

Dr. Loube: Yes. The FCC recognizes "that exceptional circumstances may preclude a state determination that there is no impairment in a given market even when one of the triggers has been satisfied."[70] "Where the self-provisioning trigger has been satisfied and the state commission identifies an exceptional barrier to entry that prevents further entry, the state commission may petition the [FCC] for a waiver of the application of the trigger…"[71] An example of an exceptional barrier to entry may be inadequate collocation space for additional competitive LECs.[72]

Q: What if neither of the two triggers is satisfied?

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[70] *TRO* at footnote 1534.

[71] *Id*, ¶¶ 462 and 503.

[72] *Id*, ¶ 462.

Dr. Loube: The *TRO* states, "[I]f the triggers are not satisfied, the state commission shall proceed to the second step of the analysis, in which it must evaluate certain operational and economic criteria to determine whether conditions in the markets are actually conducive to competitive entry, and whether carriers in that market actually are not impaired without access to unbundled local circuit switching." Therefore, states should examine operational, economic, and potential deployment evidence.

I would note that Verizon has not filed any evidence of the operational or economic factors that need to be considered, nor has it filed any potential deployment evidence. Verizon has essentially filed a triggers-only case. However, I have provided this brief explanation, given the FCC's admonition on this point. We have not performed any analysis on operational, economic, or potential deployment issues, since no testimony or data was filed by Verizon.

Q: Turning now from the general nature of markets and triggers to the specifics of Pennsylvania, have you analyzed the Verizon proposal and realities that exist in the Commonwealth?

Mr. Curry: Yes, we have. We have examined the filings, data, and interrogatory responses from the carriers in this proceeding, and it is clear that the FCC's self-provisioning triggers are not met in any of the MSAs identified by Verizon in its filing.

Q: Please describe the nature of Verizon's filing.

Mr. Curry: As Dr. Loube has indicated, Verizon is seeking a PUC finding of "no impairment" in 12 density zones of 7 MSAs in Pennsylvania, based on their assertions that there exist three or more competitors in each MSA that provide local circuit switching via the competitors' own switches.[73] Table 1 shows the MSAs and the number of switches that Verizon claims should be counted toward the self-provisioning trigger.

Table 1: Verizon-Proposed CLEC Mass Market Switch Providers

MSA	# Verizon-Claimed Competitive Switches
Allentown-Bethlehem-Easton	7
Harrisburg-Lebanon-Carlisle	5
Lancaster	4
Philadelphia	13
Pittsburgh	8
Reading	4
Scranton-Wilkes Barre-Hazleton	5

Q: What is your position with respect to the Verizon trigger analysis?

Mr. Curry: We disagree with Verizon's analysis. Verizon's filing incorrectly concludes that the existence of alternative, self-provisioned local circuit switching in Pennsylvania is at a level where the FCC's triggers are met. We do not find any markets in Pennsylvania in which those triggers are being met.

[73] Verizon Petition, Attachment 2.

Q: Why is it your position that Verizon has not met the trigger requirements in any of the market areas identified?

Mr. Curry: As Dr. Loube has previously discussed, there are reasonable instances in which competitive service providers should not be included in a count of self-provisioning carriers for the purpose of evaluating mass market switching:

- The carrier does not serve both residential and small business mass market customers;
- The carrier does not serve at least three percent of the market area;
- The carrier offers intermodal (cable) service only; or
- The carrier is an ILEC affiliate or subsidiary.

Of the 15 competitive carriers shown in Verizon's Petition, eight do not market their services to both residential and business mass market customers,[74] and therefore cannot be included in the trigger analysis. Another two competitive carriers are cable providers,[75] and as Dr. Loube has indicated, cannot reasonably be included in the trigger analysis. Three carriers included in Verizon's listing are affiliates of incumbent local exchange carriers and share facilities or operations with their incumbent affiliate,[76] and should not be included in the trigger analysis. In addition to those specific exclusions, all of the fifteen competitors counted by

[74] **(Begin Proprietary)** **(End Proprietary)**

[75] **(Begin Proprietary)** **(End Proprietary)**

[76] **(Begin Proprietary)** **(End Proprietary)**

Verizon serve fewer than 3 percent of the lines in at least one of their markets, so they would be excluded in those specific markets. That leaves no independent or non-excluded competitive carriers operating in Pennsylvania that provide mass market services from their own local circuit switches in any market area, and obviously none of the MSAs identified by Verizon have three or more self-provided competitive switches.

Q: Please elaborate on your findings with respect to each of the competitive carriers listed in Verizon's filings.

Mr. Curry: Table 2, below, depicts the list of CLECs as shown on Verizon's Supplemental Exhibit 1, Attachment A (Proprietary), along with information that shows whether the switches provided by these carriers should be excluded from consideration for the purpose of switching trigger analysis.

Table 2: Independent Analysis of CLEC Mass Market Switch Providers.

MSA Name	CLEC Name (Proprietary)	Meet Self-Provisioning Triggers?	Reason for Exclusion
Allentown-Bethlehem-Easton (Density Zone 3)	***	No	R, %
	***	No	R, %
	***	No	%
	***	No	R, %
	***	No	I, %
	***	No	C
	***	No	R, %
Harrisburg - Carlisle (Density Zone 3)	***	No	R, %
	***	No	R, %
	***	No	I
	***	No	I, S, %
	***	No	R, %
Lancaster (Density Zone 3)	***	No	R, %
	***	No	I
	***	No	I, S
	***	No	R, %

