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BEFORE THE

PENNSYLVANIA PUBLIC UTILITY COMMISSION

2006 Annual Price Stability Index/Service Price Index Filing of Denver & Ephrata Telephone and Telegraph Company	:	Docket No. P-00981430F1000; R-00061377
2006 Annual Price Stability Index/Service Price Index Filing of Buffalo Valley Telephone Company	:	Docket No. P-00981428F1000; R-00061375
2006 Annual Price Stability Index/Service Price Index Filing of Conestoga Telephone & Telegraph Company	:	Docket No. P-00981429F1000; R-00061376

REBUTTAL TESTIMONY OF DR. ROBERT LOUBE

ON BEHALF OF

PENNSYLVANIA OFFICE OF CONSUMER ADVOCATE

January 5, 2007

(Confidential or Proprietary Information Has Been Deleted)

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TESTIMONY OF
ROBERT LOUBE

LOUBE EXHIBIT LIST

Introduction and Summary

Q: Please state your name and business address.

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

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

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

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

A: My consulting practice centers on providing expert advice to state agencies involved in telecommunications regulation. Prior to joining Rhoads and Sinon, LLC, I worked for the Federal Communications Commission, 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.

Q: On whose behalf are testifying?

A: I am testifying on behalf of the Pennsylvania Office of Consumer Advocate (OCA).

Q: What is the purpose of your testimony?

A: The purpose of my testimony is to evaluate the testimonies of Mr. Beurer and Mr. Price in light of the goals for this proceeding as established by the Commission in its November 15 Order. Those goals are to determine whether the D&E companies' access rate changes are consistent with the Commission's access charge reform and universal

service policies, and are lawful under Chapter 30.[1] I have reviewed the testimony submitted by Mr. Leonard J. Beurer on behalf of D&E and Mr. Don Price on behalf of Verizon on December 18, 2006 in the above-captioned proceeding. In my Rebuttal Testimony, I will respond to the claims made by Mr. Don Price on behalf of Verizon Pennsylvania, Inc. and its Pennsylvania affiliates (collectively referred to as Verizon) regarding the rate increases associated with the May 3, 2006 Chapter 30 Price Stability/Service Price Index (PSI/SPI) of Denver and Ephrata Telephone and Telegraph Company, Conestoga Telephone and Telegraph Company and Buffalo Valley Telephone (collectively referred to as the D&E Companies). In particular, I will examine Mr. Price's claims that increases in the D&E Companies' access charges (1) increase subsidies flows from access charges to local services; (2) destroy the balance between affordable local rates, local and long distance competition established in the Global Order,[2] (3) impair long distance competition; and (4) decrease competitive entry into the local market.

Q: Please summarize your testimony.

A: My testimony is divided into six major sections. First, I discuss the meaning of the term subsidy and conclude that there is not sufficient evidence in this proceeding to support a claim that the D&E companies' local service is receiving a subsidy. Second, I review the D&E companies' traffic sensitive access rates. I explain how these rates are determined and why it is reasonable for the D&E companies' rates to be different from Verizon's traffic sensitive rates. I further explain that the D&E companies' traffic sensitive rate

[1] November 15 Order at 15.

increase is consistent with the Global Order because the increase allows the intrastate rates to match the interstate rates. Third, I examine the claim that an increase in the common line charge is an increase in an implicit subsidy. This claim is improper because the common line charge is not an implicit subsidy. Rather, it is an efficient mechanism for recovering the allowed revenues. The Commission should consider that the D&E companies' local service rates are generally higher than Verizon's local service rates. Fourth, I evaluate the relationship between access charges and local competition. Because every new competitor can claim the same access rates as the incumbent carrier, I conclude that the incumbent carrier does not have an unfair advantage if access rates are high. Fifth, I investigate the relationship between rural access charges and competition in the long distance markets. I explore the charge that when rural access rates are higher than urban access rates, long-distance carriers that serve both rural and urban customers will not be able to compete against carriers that serve only urban customers. I note that a carrier can, and AT&T, for example, has, offset higher rural carrier access charges with higher long distance charges for customers of rural incumbent local exchange carriers. I also note that the level of long distance competition in residential and small business markets is shrinking due to the withdrawal of the carriers from this market and the mergers of major carriers. This decrease in long distance competition reduces the importance previously placed on the level of access charges. Finally, I highlight the need to maintain affordable local prices. Recent increases in Pennsylvania local service rates may be contributing to the decrease in the Pennsylvania telephone penetration rate. An

[2] Re Nextlink Pennsylvania, Inc., Docket No. P-00991648; P-00991649, 93 PaPUC 172 (September 30, 1999) (Global Order).

increase in access charge rates is consistent with Commission policies if such an increase helps to maintain affordable local service.

Implicit Subsidies

Q: Please summarize this section of your testimony.

A: The purpose of this section of my testimony is to clarify the meaning of the term, "subsidy." This clarification is required because Mr. Price on numerous occasions in his testimony refers to subsidies and to the impact of subsidies on competition.[3] Yet nowhere in his testimony does he define the term. Moreover, he implies that an increase in the local service rate is necessary to reduce the alleged subsidy. Thus, we are led to understand that he believes that it is basic local service that is receiving the subsidy.

Therefore, I start this section of my testimony by defining the term "subsidy" and explaining when a subsidy is considered an implicit subsidy. I note that for a subsidy to exist, the price of the service subsidized must be below the incremental cost of the service. Next, I describe how the incremental cost of basic service may be estimated, and I discuss why loop costs are considered a common input to a variety of loop dependent services and not a cost that can be directly assigned to local services. Given that the determination of the existence of subsidy relies on the incremental cost of the service, and that no party has filed a local service incremental cost study, a claim that the local service is receiving a subsidy cannot be supported.