MSA Name	CLEC Name (Proprietary)	Meet Self-Provisioning Triggers?	Reason for Exclusion
Lebanon (Density Zone 3)	***	No	R, %
	***	No	I, %
	***	No	I, S, %
Philadelphia (Density Zone 1)	***	No	R, %
	***	No	R
	***	No	R, %
	***	No	R, %
	***	No	%
	***	No	C, S, %
	***	No	I, %
	***	No	%
	***	No	R, %
	***	No	R, %
Philadelphia (Density Zone 2)	***	No	R, %
	***	No	R, %
	***	No	R, %
	***	No	R, %
	***	No	%
	***	No	R, %
	***	No	C, S, %
	***	No	R, %
Philadelphia (Density Zone 3)	***	No	R, %
	***	No	R, %
	***	No	R, %
	***	No	R, %
	***	No	%
	***	No	C, S, %
	***	No	I, %
	***	No	I, S, %
	***	No	C, %
	***	No	%
	***	No	R, %
	***	No	R, %
Pittsburgh (Density Zone 1)	***	No	R
	***	No	R, %
	***	No	R, %
	***	No	C, S, %
	***	No	I
	***	No	R, %
Pittsburgh (Density Zone 2)	***	No	R, %
	***	No	R, %
	***	No	R, %
	***	No	C, S, %
	***	No	I, %
	***	No	R, %
Pittsburgh (Density Zone 3)	***	No	R, %
	***	No	R, %
	***	No	R, %

MSA Name	CLEC Name (Proprietary)	Meet Self-Provisioning Triggers?	Reason for Exclusion
	***	No	R, %
	***	No	C, S
	***	No	R, %
	***	No	I
	***	No	R, %
Reading (Density Zone 3)	***	No	I
	***	No	I, S
	***	No	C, %
	***	No	R, %
Scranton-Wilkes Barre-Hazleton (Density Zone 3)	***	No	R, %
	***	No	R, %
	***	No	I
	***	No	C, %
	***	No	R, %

Reason(s) for exclusion:

R Does not actively serve both residential and small business customers.
I CLEC is an ILEC subsidiary or affiliate.
C CLEC is a cable provider.
S CLEC does not own or operate its own switch.
% CLEC has de minimis number (less than 3 percent) of customers in market. (See detailed table, Exhibit RC-1.)

Q: Can you elaborate on some of the specific reasons why some of these carriers might have been identified by Verizon as qualifying for the trigger analysis?

Mr. Curry: First, there appears to be disagreement among the parties in this proceeding with regard to the types of CLECs that should be included for the purpose of meeting the *TRO*'s self-deployment trigger. Dr. Loube and I have explained the categories of CLECs that we believe must be excluded from the analysis.

Dr. Loube has also discussed and given examples of discrepancies between the line counts provided by Verizon and the CLECs. One of the more difficult aspects of performing the trigger analysis is the identification of mass market customers,

specifically, residential customers. Verizon has indicated that it gathered its local switch identities from the LERG (Local Exchange Routing Guide), the number of UNE-L loops from internal databases, and the number of residential customers served by CLECs (such as cable telephony providers) using their own switching and loop facilities from the E911 database.[77] While this approach appears reasonable, it clearly does not identify residential customers as well as CLEC records. One example of potential miscounting is multi-tenant dwellings and nursing or retirement homes; in those situations, a location might contain multiple residential customers that may not be properly counted. The building owner may be an enterprise customer of the CLEC, but may re-sell service to tenants who have their own directory listings and E911 data entries. Those residents should not be counted as mass market customers of the CLEC.

IV. THE ISSUE OF BATCH HOT CUTS

Q: Does the *TRO* address the transfer of customers' lines between carriers?

Mr. Curry: Yes. The *TRO* evaluates the current loop migration, or "hot cut," process, and directs state commissions to approve a low-cost batch cut process that mitigates the limitations of the current hot cut process.

Q: Please describe the current hot cut process?

[77] Direct testimony of Debra M. Berry and Carlo Michael Peduto, II, on behalf of Verizon Pennsylvania Inc., adopted by Harold E. West III, pp 18-21.

Mr. Curry: When a customer decides to change service providers, certain processes must take place to physically (or in some cases electronically) disconnect the customer's line from the connection of the existing service provider and move it to the connection to the new provider. It is important that the activities are coordinated such that there is minimal interruption of the customer's service during the cut-over.

The *TRO* explains that the "physical transfer of a customer's line from the incumbent LEC switch to the competitive LEC switch currently requires a coordinated loop cut over or "hot cut" for each customer line."[78] "A hot cut is a largely manual process requiring incumbent LEC technicians to manually disconnect the customer's loop, which was hardwired to the incumbent LECs switch, and physically re-wire it to the competitive LEC switch, while simultaneously reassigning (*i.e.* porting) the customer's original telephone number from the incumbent LEC switch to the competitive LEC switch."[79] "From the time the technician disconnects the subscribers loop until the competitor reestablishes service, the subscriber is without service."[80] A hot cut is required regardless of whether the customer was previously serviced by the incumbent LEC or by a competitive LEC through unbundled network elements.[81]

Q: What is the relevance of "batch hot cuts"?

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[78] *Id*, ¶ 465.

[79] *TRO* at footnote 1409.

[80] *TRO* at footnote 1409.

[81] *Id*, ¶ 465.

Mr. Curry: If states find that competitive carriers are not impaired without the provision of local circuit switching elements, then all of the customers who are currently served by UNE-P must be migrated rather quickly to UNE – Loop elements and connected to the competitors' local switches (and likely to transport facilities). If a competitive carrier has hundreds or thousands of customers to migrate, then there must be a system of processing a batch, or large group, of the migration orders in a reasonably short time. Data filed in this case reveals that there are over 444,000 total residential and business customers served by UNE-P in approximately 400 Verizon-PA central offices throughout Pennsylvania,[82] and all of those customers would need to be migrated to UNE-L platforms in an efficient manner if UNE-P is eliminated. The process is complex, but must be accurate and result in minimal or no disruption of customer service. Most incumbent carriers have never processed as large a batch as is envisioned if UNE-P is phased out, and regulators are justifiably concerned that customers are not displaced by this event. The number of hot cuts that must be accomplished if all markets are declared not impaired is over **(Begin Proprietary)** **(End Proprietary)** times as many as Verizon indicates that it has processed in any given month in 2003.[83]

Q: Once the initial migration is completed, is the process still needed?

Mr. Curry: Most experts agree that there will be an initial peak, but that sizeable batches may continue to occur due to the churn of customers from one carrier to another.

[82] Verizon Pennsylvania Proposal, Appendix A, Part B.

[83] Docket M-00031754, Verizon Exhibit 15-4.

Currently (using UNE-P), churn is handled without manual hot cuts. The process for switching a customer from one competitor to another, or from a competitor to the incumbent is more complex in a UNE-L environment. With a hypothetical annual churn of 25%,[84] the number of hot cuts in a UNE-L environment in Pennsylvania would exceed 10,000 per month on an ongoing basis. That is approximately **(Begin Proprietary) (End Proprietary)** times as many line migrations per month than Verizon-PA has ever accomplished.[85]

Q: What did the *TRO* find with respect to batch hot cuts?

Mr. Curry: The *TRO* found "on a national level that requesting carriers are impaired without access to unbundled local circuit switching when serving mass market customers."[86]

The FCC further found "that it is unlikely that incumbent LECs will be able to provision hot cuts in sufficient volumes absent unbundled local circuit switching in all markets."[87] The significant "issue identified by the record is an inherent limitation in the number of manual cut overs that can be performed, which poses a barrier to entry that is likely to make entry into a market uneconomic."[88]

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[84] Testimony in other jurisdictions has shown that churn may reach or exceed this percentage. *See*, e.g., Opening Testimony of AT&T Witness Van de Water, California PUC Docket Nos. R 95-04-043 and I 95-04-044, at Section IIIA, Dec. 12, 2003.

[85] Docket M-00031754, Verizon Exhibit 15-4.

[86] *Id*, ¶ 419.

[87] *Id*, ¶ 468.

[88] *Id*, ¶ 469.

Q: Please elaborate on the limitations of the current hot cut process.

Mr. Curry: The *TRO* lists several factors that contribute to the limited capacity of the current hot cut process, including "the labor intensiveness of the process, including substantial incumbent LEC and competitive resources devoted to the coordination of the process, the need for highly trained workers to perform the hot cuts, and the practical limitations of how many hot cuts an incumbent LEC can perform without interference or disruption."[89]

The costs associated with hot cuts, which are borne by competitive LECs, "contribute to a significant barrier to entry."[90] Furthermore, the *TRO* finds that "hot cuts frequently lead to provisioning delays and service outages, and are often priced at rates that prohibit facilities based competition for the mass market."[91]

In summary, the FCC finds that "the overall impact of the current hot cut process raises competitors' costs, lowers their quality of service, and delays the provisioning of service, thereby preventing them from serving the mass market in the large majority of locations."[92]

Q: How does the FCC propose to mitigate this barrier to entry?

Mr. Curry: Clearly, the FCC finds that the current manual hot cut processes are problematic for "transferring existing mass market customers in a cost-effective and operationally

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[89] *Id*, ¶ 465.

[90] *Id*, ¶ 470.

[91] *Id*, ¶ 465.

[92] *Id*, ¶ 473.

seamless manner."[93] In the *TRO*, the FCC finds that "the present impairment can be mitigated by an improved loop provisioning process."[94] Moreover, "the record evidence strongly suggests that the hot cut process could be improved if cut overs were done on a bulk basis, such that the timing and volume of the cut over is better managed. We [the FCC] expect that such improvements would result in some reduction of the non-recurring costs that, according to competitive carriers, prevent entry. Indeed, at this time, we find such improvements are likely to be essential to overcome the operational impairment that competitors face in serving mass market customers."[95] As a result, the FCC finds "that a seamless, low-cost batch cut process for switching mass market customers from one carrier to another is necessary, at a minimum, for carriers to compete effectively in the mass market."[96]

Q: How does the FCC propose to implement a low-cost batch cut process?

Mr. Curry: In the *TRO*, and codified in new §51.319(d)(2)(ii),[97] the FCC directs state commissions to approve a new low-cost batch cut process that mitigates the limitations of the current hot cut process in each state commission designated market. "State commissions must approve, within nine months of the effective date

[93] *Id*, ¶ 467.

[94] *Id*, ¶ 475.

[95] *Id*, ¶ 474.

[96] *Id*, ¶ 487.

[97] *See* Part 51 of Title 47 of the Code of Federal Regulations.

of this Order, a batch cut migration process to be implemented by incumbent LECs that will address the costs and timeliness of the hot cut process."[98]

Q: Does the FCC provide additional guidance regarding the new low-cost batch cut process?

Mr. Curry: Yes. The FCC directs the state commission to determine the appropriate number of loops to be included within a batch.[99] In addition, the state commission shall evaluate whether the incumbent LEC can migrate loops from the incumbent LEC switch to the competitive LEC switch in a timely manner, and can establish quality of service standards with regard to the average completion interval for migrating the loops.[100] The rate for a cut over shall be determined in accordance with the FCC's pricing rules for unbundled network elements.[101]

The state commission must also approve the specific processes performed during the batch hot cut. In order to better manage the timing and volume of mass market customer migrations, the low-cost batch process divides the hot cut into a series of steps such that pre-wiring and dial tone verification can be performed approximately two days prior to the actual cut over. On the day of the physical cut over, the incumbent LEC and the competitive LEC coordinate their activities to minimize the possibility of service disruption. During a given time window the incumbent LEC and the competitive LEC can perform the physical cut over of a

98 *TRO*, ¶ 488.

99 *Id*, ¶ 489.

100 *Id*, ¶ 489.

101 *Id*, ¶ 489.

number, or "batch", of customers.[102] These processes will be dependent on the incumbent LEC network. For example, cutovers involving integrated Digital Loop Carrier (DLCs) equipment may differ from other cutovers.

Q: What is the current situation with respect to the implementation of a batch hot cut process in Pennsylvania?