[3] Mr. Don Price, Direct Testimony filed on behalf of Verizon Pennsylvania and its affiliates, December 18, 2006, (Price Direct Testimony), page 11, lines 5-6; page 13, lines 11,and 14-16; page 14, lines 3, 5, 14-15, and 19; page 16, lines 4 and 19-20; and page 17, line 5.

Q: Please define the term "subsidy."

A: A generally accepted definition of a subsidy is that a service is subsidized if its price is less than the incremental cost and the service pays a subsidy if its price is above the stand-alone cost of service. This definition was introduced into the academic literature in 1975.[4] Since then, the definition has been adopted to determine whether to establish a state universal service fund.[5] In a recent Florida state proceeding, for example, witnesses for the consumer advocate, the carrier, and the interveners all agreed that a subsidy occurs only when the price is below the incremental cost of service.[6]

Q: What is an implicit subsidy?

A: An implicit subsidy is a subsidy that is embedded in rates charged, but not disclosed as such. The rates for one group of services are set higher than their stand alone cost. The revenue generated by the above cost rate is used to maintain rates below incremental cost for a second group of services.

Q: How can you determine whether a service is receiving a subsidy?

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[4] Faulhaber, G.R., Cross-subsidization: pricing in public enterprise. American Economic Review 65, 966-977.

[5] New Mexico Public Regulation Commission, The Identification of all Subsidies in the Existing Rates of Qwest Corporation, Final Order, Utility Case No. 3325 (December 19, 2000).

[6] Caldwell, D.D. Testimony, prepared on behalf of BellSouth, Gabel D., Testimony prepared on behalf of the Office of Public Counsel, Mayo, J.W., Testimony on behalf of AT&T Communications of the Southern States and MCI WorldCom Communications, Inc., The Petitions of Verizon Florida Inc., BellSouth Telecommunications Inc., Sprint-Florida Inc. to reform their intrastate network access and basic local telecommunications rates in accordance with Florida Statutes, Section 364.164, Florida Public Service Commission Docket Nos. 030867-TL, 030868-TL, and 030896-TL, October 31, 2003.

A: As noted above, a service receives a subsidy if the rate is below the incremental cost of service. Therefore, the first step in determining whether a subsidy exists is to define the incremental cost of a service.

Q: How is the service incremental cost defined?

A: The formal definition of incremental cost of a service is the difference between the total cost of providing all of the services and the stand-alone cost of providing the services other than the service under investigation.[7] This definition is the same as the one used by Verizon with the exception that Verizon uses the term Total Service Long Run Incremental Cost (TSLRIC) rather than incremental cost.[8] Changing incremental cost to Total Service Long Run Incremental Cost is the common convention used in many telephone proceedings. The term "total" defines the size of the increment to be investigated as the existing total demand for the service. The term "long run" requires that the cost estimate include the cost of the facilities and equipment that may be fixed in the short run.

Q: What are the components of TSLRIC for basic exchange local service?

A: The components would include the switching and interoffice facilities used to provide basic exchange local service plus the customer operations and marketing cost associated with basic exchange local service. The switching and interoffice facilities costs are the

[7] Baumol, W.J, and Sidak, J.G., Toward Competition in Local Telephony. MIT Press, 1994, p. 83.

[8] *See*, Verizon responses to data requests included in the testimony of William W. Dunkel on behalf of the Pennsylvania Office of Consumer Advocate, PA PUC Docket No. C-20027195, filed July 18, 2003, (Dunkel Testimony), p. 47.

network costs and the customer operations and marketing costs are the retail costs of providing basic service. The loop is not a part of the incremental cost of basic service.

Q: Why is the loop excluded for the incremental cost of local service?

A: The loop is excluded because it is a shared cost of the many services that use the loop. It is used to provide not only local service but also to provide interstate and intrastate access and toll service, and the newer data services such as DSL service. In Verizon's FIOS network, the loop also has the capability of providing video services. Verizon is providing video service to 118,000 wireline customers via its FIOS network.[9] The loop is part of the stand-alone cost of all other services.[10] Even if local service were no longer provided, the carrier would still have to provide the loop in order to provide the other services. Thus, the local loop and port are not incremental to the provision of local service. As the number of services that may be provided over the local network grows, it becomes increasingly difficult to take the position that one service, *e.g.* local exchange service, must pay for the entire loop that delivers many services.

The FCC acknowledged this relationship when it created total element long run incremental cost to determine the forward-looking cost of Unbundled Network Elements (UNE). The FCC stated:

> ... separate telecommunications services are typically provided over shared network facilities, the cost of which may be joint or common with respect to some services. The cost of local loops and their associated line cards in local switches, for example, are common with respect to interstate access and local

[9] These are nationwide data. *See,* Verizon Communications Investor Quarterly 3Q 2006, page 3.

[10] It is also part of the stand-alone costs of each service taken separately.

exchange service, because once these facilities are installed to provide one service they are able to provide the other service at no additional cost.[11]

Q: How would you estimate the incremental network cost of providing local service?

A: An estimation technique that is consistent with the definition of incremental cost would be a three-step process. First, the estimating model is run including the local exchange minutes. Second, the estimating model is run excluding the local exchange minutes. Third, the results of step two are subtracted from the results of step one. However, this three-step process is generally not followed in determining TSLRIC. Instead, the estimating model is run once and shared costs are allocated among the services that use these costs.

Q: Do previous PUC orders support your contention that the loop is a shared cost that must be allocated among a number of services rather than a direct cost of basic service?

A: Yes. In Verizon's (then Bell Atlantic's) rate rebalancing case in Pennsylvania, the PUC determined that 100 percent of the loop costs should not be assigned directly to basic service.