Mr. Curry: The PUC is considering batch hot cut process issues in Docket No. M-00031754.[103] Verizon offered no testimony or other evidence regarding batch hot cuts in this *TRO* proceeding.

In the *Loop Migration* proceeding, Verizon has indicated it currently uses two separate, though closely related, hot cut processes: a "basic" hot cut process and a "Large Job," or "Project" process. Verizon indicates in addition that it has developed "a new process that we refer to as a "Batch" hot cut process."[104]

Q: What is your general position with respect to the proposed batch hot cut process and the resultant effect on the *TRO* impairment proceeding?

Mr. Curry: Any premature acceptance of or dependence on Verizon's proposed batch hot cut process, as a part of finding "no impairment" for local circuit switching elements, will create great problems. I anticipate that CLEC parties in this proceeding will provide more specific examples of the difficulties with respect to hot cut issues.

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[102] *Id*, ¶ 489.

[103] *Development of an Efficient Loop Migration Process*, Pennsylvania PUC, Docket No. M-00031754.

[104] Docket M-00031754, Verizon Response to Data Request No. 3, Oct. 2, 2003.

Q: Do you have preliminary concerns about the proposed process?

Mr. Curry: Yes, I do. To begin with, Verizon's proposed batch hot cut process has not yet been implemented or tested. With respect to testing its new process, Verizon states "[t]he full scale and methodology of the proposed batch hot cut trial has not yet been determined nor has Verizon completed its review of the potential trial participants."[105] Verizon asserts that the process will be tested in 2004 and will be commercially available at the end of this *TRO* proceeding. The Commission should continue to encourage dialogue among the parties as to the implementation of this process, but should not rush to approve it unless it really works for customers.

Addressing the issue of performance monitoring, Verizon responds, "[c]urrently no metrics exist for the proposed batch hot cut process."[106] Once again, the PUC is called upon to trust Verizon's ability to make the systems work. A proper process must be tested and monitored for a reasonable period of time. The Commission should not approve the proposal based on speculation and insufficient evidence.

Finally, with respect to the anticipated volume of hot cuts in their new batch process, Verizon responds:

> "…with the appointment window of 6 to 26 business days for batch hot cuts, Verizon will have a better view of the orders that have been submitted. This will give Verizon more flexibility in planning its work

[105] Verizon response to OCA Set II, Interrogatory 3.
[106] Verizon response to OCA Set II, Interrogatory 4.

> force to ensure that the orders are all completed within the batch hot cut window."[107]

We urge the Commission to examine the scheduling issue very carefully. An appointment window of over 5 weeks constitutes a serious barrier, and may well drive a residential customer away from a competitive service provider. The Commission should ensure that the appointment mechanism and all other aspects of the hot cut process are performed with an eye on parity with the ILEC's services.

We also ask the Commission to be mindful of individual customers, including those who may be in wire centers away from the downtown areas. Even the best batch hot cut process once it is perfected may constitute an entry barrier if a lone customer must wait until other customer orders are accumulated over time for batch processing.

At this point, we have not seen a firm proposal, implementation plan, performance monitoring metrics, or other details of the new batch hot cut process, only speculation. The Commission cannot decide that there is no impairment with respect to the local circuit switching until the batch hot cut issue is resolved and a lack of impairment is demonstrated.

[107] Verizon response to OCA Set II, Interrogatory 6.

V. THE IMPAIRMENT OF MASS MARKET SWITCHING

Q: Will you please summarize your testimony with respect to the impairment of local circuit switching in mass markets in Pennsylvania?

Dr. Loube: Yes. Mr. Curry and I have reached the following conclusions with respect to the issues of this proceeding:

- Provision of competitive services in Pennsylvania is heavily dependent on CLEC use of combined UNEs, or UNE-P.
- Economic market analyses (HHI) demonstrate that Verizon continues to dominate every Pennsylvania market under review.
- For the purpose of the switching trigger analysis, geographic markets should be defined as the density cells within the MSAs, with the exception of the City of Hazleton issue.
- There are reasonable instances in which competitive service providers should not be included in a count of self-provisioning carriers for the purpose of evaluating mass market switching:
    - The carrier does not serve both residential and small business mass market customers;
    - The carrier does not serve at least three percent of the market area;
    - The carrier offers only intermodal (cable) service only; or
    - The carrier is an ILEC affiliate or subsidiary.
- We do not find any markets in Pennsylvania in which the local circuit switching triggers are currently being met.
- Competition has not yet gained a strong enough foothold to eliminate the key local circuit switching element in <u>any</u> market in Pennsylvania.

- Verizon's proposed batch hot cut process has not yet been implemented or tested. There are continuing operational barriers based on the inability to effectively migrate customers; therefore, impairment caused by these barriers still exists.

Q. Does this conclude your direct testimony in this proceeding?

Dr. Loube: Yes, it does.

Mr. Curry: Yes, it does.

Exhibit RL-1

Table A
HHI for Pennsylvania Markets

Verizon Market Area	HHI	Equivalent Firms
Allentown-Bethlehem-Easton	5,719	1.75
Harrisburg-Carlisle	8,408	1.19
Lancaster	7,835	1.28
Lebanon	8,659	1.15
Philadelphia - Zone 1	7,945	1.26
Philadelphia - Zone 2	9,238	1.08
Philadelphia - Zone 3	8,682	1.15
Pittsburg - Zone 1	7,460	1.34
Pittsburg - Zone 2	6,475	1.54
Pittsburg - Zone 3	5,963	1.68
Reading	8,075	1.24
Scranton- Wilkes-Barre	7,150	1.40

Table B
Determining minimum line count necessary to be a "trigger carrier"

Verizon Market Area	Verizon Residential Lines per Market Area	Three percent of Verizon Lines
Allentown-Bethlehem-Easton	135,381	4,061
Harrisburg-Carlisle	135,326	4,060
Lancaster	59,674	1,790
Lebanon	23,307	699
Philadelphia - Zone 1	98,160	2,945
Philadelphia - Zone 2	486,441	14,593
Philadelphia - Zone 3	800,799	24,024
Pittsburg - Zone 1	68,875	2,066
Pittsburg - Zone 2	164,318	4,930
Pittsburg - Zone 3	255,883	7,676
Reading	83,602	2,508
Scranton- Wilkes-Barre	126,025	3,781

Exhibit RC-1

Comparison of Line Counts with 3% Thresholds for Each Carrier in Each Market

Source: Verizon's Supplemental Exhibit 1, Attachment A

(Contains Proprietary Information)

MSA Name	CLEC Name (Proprietary)	Verizon Line Count (Proprietary)	CLEC Line Count (Proprietary)	Meets 3% Trigger Threshold?
Allentown-Bethlehem-Easton	***	***	***	No
(Density Zone 3)	***	***	***	No
	***	***	***	No
3% Threshold: 4,061	***	***	***	No
	***	***	***	No
	***	***	***	Yes
	***	***	***	No
Harrisburg-Carlisle	***	***	***	No
(Density Zone 3)	***	***	***	No
	***	***	***	Yes
3% Threshold: 4,060	***	***	***	No
	***	***	***	No
Lancaster	***	***	***	No
(Density Zone 3)	***	***	***	Yes
3% Threshold: 1,790	***	***	***	Yes
	***	***	***	No
Lebanon	***	***	***	No
(Density Zone 3)	***	***	***	No
3% Threshold: 699	***	***	***	No
Philadelphia	***	***	***	No
(Density Zone 1)	***	***	***	Yes
	***	***	***	No
3% Threshold: 2,945	***	***	***	No
	***	***	***	No
	***	***	***	No
	***	***	***	No
	***	***	***	No
	***	***	***	No
	***	***	***	No
Philadelphia	***	***	***	No
(Density Zone 2)	***	***	***	No
	***	***	***	No
3% Threshold: 14,593	***	***	***	No
	***	***	***	No
	***	***	***	No
	***	***	***	No
	***	***	***	No
Philadelphia	***	***	***	No
(Density Zone 3)	***	***	***	No
	***	***	***	No
3% Threshold: 24,024	***	***	***	No
	***	***	***	No

MSA Name	CLEC Name (Proprietary)	Verizon Line Count (Proprietary)	CLEC Line Count (Proprietary)	Meets 3% Trigger Threshold?
	***	***	***	No
	***	***	***	No
	***	***	***	No
	***	***	***	No
	***	***	***	No
	***	***	***	No
	***	***	***	No
Pittsburgh (Density Zone 1) 3% Threshold: 2,066	***	***	***	Yes
	***	***	***	No
	***	***	***	No
	***	***	***	No
	***	***	***	Yes
	***	***	***	No
Pittsburgh (Density Zone 2) 3% Threshold: 4,930	***	***	***	No
	***	***	***	No
	***	***	***	No
	***	***	***	No
	***	***	***	No
	***	***	***	No
Pittsburgh (Density Zone 3) 3% Threshold: 7,676	***	***	***	No
	***	***	***	No
	***	***	***	No
	***	***	***	No
	***	***	***	Yes
	***	***	***	No
	***	***	***	Yes
	***	***	***	No
Reading (Density Zone 3) 3% Threshold: 2,508	***	***	***	Yes
	***	***	***	Yes
	***	***	***	No
	***	***	***	No
Scranton-Wilkes Barre-Hazleton (Density Zone 3) 3% Threshold: 3,781	***	***	***	No
	***	***	***	No
	***	***	***	Yes
	***	***	***	No
	***	***	***	No

Note: CLEC line count used for threshold comparison when available. Otherwise, Verizon line count used.

Appendix 1
Curriculum Vitae of Dr. Robert Loube

Personal Data:

Home Address: 10601 Cavalier Drive
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Office Phone: 301-681-0338

Email Address: bobloube@earthlink.net

EDUCATION:

Ph.D., Economics, Michigan State University, 1983
M.A., Economics, University of Massachusetts-Amherst, 1971
B.S., Economics, University of Maryland-College Park, 1969

PROFESSIONAL EXPERIENCE:

April 2001–Present, **Director/Economic Research**, Rhoads & Sinon, LLC, Washington, DC. Responsibilities include:

- Prepared an Affidavit for the National Association of State Utility Consumer Advocates in the Matter of the Review of Commission's Rules Regarding The Pricing of Unbundled Network Elements And the Resale of Service by Incumbent Local Exchange Carriers, WC Docket No. 03-173 (with David Gabel).
- Provided expert advice to the Cities of Austin, Dallas, Fort Worth, and Hereford in Southwestern Bell Telephone Company's Filing To Establishing Surcharges Resulting From District Court Remand Of PUC Final Order In Docket No. 18509, SOAH Docket No. 473-03-1620, Texas PUC Docket No. 26719.
- Filed expert testimony on behalf of the Staff of the Nevada Public Utilities in The Petition of Nevada Bell for an Order commencing a proceeding to determine the costs and rates for unbundled network elements, Docket No. 00-7012.
- Prepared comments for the National Association of State Utility Consumer Advocates in the Matter of Cost Review Proceeding for Residential and Single-Line Business Subscriber Line Charge Cap, FCC CC Docket No. 96-262 (with David Gabel).

- Technical Adviser to the Alabama Public Service Commission in the Generic Proceeding to Establish Prices for Interconnection Services and Unbundled Network Elements, Docket No. 27821.
- Prepared reply comments for the Office of the People's Counsel of the District of Columbia In the Matter of Developing a Unified Inter-carrier Compensation Regime, FCC CC Docket No. 1-92.

February 2001, **Consultant** to Booz, Allen & Hamilton, Inc., Telephone Organization of Thailand, Bangkok. Conducted a tariff and cost workshop for senior management and staff.