In particular, the PUC found:

> [W]e generally agree with the analysis of the ALJ, as amplified by the OCA, and the OTS with regard to the rejection of Bell's studies based on the allocation of 100% of dial tone line costs to the dial tone line component of local exchange service. That dial tone line is a specific service, with specific demand, begs the question of whether the 100% allocation of these costs to one class of service is acceptable. It is without question that the dial tone serves as the platform from which a host of telecommunications services are, in fact, provided.

[11] Implementation of the local competition provisions in the Telecommunications Act of 1996, First Report and Order, CC Docket 96-98, FCC 96-325 (Local Competition Order), ¶ 678.

> Consequently, while there may be some merit in Bell's distinction that the debate over the proper allocation to other services is to be viewed as a debate over the proper recovery of these costs, the allocation of 100% to one component renders the Rate Rebalancing proposal of Bell inherently flawed. Thus, while we do not, as of yet, endorse any competing percentage allocation of local loop costs, we find that 100% allocation to one component is not reasonable and does not result in a revenue neutral impact.[12]

In another proceeding the PUC also found:

> We agree with the PTA and the OCA that local loop costs are joint or shared costs since the local loop is jointly utilized to provide a wide array o telecommunications services, among which are basic universal services. Our view is unaffected by whether one views basic universal service as a single service or a group of services.[13]

Q: Has the PUC addressed the issue of joint loop costs with regard to access charges?

A: Yes. In the Global Order, the PUC used the term non-traffic-sensitive costs to denote loop costs. The PUC stated that "In providing switched access for the completion of a toll call, a LEC will incur both non-traffic (NTS) costs and traffic-sensitive costs."[14] It noted that the loop cannot be allocated on a cost-causative basis because all of the facilities are required to provide only local service or only to provide access service. Rather, regulators make allocation of these costs, and then proceed to determine a method to recover the allocated costs.[15]

Q: Has the FCC discussed other factors that might affect subsidies?

A: Yes. The FCC was concerned with the way in which costs are recovered. The FCC "has long recognized that, to the extent possible, interstate access costs should be recovered in

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[12] Opinion and Order, Docket No. R-00963550 *et.al.* (Dec. 12, 1996), pages 23-24.

[13] Order, Docket No. I-00940035 (adopted Aug. 31, 1995), page 12.

[14] Global Order, page 12.

[15] Global Order, page 12 and n6.

the manner they are incurred. In particular, non-traffic sensitive costs – costs that do not vary with the amount of traffic carried over facilities - should be recovered through fixed flat charges, and traffic sensitive costs should be recovered through per-minute charges."[16] The FCC believed that such a structure of rates would lead to competition and greater efficiency.

Q: Has the PUC reached a similar conclusion?

A: Yes. The PUC has changed the state common line access charge from a per-minute rate to a per-line rate "to reflect the fact that the CCLC (common carrier line charge) is a non-traffic sensitive (NTS) charge."[17]

Q: How do the D&E Companies recover state common line revenue through access charges?

A: The D&E Companies impose a per-line carrier charge on interexchange carriers. The common line rates are $5.11, $4.44 and $5.17 for Buffalo Valley, Conestoga, and Denver & Ephrata, respectively.[18] Because these rates are per-line rates, no subsidy is generated by high-volume users to support costs associated with low-volume users.

Q: Have any of the parties to this case filed an incremental cost study in this docket?

A: No.

Q: Is it possible to assert the existence of a subsidy without such a study being made?

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[16] In the Matter of the Multi-Association Group (MAG) Plan for Regulation of Interstate Services of Non-Price Cap Incumbent Local Exchange Carriers and Interexchage Carriers, CC Docket No. 00-256, Second Report and Order and Further Notice of Proposed Rulemaking, FCC 01-304 (MAG Order) ¶ 17.

[17] Global Order, page 26.

[18] Mr. Leonard J. Beurer, Direct Testimony on behalf of Denver and Ephrata Telephone and Telegraph Company, Conestoga Telephone and Telegraph Company and Buffalo Valley Telephone Company, (Beurer Direct Testimony) Exhibit 3, Sheet 1.

A: No. It is not possible to determine if local service is receiving a subsidy from other services whenever it is not possible to state that the price is below the incremental cost of service. Any assertion by Mr. Price that a subsidy of local service exists is unsupportable.

The D&E Companies Traffic Sensitive Rate Increases

Q: Please summarize this section of your testimony.

A: In this section of my testimony I challenge the statement that the D&E companies' access traffic sensitive rates should equal Verizon's rates and explain why the D&E companies' access rate increase is consistent with the Commission's policies. My argument begins with an explanation of how Verizon's current rates have been established essentially through a settlement in the interstate jurisdiction. The settlement rates are not based on cost, but rather they are based on a consensus of the parties in a particular coalition. On the other hand, the D&E companies' interstate rates are based on a proxy cost method calculated by the National Exchange Carrier Association and approved by the FCC. There is no reason to expect that the two diverse methods of determining rates would reach the same answer, and there is no reason to believe that results of a consensus building procedure of large carriers could determine the correct rates for small rural carriers such as D&E companies. Moreover, the D&E companies' access rate increase is consistent with Commission policy because the increase equalizes the carriers' intrastate rates with their interstate rates.

Q: What are traffic sensitive rates?

A: Traffic sensitive rates are the rates associated with the part of the telephone network where the amount of equipment installed and used is considered to be a function of the use of that equipment as measured in terms of minutes of use or calls. These rates include the rate for local and tandem switching, transport and signaling.

Q: Please describe the D&E Companies Rate Increases.

A: In general, D&E increased their access charges to recover the revenue associated with the increase in the PSI. Each carrier increased its traffic sensitive rates to align these rates with the existing interstate traffic sensitive rates. Denver and Ephrata and Buffalo Valley increased their carrier per-line charge, while Conestoga decreased its carrier per-line charge. Each carrier also made a variety of other minor rate changes.

Q: Please discuss Mr. Price's criticism of the D&E Companies' Traffic Sensitive Rate Increase.

A: Mr. Price demonstrates that the D&E Companies' traffic sensitive rates are several multiples above the Verizon traffic sensitive rates. He asserts that it should be the ultimate goal of the Commission to reduce the D&E Companies' rates "to bring their access rates in line with the reasonable rates charge by Verizon."[19]

Q: What is Verizon's basis for considering the current Verizon intrastate access charges reasonable?

A: The only basis for determining the reasonableness of Verizon's current intrastate access charges is that they are based on Verizon's current interstate access rates.

Q: What is the basis for the current Verizon interstate access rates?

A: The fundamental framework for the current Verizon interstate access rates was established in the CALLS (Coalition for Affordable Local and Long Distance Service) proceeding.[20] As a consequence of that proceeding, Verizon traffic sensitive access rates were reduced, its SLC rates were increased, the FCC price-cap mechanism was altered, and a new universal service fund mechanism was established to support high-cost price-cap regulated carriers.[21]

Q: Were the CALLS average traffic-sensitive rates based on a cost analysis?

A: It is my understanding that the rates were not based on a cost analysis. Instead, the rates were presented to the Commission as part of a consensus proposal. While the consensus proposal was modified, the supporters of the proposal did not provide cost support data for the rates.

Q: Did the CALLS proceeding require rural carriers to have the same average traffic sensitive access rate as the large non-rural Bell carriers?

A: No. The CALLS proceeding did not require all carriers to have the same interstate average traffic sensitive access rate. Instead, it established three rates. The rate for the Bell carriers and GTE was set at 0.55 cents per-minute; for a group of medium-sized

[19] Price Direct Testimony, page 17, lines 17-18.

[20] *See*, In the Matter of Access Charge Reform, CC Docket No. 96-262, Sixth Report and Order, FCC 00-193, (rel. May 31, 2000) (CALLS Order).

[21] Id., ¶30.

companies at 0.65 cents per-minute; and for rural price cap carriers at 0.95 cents per-minute.[22]

Q: Is Verizon's current interstate average traffic sensitive rate equal to the 0.55 cent rate established in the CALLS proceeding?

A: No. The current average traffic sensitive rate is 0.67185 cents per minute of use (MOU).[23] Thus, Verizon has found it necessary to apply for and receive access rate increases since the adoption of the CALLS order.

Q: Did the CALLS Order provide incumbent local exchange carriers (ILECs) with universal service support?

A: Yes. The CALLS Order established the Interstate Access Support (IAS) Mechanism. This mechanism provides support to ILECs with allowed revenue that is above average. The revenue measure is known as the CMT revenue, which is a combination of common line, marketing and residual transport revenue. The mechanism provides support by UNE zone. The allowed revenue is allocated to each zone on the basis of the relative zone UNE loop and port costs. When it was established, the IAS mechanism was capped at $650 million annually.

Q: Does Verizon receive IAS support?

A: Yes. The combined Verizon Pennsylvania study areas are projected to receive $16.98 million in 2007.[24] Competitive local exchange carriers (CLEC) operating in UNE zones

[22] Id.,¶ 177.

[23] Verizon Tariff Review Plan, filed July 3, 2006, http://svartifoss2.fcc.gov/prod/ccb/etfs/bin/search.cgi.

3 and 4 of the former GTE and Contel study areas and UNE zone 4 of the former Bell and Quaker study areas are also projected to receive IAS support in 2007.[25]

Q: How are the D&E Companies' interstate access rates established?

A: The D&E Companies participate in the National Exchange Carrier Association (NECA) traffic sensitive pool. On behalf of all of the pool participants, NECA files its Tariff 5 with the FCC annually. The NECA proposed rates allow the pool participants to recover their costs and 11.25 percent return on capital.[26] The pool participants are divided into groups of similar carriers. All carriers within a group charge the same rates. For example, there is a separate local switching charge for eight different groups of carriers.[27] The D&E Companies' rate would be one of the eight local switching rates depending on each carrier's group assignment.

Q: Do the D&E companies settle with the NECA pool on the basis of the D&E companies' cost?

A: No. The D&E companies are average schedule companies. Because of their average schedule status they do not submit cost information. Instead, NECA develops a proxy cost for these companies based on a sample of the cost for carriers that file cost studies. NECA develops cost equations that relate the cost of a particular function to a group of

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[24] *See*, Universal Service Administrative Company, USAC FCC Filing, First Quarter Appendices -2007 http://www.usac.org/about/governance/fcc-filings/2007/quarter-1.aspx, HC-12.

[25] Id., HC-13.

[26] *See*, National Exchange Carrier Association, Access Service, Tariff FCC No. 5, Transmittal No. 1129, June 16, 2006.

[27] *See e.g.*, National Exchange Carrier Association, FCC Tariff 5, Base Tariff Section 17, Rates and Charges filed December 5, 2006, http://svartifoss2.fcc.gov/prod/ccb/etfs/bin/search.cgi.

attributes. The attributes include such measures as lines, number of exchanges, and interstate access minutes. Each average schedule carrier's attributes are substituted into the equation to determine that carrier's proxy cost.[28] NECA settles with the D&E companies on the basis of the difference between each carrier's revenue and its cost proxy.

Q: How do the D&E companies' settlement results compare with the D&E companies' rates?