August–September 2000, **Consultant** to Nathan Associates, Inc., Ministry of Communications, Jakarta, Indonesia. Drafted a report on best practices guidelines for Universal Service Obligations, and conducted round-table with the Ministry of Communications staff and with the U.S. telecommunications community.

May 1996–April 2001, Federal Communications Commission (FCC), Washington, DC.

- **Industry Economist**, GS 301-15, Established the criteria for choosing the universal service economic cost model. Evaluated and modified telephone cost models. Determined the input values used in telephone cost models. Served on the FCC staff of the Federal State universal service joint board. Developed and evaluated alternative universal service funding proposals. Developed and compared alternative jurisdiction separations allocators with regard to the impact of the allocators on state and federal jursidictional responsibilities. Reviewed orders of other divisions to ensure that those orders complement the tasks and mandates of the Accounting Policy Division. Conducted special studies for use by the Chairman, Commissioners, Bureau Chief or Division Chief. Provided technical economic advice to the division legal staff regarding common carrier operations and regulatory policy.

May 1989–May 1996, Public Service Commission of the District of Columbia, Washington, DC.

- **Director, Office of Economics**, Supervised the preparation of staff testimony in telephone, electric and gas utility cases. Represented the Commission on the Staff of Federal State Separations Joint Board. Prepared and presented testimony on the strategic approach to electricity demand side management and least cost planning principles. Represented the Commission on the National Association of Regulatory Utility Commissioners Communications Committee's universal service and access reform working groups. (July 1993–May 1996)
- **Acting Director, Office of Economics**. Prepared comments on FERC Notices of Proposed Rulemaking. Represented the Commission on the telephone quality of service and low-income program working groups. (February 1993–July 1993)

- May 1989–February 1993, **Senior Telecommunications Economist**, Public Service Commission of the District of Columbia, Washington, DC. Prepared and presented testimony regarding telephone rate structure, competition in telephone markets, embedded cost studies,

and long run incremental cost studies. Represented the Commission on digital deployment and generic cost manual working groups. Represented the Commission on the staff of the 410B Joint Federal/State Conference on Open Network Architecture. Prepared comments on FCC Notices of Proposed Rulemaking.

January 1986–May 1989, Indiana Utility Regulatory Commission, Indianapolis, Indiana. Positions included:

- **Econometrician**. Developed electric energy and demand forecasts. Supervised consultants developing economic and demographic models for utility service territories. Represented the Commission on the Executive Committee on Intrastate Access Charges. (March 1988–May 1989)
- **Principal Utility Analyst**. Prepared and presented testimony regarding demand forecasting for telephone and electric services, cost of equity and long run marginal cost. Contributed to staff reports on energy and demand forecasts. Developed financial forecasts for electric utilities. (January 1986–March 1988)

September 1979–December 1984, James Madison University, Harrisonburg, VA. Taught industrial regulation, industrial organization (undergraduate and M.B.A.), intermediate macroeconomic theory, economic analysis (M.B.A.), and principles of macro and microeconomics. Positions included:

- **Assistant Professor**. (September 1983–December 1984)
- **Instructor**. (September 1979–June 1983)

November 1972–September 1975, **Economist** in the Office of Director, Bureau of Economic Analysis, Department of Commerce, Washington D.C.

SELECTED PUBLICATIONS AND PRESENTATIONS:

Publications

"Universal Service: How much is enough?" *Journal of Economic Issues*, forthcoming June 2003.

"Public Interest Regulation, Common Costs and Universal Service," in Edythe S. Miller and Warren J. Samuels (eds.), *An Institutionalist Approach to Public Utilities Regulation*, Michigan State University Press, 2002.

"Price Cap Regulation: Problems and Solutions," *Land Economics*, Vol. 71, Number 3, August 1995.

"Measuring the Total Service Long-Run Incremental Cost," with David Gabel and Mark Kennet, *Ninth NARUC Biennial Regulatory Information Conference*, September 1994.

"The Proper Use of Stand Alone Cost Studies," *Ninth NARUC Biennial Regulatory Information Conference*, September 1994.

"State Experience in InterLATA Toll Deregulation," with Labros Pilalis, *Journal of Economic Issues*, Vol. XXVIII, No. 2, June 1994.

"Price Caps and Cross-subsidization," *Eighth NARUC Biennial Regulatory Information Conference*, Ohio State University, 1992.

"The Institutional Conditions for Technological Change: Fiber to the Home," *Journal of Economic Issues*, Vol. XXV, No. 4, December 1991.

"Fiber to the Home: A Competitive Analysis," *Seventh NARUC Biennial Regulatory Information Conference*, Ohio State University, 1990.

"The Return of the Electric Utility Holding Company and the Future of the Electric Supply Industry," *Journal of Economic Issues*, Vol.XXIII, No. 2, June 1989.

"Impact of the National Appliance Energy Conservation Act on Residential Energy Consumption within a Service Territory," with Katri Clodfelder, *Sixth NARUC Biennial Regulatory Information Conference*, Ohio State University,1988.

A Summary of Future Demand Trends and Capacity Plans for Major Electric Utilities in Indiana, with Wayne Lash *et al*, Public Service Commission of Indiana, Indianapolis, Indiana, 1987.

Electric Demand and Supply Planning for the State of Indiana, with Wayne Lash *et al*, Public Service Commission of Indiana, Indianapolis, Indiana, 1985.

"District Heating and Regulatory Reform," *Proceedings of the Seventy-Fifth Annual Conference of the International District Heating Association*, Washington D.C.: IDHA, 1984.

State and Local Regulation of District Heating and Cooling Systems: Issues and Options, with Philip Kier *et al*, Argonne, Illinois: Argonne National Laboratory, 1981.

"Michigan's Hydroelectric Potential," *The Michigan State Economic Record*, Volume 20, Number 7 (July-August 1978), Division of Research, Graduate School of Business, Michigan State University.

Lectures

"The Evolution of Telecommunications Pricing," NARUC Annual Regulatory Studies Program, August 2002.