A: A comparison of D&E settlement results and rates shows that the gross settlement on a per-minute basis is greater than the rate. The gross settlement numbers are reported in Beuer proprietary Exhibit 5, sheet 2, and the total composite TS per MOU (traffic sensitive per minute of use) rates are reported in Beuer proprietary Exhibit 3, Sheet 1. The gross settlement is the NECA proxy cost for the provision of traffic sensitive services. Therefore, the D&E companies' traffic sensitive rates are below their proxy cost of service.

Q: Did the Commission require all ILECs to have the same access rates as a result of the Global Proceeding?

A: No. The Commission took a number of actions to revise the rates of large companies, such as Verizon, and smaller companies, such as the D&E companies. These actions recognized the different cost and ratemaking characteristics of the companies as well as their existing rates. Notably, the PUC has not attempted to apply a single ratemaking goal to this large group of companies that have very different characteristics.

[28] *See*, NECA's 2006 Modification of Average Schedules, filed December 29, 2005, WC Docket No. 05-347.

The D&E Companies' Common Line Rate Increases

Q: Please summarize Mr. Price's position regarding the D&E Companies' Common Line Increases.

A: Mr. Price notes that the bulk of the revenue increase for Denver and Ephrata and Buffalo Valley is associated with increases in the common line rate.[29] He is also aware that Conestoga decreased its common line rate. Mr. Price argues that these access rate increases "contravene this Commission's policy of removing implicit subsidies from access rates and serve to further widen the disparity between D&E companies' access rates and the drastically reduced access rates charged by Verizon."[30]

Q: Is the carrier charge a subsidy?

A: No. It is a payment towards partial recovery of the shared costs of the loop.

Q: Is it efficient to recover the shared cost of the loop from the interexchange carriers by retaining the carrier charge?

A: Yes. The most common efficiency claim associated with loop charges is that the loop charges should be flat-rated rather than recovered through a per-minute rate because loop cost does not vary with usage. For example, in support of recovering the cost of the loop through a carrier charge, the FCC stated:

> [it] will reduce usage-sensitive interstate access charges by phasing out local loop and other non-traffic sensitive (NTS) costs from those charges and directing incumbent local exchange carriers (LECs) to recover those NTS costs through

[29] Price Testimony, page 4, line 15 to page 7 line 12.

[30] Id., page 17, lines 3-4.

more economically efficient flat-rated charges. Because NTS costs, by definition, do not vary with usage, the recovery of NTS costs on a usage basis pursuant to our current access charges rules amounts to an implicit subsidy from high-volume users of interstate toll services to low-volume users of interstate long-distance services.[31]

The carrier charge is consistent with the FCC's intentions as stated in the above paragraph. The carrier charge is a flat rated charge designed to recover the NTS loop costs. Therefore, the carrier charge is an efficient mechanism for recovering loop costs.

Q: Should the D&E carrier charge equal the Verizon carrier charge?

A: There is no reason to expect that the carrier charge for these carriers should be the same. Each carrier recovers its revenue from its customers based on the ability of the carrier to obtain revenue from a variety of sources, including the rate for local service, and their own cost characteristics.

Q: *Are the D&E carriers' residential basic local service rates equal to Verizon's rates?*

A: D&E companies' rates are, on average, higher than the Verizon's residential rates. The average residential rates are ***BEGIN PROPRIETARY ***

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[31] In the Matter of Access Charge Reform, First Report and Order, CC Docket No. 96-292, FCC 97-158, (rel. May 16, 1997) at ¶6.

and Ephrata rates would be higher than all of the Verizon rates. Also, the Denver and Ephrata average rates would be *** **BEGIN PROPRIETARY** ***

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Q: Are the D&E companies' common line costs higher than Verizon's common line costs?

A: It is not possible to directly answer that question because the D&E companies are average schedule carriers and thus do not file costs studies. However, it is known that the proxy costs for the D&E companies are greater than Verizon's costs. NECA prepares a proxy cost for the D&E companies based on the cost of similar companies. These costs are reported as part of NECA's universal service filing along with the cost for carriers that file cost studies. The proxy cost for the D&E companies is $304.13 per-line.[32] The Verizon reports per-line costs of $279.10, $261.14, $225.58, and $221.56 for the Bell, GTE, Quaker and Contel study areas respectively.[33] This cost differential could contribute to the fact that the D&E companies have a higher common line rate.

Access Charges and Local Competition

Q: Please summarize Mr. Price's position on the relationship between access charges and local competition.

A: Mr. Price asserts that high access charges discourage entry of competitors into the local market. His assertion is based on his argument that the potential competitor will be

[32] National Exchange Carrier Association (NECA), Universal Service Fund 2006 Submission of 2005 Study Results, filed September 29, 2006, Appendix E.

discouraged from entering a market where the price for local service is low due to an alleged subsidy from high access charges.[34]

Q: Do you agree with Mr. Price?

A: No. The potential competitor would review the opportunity to earn a profit from offering a service. The profit that can be earned is dependent on all the revenues that the new competitor would receive from serving a customer. Among those revenues is the access charges associated with the calls made by the customer. The potential competitor can charge the same allegedly high access charges that the D&E companies charge. Thus, the competitor can obtain the same amount of revenue in the form of the sum of the local service rate plus the access charge revenue as the existing incumbent. Therefore, the incumbent does not have an advantage from the current rate structure and competitive entry has not been discouraged by the current rate structure.

Q: Hasn't the FCC previously ruled consistent with your position regarding the use of total revenue as the major factor affecting entry in another proceeding?

A: Yes. The FCC, in its Triennial Review Order (TRO) examined the conditions associated with impairment by investigating whether a potential entrant would be discouraged from entering a market without the use of particular unbundled network element. The framework for the impairment discussion centered on the barriers to entry and the ability to enter a market. The ability to enter the market is dependent on the revenues that can be earned. The FCC stated:

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[33] Id.