"Federal Restructuring of the Telecommunications Industry," "Federal Universal Service Programs," and "State Universal Service Programs," NARUC Annual Regulatory Studies Program, August 2001.

"Cost Modeling in Telecommunications," NARUC Annual Regulatory Studies Program, August 1997–2000.

"Policy Issues Raised by Performance-Based Incentive Systems," Public Policies Toward Competition in the Electric Power Industry, Wisconsin Public Utility Institute, October 1994.

"Cost Allocations in Broadband Networks," NARUC Annual Regulatory Studies Program, August 1994.

"Pricing Concepts and the Control of Price Discrimination in Advanced Telecommunications Networks: Issues and Methods," NARUC Advanced Regulatory Studies Program, January 1994.

"Cost Allocation in Advanced Telecommunications Networks: Issues and Methods," NARUC Annual Regulatory Studies Program, August 1993.

"A Review of Incentive Regulation," CAMPUT 7th Annual Regulatory Conference, Banff Canada, May 1993.

"New Social Contracts: Telecommunications Policy for the 21st Century," Annual Meeting of the Association of Evolutionary Economics, January 1993.

"Modernization: Who Pays? Who Benefits?" NARUC Annual Regulatory Studies Program, August 1992.

"Who Determines the Costs and Prices for Access to the Infrastructure," Telecommunications Policy: Agenda for the 21st Century Conference, The Michigan Divestiture Research Fund, March 1992.

"The New Social Contract," State Policies for Developing the Telecommunications Infrastructure Forum, Wisconsin Public Utility Institute, December 1991.

"RBOC Strategic Reactions to Entry," Atlantic Economic Society Annual Conference, Washington, D.C., October 1991.

Staff Testimony

January 1986 to May 1996 presented expert testimony in eight formal cases to the Public Service Commission of the District of Columbia, and in 18 causes for the Indiana Utility Regulatory Commission.

PROFESSIONAL ASSOCIATIONS AND INDUSTRY COMMITTEES:

- Federal Staff of the Federal-State Joint Board of CC Docket No. 80-286 (June 1999–April 2001)
- Federal Staff of the Federal-State Joint Board of CC Docket No.96-45 (May 1996–April 2001)
- Staff Subcommittee on Communications, National Association of Regulatory Utility Commissioners (NARUC) (1994–1996)
- State Staff of the Federal-State Joint Board of CC Docket No.80-286 (1991-1996)
- Member, American Economic Association
- Member, Association for Evolutionary Economics

Attachment 2
Curriculum Vitae of Rowland L. Curry

Personal Information

Address:	1509 Mearns Meadow Blvd Austin, TX 78758
Business Phone:	(512) 835-1585
Business Fax:	(512) 835-1586
E-mail Address:	rcurry @ austin.rr.com

Education, Registration

Bachelor of Science in Electrical Engineering
Texas Tech University, 1969

Registered Professional Engineer in Texas (#37301)

Professional Experience

Rowland L. Curry Consulting (dba Curry & Associates) August 2001 – Present
Partial Client Listing

Public Service Commission of South Carolina
The Utility Reform Network
Florida Public Service Commission
Regulatory Commission of Alaska
Pennsylvania Office of Consumer Advocate
Rhoads & Sinon Group, Universal Service Administrative Company
Las Vegas Metropolitan Police Department, Clark County, Nevada

Public Utility Commission of Texas; November 1976 – July 2001

Chief Engineer; Office of Policy Development; October 1995 – July 2001
Monitored FCC proceedings; prepared filings on behalf of PUC
Served as senior advisor to PUC Commissioners on telecommunications issues
Acted as Co-Arbitrator in significant DSL interconnection proceeding, Docket No. 20226
Appointed as representative on Federal-State Joint Board on Universal Service
Elected as Chairman of NARUC Staff Subcommittee on Telecommunications

Division Director, Telephone Division; October 1988 – October 1995
Managed staff of 40 in analysis of telecommunications issues and rate cases
Primary role on senior management team of advising Commissioners, Legislative staff

Division Director, Operations Review Division; October 1986 - October 1988
Responsibility for management audits, financial analysis, telephone service quality
Developed earnings monitoring program for regulated utilities

Assistant Director, Telephone Division; February 1983 – October 1986
Supervised staff in evaluation of telephone cases
Testified as expert witness in formal proceedings
Case coordinator on Southwestern Bell rate case in 1985

Engineer, Engineering & Enforcement Division; November 1976 – February 1983
Developed and implemented program for telephone service quality evaluation
Testified as expert witness in cases involving service quality, depreciation, costs, tariffs
Served as Chairman, NARUC Staff Subcommittee on Telephone Service Quality

General Telephone Company (now Verizon); January 1971 – October 1976

Transmission and Protection Engineer; San Angelo, Brownwood, TX
Designed EAS and toll trunk transmission systems
Designed, tested new systems and special circuits in Texas and Oklahoma
Instructor, system-wide training program on Protection Engineering
Served on two performance improvement task forces

Southwestern Bell Telephone Company; January 1970 – January 1971

PBX Engineer, Area Plug-In Equipment Coordinator; Dallas, TX
Designed PBX equipment additions and modifications
Area-wide coordination of plug-in channel equipment distribution network

Committees and Professional Membership

- Staff Subcommittee on Telecommunications; National Association of Regulatory Utility Commissioners (NARUC); Member, 1980 – 2001; Committee Chair 1997 – 2000.
- Staff Subcommittee on Telephone Service Quality; NARUC; Member, 1978 – 2001; Committee Chair 1980 – 1988.
- Federal-State Joint Board on Separations; CC Docket No. 80-286; Staff 1984 – 1995.
- Federal-State Joint Board on Universal Service; CC Docket No. 96-45; Staff 1996 – 2001; State Staff Chair 1998 – 2001.
- National Society of Professional Engineers; Texas Society of Professional Engineers (current)

Selected Presentations & Lectures

- *Fundamentals of Telecommunications Regulation*; Anchorage, Alaska; Jan 2003.
- *State Regulation of Telephone Service Quality*; Pennsylvania PUC Collaborative Hearings; July 2002.
- *DSL Collocation*; National Conference of Regulatory Utility Commission Engineers (NCRUCE); West Yellowstone, Montana; June 2001.
- *The Impact of Competition on Service Quality for CLECs and ILECs: The Texas Perspective;* NCRUCE; West Yellowstone, Montana; June 2001.