[34] Price Direct Testimony, page 13, lines 11-17.

> Thus, we will consider, where provided, evidence of revenue opportunities available to those carriers that provide services over relevant facilities, keeping in mind that competitors are able to choose which markets to enter and to avoid unattractive markets. We consider *all* (emphasis in the original) the revenue opportunities that a competitor can reasonably expect to gain over the facilities, *from providing all possible services that an entrant could* reasonably expect to sell, taking into account limitations on entrants' ability to provide multiple services, such as diseconomies of scope, production, management, and advertising.[35]

The access charge revenue associated with a customer's long distance calling is just one of the revenue sources among all of the revenue sources. Simply as a matter of competitive entry, even if local rates were too low, it would not affect local competition because the carrier entering the market could also establish a low local service rate and charge the hypothetically subsidizing access rate.

Q: Didn't a Verizon representative in the recent Pennsylvania Missoula workshop indicate that it may no longer be feasible to increase across-the-board rates and reduce access charges?

A: Yes. Mr. Dennis Weller explained that increases in across-the-board rates in order to reduce access charges may be a strategy that no longer makes sense for local exchange carriers. He stated that:

> ... the window is now closing on us to a large degree on the extent to which we can continue to re-engineer these plans

[35] In the Matter of the Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers, CC Docket No. 01-338, Report and Order and Order on Remand and Further Notice of Proposed Rulemaking, FCC 03-36 (rel. Aug. 21, 2003) ¶100.

on the basis of across-the-board rate increases whether you call them SLCs or anything else.[36]

Mr. Weller also noted that increasing local charges across the board rate was an antiquated policy that may have made sense six years ago but is no longer a legitimate course of action.[37]

Q: What is the implication of Mr. Weller's statements?

A: The implication is that local exchange carriers cannot necessarily expect to implement across-the-board local rate increases as a means of reducing access charges on a revenue neutral basis. It is clear that Mr. Weller is referencing a potential SLC or local rate increase as presenting a similar problem. Local exchange carriers must rely on other revenue sources including access charges. Thus, Mr. Weller, on behalf of Verizon in the Missoula workshop proceeding, argued for not requiring an industry wide increase in local charges while reducing various types of access revenue. Mr. Price, on behalf of Verizon in this proceeding, is arguing that local rate increases are quite appropriate for the D&E companies.

Access Charges and Long Distance Competition

Q: Please summarize Mr. Price's position with regard to the impact of the D&E companies' access price increase on long distance competition.

A: Mr. Price argues that the D&E rates would reduce long distance competition because it would penalize long distance carriers that serve both urban and rural carriers relative to

[36] Pa PUC Missoula Plan Workshop, Docket No. M-00061972, September 11,2006, Tr. 120, lines 6-9.

[37] Id., page 120, lines 10-20.

long distance carriers that serve only urban areas. [38] Mr. Price argues that the D&E rates would discourage long distance carriers from providing service in rural areas.[39]

Q: Do you agree with Mr. Price's assessment of the impact of the D&E companies' access price increase on long distance competition?

A: No. First, Mr. Price has not presented any data that confirms that long distance carriers are leaving rural markets and serving only urban markets. Therefore, there is no evidence that the so-called penalty has the effect that Mr. Price argues it has. Second, the D&E companies make up a small part of the long distance market and thus, their access rates would not govern the business strategies of long distance carriers. Third, long distance carriers can charge different prices to customers of independent local exchange carriers to recover any differential access charges that the independent carriers may charge. Fourth, long distance competition for mass market competition has been significantly reduced because of the actions of AT&T and MCI following the elimination of the unbundled network element – platform service (UNE-P) such that stand alone long distance companies are rare nowadays. Fifth, Verizon's independent entrance into the long distance market and the merger of Verizon and MCI further reduced competition in the long distance market. Sixth, inter-exchange carriers (IXCs) generally set their rates based on national considerations and not the specific factors in any one area.

Q: What is the basis for your statement that the D&E companies represent a small percentage of the long distance market?

[38] Price Direct Testimony, page 15, lines 4-10.

[39] Id., page 16, lines 1-2.

A: According to data collected by NECA and published in the FCC's monitoring report, the D&E companies generate 2.4 percent of the Pennsylvania interstate access minutes. This percentage is less than Verizon's 81.6 percent, Embarq's 6.2 percent, Windstream's 3.3 percent and Commonwealth's 3.9 percent.[40] It is reasonable to assume that the percentages of the state toll market are similar to the percentages for the interstate market.

Q: What evidence supports your claim that long distance carriers can charge higher rates to customers of independent carriers than for customers of Verizon?

A: AT&T Pennsylvania's tariff lists a number of services where AT&T charges a higher rate for customers of independent carriers than for customers of Verizon. I report these rates in Exhibit RL-2. If AT&T can develop such pricing, then it should be possible for all carriers to develop a similar strategy. Therefore, it is possible for a carrier serving rural areas to obtain more revenue from those areas and not be penalized when competing against a carrier that serves only urban customers.

Q: What evidence do you have that AT&T and MCI have reduced their presence in the mass market portion of the long distance market?

A: MCI and the old AT&T (the AT&T prior to it being acquired by SBC) announced that they were pulling out of the mass market interexchange markets. In mid-2004, AT&T

[40] Universal Service Monitoring Report, CC Docket No. 98-202, 2006 (Data Received Through May 2006), Prepared by Federal and State Staff for the Federal-State Joint Board on Universal Service in CC Docket No. 96-45, Table 8.4.

decided to cease actively competing for new mass-market customers.[41] It further decided to increase its rates and allow customer churn to erode its customer base.[42] These actions are not short-term activities. Rather, AT&T believes that "those actions are so extensive that AT&T's decision is now irreversible as a practical matter."[43] Similarly, MCI decided to exit the mass-market portion of the industry in 2004.[44] MCI has also decided to increase rates for long distance residential customers.[45]

AT&T had been the leading U.S. interexchange carrier and MCI the second leading carrier. As late as 2002, AT&T had 32.9 percent of the national long distance market and MCI 21.1 percent. These percentages are based on data that includes the long distance service provided by the wireless and incumbent local exchange carriers.[46] With regard to the Mid-Atlantic household market, AT&T served 40.9 percent of the pre-subscribed

[41] SBC Communications Inc. and AT&T Corp, public interest statement, WC 05-65, In the Matter of SBC Communications Inc. and AT&T Corp., Applications for Approval of Transfer of Control, Attached Declaration of John C. Polumbo, ¶2.

[42] Id., ¶9.

[43] Id. 2. *See also*, SBC Communications Inc. and AT&T Corp, public interest statement, WC 05-65, In the Matter of SBC Communications Inc. and AT&T Corp., Applications for Approval of Transfer of Control, page 49.

[44] Verizon Communications Inc. and MCI Inc., public interest statement, WC 05-75, In the Matter of Verizon Communications Inc. and MCI Inc., Applications for Approval of Transfer of Control, page 4.

[45] Id., *Attached Declaration of Wayne Huyard*, ¶18.

[46] FCC, Telephone Trends, May 2004, Table 9.8.

households and MCI served 15.4 percent of those households.[47] AT&T revenues and the number of customers it serves have decreased significantly over the last two years.[48]

Q: Why did the old AT&T and MCI decide to exit the mass market?

A: AT&T and MCI have provided several reasons for leaving the mass market. Each carrier noted that there has been increased competition from intermodal carriers. They have stated that it is very important to be able to compete in more that just the stand-alone long distance market. For example, AT&T asserted that to remain an active competitor it had to find a viable means "to match other wireline and wireless providers' attractive 'all-distance' offerings."[49] Verizon/MCI stated that "to the extent that customers continue to purchase wireline local and long-distance services, they are increasingly purchased and supplied on an integrated basis, from a single provider."[50] Both carriers asserted that the only way that they could match the "all-distance" or "single-provider" standard was to combine their long distance service with UNE-P based local service.[51] Therefore, once the UNE-P option was eliminated, the carriers left the market.

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[47] Id., Table 9.10, The Mid-Atlantic district includes Delaware, District of Columbia, Maryland, New Jersey, Pennsylvania, Virginia, and West Virginia.

[48] SBC Communications Inc. and AT&T Corp, public interest statement, WC 05-65, In the Matter of SBC Communications Inc. and AT&T Corp., Applications for Approval of Transfer of Control, Attached Declaration of John C. Polumbo, ¶37-38.

[49] Id., ¶6.

[50] Verizon Communications Inc. and MCI Inc., public interest statement, WC 05-75, In the Matter of Verizon Communications Inc. and MCI Inc., Applications for Approval of Transfer of Control, page 35.

[51] Declaration of Wayne Huyard,, ¶¶10-11; AT&T response to Set One of OCA's Interrrogatory OCA-1, Attached affidavit of John C. Polumbo, ¶6-7.

Neither carrier mentioned high state access charges as a fundamental concern in their decision to leave the consumer market.

Q: Does the exit of AT&T and MCI from the Pennsylvania mass market reduce the *importance of decreasing the state access charges?*

A: Yes. IXCs have generally argued that it was important to reduce access charges in order to encourage them to compete. Now that the major carriers that pay those access charges have left the consumer market, and have in fact been acquired by the major incumbent LECs, much of the reason for reducing the access charges has also been removed. It makes no sense to increase basic local service rates to respond to an argument that is no longer relevant.

Access Charges and Affordability

Q: What are your concerns regarding the affordability of local service in Pennsylvania?

A: Mr. Price says that, in lieu of increasing intrastate access rates, basic local service rates could just be increased by *** **BEGIN PROPRIETARY***** ***** **END PROPRIETARY***** per line for Buffalo Valley, Conestoga and Denver and Ephrata, respectively.[52] In making this statement, Mr. Price fails to recognize the impact on consumers of such an increase. I am concerned about the decline in the telephone penetration rate in Pennsylvania. As recently as 2002, the Pennsylvania telephone penetration rate was 98.0 percent. As of March 2006, the Pennsylvania telephone

[52] Price Direct Testimony, page 4, line 15 to page 8, line 2.

penetration rate had declined to 94.8 percent.[53] One factor that may be contributing to the decrease is the fact that the rate for local service has been increasing. Mr. Beurer notes that the D&E companies' local rates have increased between 160 to 200 percent since the adoption of the Global Order[54]. To prevent further declines in the telephone penetration it may be necessary to limit future basic service rate increases.

Q: How can access rates and rate increases affect the affordability of telephone service?

A: An increase in access charge revenue can be a substitute for increases in local service rates and can used be to recover allowed Chapter 30 revenue increases. Therefore, access rate increases can increase the affordability of local service. Moreover, it is important to remember that access service is a protected service and, therefore, the Chapter 30 allowed revenue increase is a function of the existing access revenue. If the Commission required a company to increase only its local service rates during Chapter 30 rate reviews, it would be requiring local service to recover revenues associated with access service.

Q: Should the Commission reverse the D&E companies' access rate increases?

A: No. The increases are an interim solution that maintains the affordability of local service while not having a significant negative impact on other telephone markets. Future rate proposals should be evaluated in light of the guidelines that the Commission may develop as part of its comprehensive review of access charges and universal service.