- *Performance Measures: It's About Time, It's About Performance*; NCRUCE; West Yellowstone, Montana; June 2001.
- *State Regulatory Perspectives on Service Costs*; Jamaican Office of Utility Regulation Workshop; Ocho Rios; January 2001.
- *State Cooperation in Enforcement*; The New FCC Enforcement Bureau: Nuts, Bolts & Strategies (Wallman Consulting); Washington, DC; September 2000.
- *Advanced Services in Telecommunications*; NCRUCE; Ashland, Nebraska; June 2000.
- *IP Telephony: Regulatory Issues for the New Millennium*; National Cable Television Convention; New Orleans, LA; May 2000.
- *Telecommunications: New Technologies & Convergence;* NARUC Annual Regulatory Studies Program; Michigan State University; East Lansing, MI; August 1999.
- *Competition, Convergence, and Innovation (§706): A State Perspective;* NARUC Annual Regulatory Studies Program; Michigan State University; East Lansing, MI; August 1998.
- *Jurisdictional Issues: Creating a Medium of Reform Between the States and the FCC;* ICM Universal Service Conference; Washington, DC; September 1997.
- *Telecommunications Service Quality: Measurement and Policy Implementation;* NARUC Annual Regulatory Studies Program; Michigan State University; August 1994.

Selected Publications

- Report to the Seventy-Seventh Texas Legislature on Intrastate Switched Access Charges; Texas PUC; 2001; *Principal Author, Editor.*
- Report to the Seventy-Seventh Texas Legislature on the Availability of Advanced Services in Rural and High Cost Areas, 2001, *Contributor, Design Team.*
- Report to the Seventy-Seventh Texas Legislature on the Scope of Competition in Telecommunications Markets, 2001, *Major Contributor, Data Analyst, Editor.*
- Report to the Seventy-Sixth Texas Legislature on the Scope of Competition in Telecommunications Markets, 1999, *Major Contributor, Data Analyst, Editor.*
- Report to the Seventy-Fifth Texas Legislature on the Scope of Competition in Telecommunications Markets, 1997, *Major Contributor, Data Analyst, Editor.*
- Examination of the Deployment of Fiber Technology, Public Utility Commission of Texas, 1994, *Editor, Director.*
- Report to the Seventy-Third Texas Legislature on the Scope of Competition in Telecommunications Markets, 1993, *Editor, Responsible Director.*
- Rowland Curry (Chapter Contributor), "Service Quality", *After the Break-Up; Assessing the New Post-AT&T Divestiture Era*, ed. Barry G. Cole (New York: Columbia University Press, 1991), 235 - 253.
- Report to the Seventy-First Texas Legislature on the Scope of Competition in Telecommunications Markets, 1989, *Principal Author, Editor.*

Formal Testimony

Rowland L. Curry / Curry & Associates - Contracts

Docket #	**Date**	**Telco**	**Issues**
FL PSC 981834-TP 990321-TP	4/2003	BellSouth, Verizon - Florida, Sprint	Power plant costs and rates for collocation.
PA PUC P-0093071 5F002	2/2003	Verizon - Pennsylvania	Proposed revisions to Verizon's Network Modernization Plan; Broadband; DSL Deployment
TX PUC 24919	7/2002	Verizon - Texas	Rate band rebalancing (Testimony prepared, not filed; stipulation)
NV PUC 01-2045	9/2001	Sprint-Centel	E9-1-1 Cost Studies: Cost and rate analysis and testimony on behalf of Las Vegas Metropolitan Police Department and City of Henderson.

Public Utility Commission of Texas (see note following)

Docket #	**Date**	**Telco**	**Issues**
6200	1985	Southwestern Bell	Rate Design and Cost Methodology, Affiliate Payments, Various Rate Change Proposals
6254	1985	Southwestern Bell	Toll Service Tariff changes
6252	1985	Southwestern Bell	Personal Signaling Service
6181	1985	Southwestern Bell	Customer Specific Pricing Tariff
5952	1985	Southwestern Bell	Local Resale – Dobie Mall
6095	1985	AT&T	Cost and Rate Analysis – Private Line and FX
5610	1984	General Telephone	Rate Design; Access Charges, Toll, EAS, Overall Issues
5540	1984	AT&T	Long Distance, Operator Rates
5264	1983	General Telephone	Public Policy (Arco)
5220	1984	Southwestern Bell	Rate case; Cost Analysis and Rate Design; Access, Toll, Private Line, Local Service, other rates
5141	1983	Southwestern Bell	Inside Wire Policy
5011	1983	General Telephone	Service Quality
4545	1982	Southwestern Bell	Private Line Costs & Rates, Service Quality
4300	1982	General Telephone	Service Quality
3920	1981	Southwestern Bell	Private Line Costs & Rates
3340	1980	Southwestern Bell	Depreciation, Current Cost, Rates, Svc Quality
3094	1980	General Telephone	Service Quality
3040	1980	Mountain States Tel & Tel	Depreciation, Current Cost, Service Quality
2565	1979	Trinity Valley Tel Co	Service Quality
1529	1978	Continental Tel Co	Service Quality
1503	1978	Mountain States Tel & Tel	Service Quality
120	1977	Gulf States - United	Service Quality

Note – This listing does not include all of the proceedings in which Mr. Curry was involved; nor all in which he filed testimony. He was involved in the direction, strategy, review, and resolution of a large number of other cases during his tenure in management positions at the Texas PUC from 1985 until 2001.