[53] Alexander Belinfante, Telephone Subscribership in the United States (Data through March 2006), Industry Analysis and Technology Division, FCC, released: October 2006.

[54] Beurer, page 45, lines 18-20.

Conclusions and Recommendations

Q: Please summarize your conclusions and recommendations in this case.

A: My conclusions and recommendations include:

- There is insufficient evidence to assert that the D&E local service rates are subsidized.
- It is not reasonable to decrease the D&E traffic sensitive access rates to the same level as the Verizon traffic sensitive access rates.
- The D&E traffic sensitive access rates are reasonable because they are based on the proxy cost calculations.
- The D&E common line access rate increases are consistent with the Commission's goal of maintaining affordable local service rates
- The D&E access rates and the recent changes in those rates will not have a negative impact on the level of competition in the long distance market
- The D&E access charges will not have a negative impact on local competition because every local competitor can charge the same access charges as the D&E companies.
- The Commission should allow the D&E access charge changes to remain in place until it establishes new guidelines for access reform and universal service policies.

Q: Does this conclude your testimony?

A: Yes.

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EXHIBIT RL-1

Vita

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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

Utility Regulation

Director, Economic Research
Rhoads & Sinon, LLC
April 2001 to the present

Responsibilities include:

- Prepared comments on behalf of the Pennsylvania Office of the Consumer Advocate, FCC Intercarrier Compensation Workshop and Solicitation of Comments on the Missoula Plan, Pennsylvania Public Utility Commission Docket No. M-000061972.

- Prepared an affidavit on behalf of the National Association of Utility Consumer Advocates (NASUCA) and the Maine Office of the Public Advocate, In the Matter of

Jurisdictional Separations and Referral to the Federal-State Joint Board, CC Docket No. 80-286, filed August 22, 2006.

- Advisor to the Maryland office of the People's Counsel, In the Matter of Cavalier Telephone Midwest Atlantic for Breach of Interconnection Terms by Verizon Maryland, Inc., Case No. 9046.

- Testified on behalf of the Maine Office of Public Advocate in the Investigation Into Verizon Maine's Alternative Form of Regulation, Phase I, Docket No. 2005-155, October 17 and October 18, 2006.

- Prepared comments on behalf of the National Association of State Utility Consumer Advocates (NASUCA) In the Matter of the Federal-State Joint Board on Universal Service, CC Docket No. 96-45, filed March 27, 2006 (with David Gabel and the NASUCA Telecommunications Committee).

- Prepared rebuttal testimony on behalf of the Washington State Public Counsel in the Investigation of the Sprint-Nextel Merger, Washington Utilities and Transportation Docket No. UT-051291, January 30, 2006.

- Filed direct testimony on behalf of the Maine Office of Public Advocate in the Investigation Into Verizon Maine's Alternative Form of Regulation, Phase II, Docket No. 2005-155, January 13, 2006.

- Testified on behalf of the Maine Office of Public Advocate in the Investigation into Line Sharing, Maine Docket No. 2004-809, November 18, 2005.

- Testified on behalf of the Maine Office of Public Advocate in Verizon Communications, Inc. and MCI, Inc., Review of Joint Application for Approval of Merger, Maine Docket No. 2005-154, September 29, 2005.

- Filed direct, rebuttal and surrebuttal testimony on behalf of the Office of Consumer Advocate in Pennsylvania Docket No. C-20027195, June 8, June 29, and July 11 2005.

- Filed a rebuttal declaration regarding price floor issues

on behalf of The Utility Reform Network in re: Investigation on the Commission's Own Motion into Open Access and Network Architecture Development of Dominant Carrier Networks, Verizon UNE Phase, Investigation 93-04-002, filed April 1, 2005.

- Filed a price floor declaration on behalf of The Utility Reform Network in re: Investigation on the Commission's Own Motion into Open Access and Network Architecture Development of Dominant Carrier Networks, Verizon UNE Phase, Investigation 93-04-002, filed January 28, 2005.
- Filed direct testimony on behalf of Public Counsel and AARP in re: WUTC v. Verizon,Docket No. UT-040788, before the Washington Utilities and Transportation Commission, December 17, 2004.
- Filed a rebuttal declaration on behalf of The Utility Reform Network in re: Investigation on the Commission's Own Motion into Open Access and Network Architecture Development of Dominant Carrier Networks, Verizon UNE Phase, Investigation 93-04-002, filed November 9, 2004
- Prepared a report on the State of Telecommunications Services in Nevada for the subcommittee to study telecommunications service in Nevada, August 2004,
- Filed a declaration on behalf of The Utility Reform Network in re: Investigation on the Commission's Own Motion into Open Access and Network Architecture Development of Dominant Carrier Networks, Verizon UNE Phase, Investigation 93-04-002, filed August 6, 2004
- Filed expert rebuttal testimony on behalf of the Staff of the South Carolina Commission in re: Implementation of requirements Arising from Federal Communications Commission Triennial UNE review: Local Circuit Switching for mass market customers, SC PSC Docket No. 2003-326-c.
- Testified on behalf of the Pennsylvania Office of Consumer Advocate in re: Investigation into the Obligations of Incumbent Local Exchange Carriers to Unbundle Network Elements, PA PUC Docket No. I-0030099.
- 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. 01-92.

- Assisted the Universal Service Administrative Company in managing the interstate common line support program.

Industry Economist, GS 301-15
Federal Communications Commission
May 1996 to April 2001

Responsibilities include:

- 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.

Director, Office of Economics
Public Service Commission of the District of Columbia,
July 1993 to May 1996

Responsibilities include:

- 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.

Acting Director, Office of Economics
Public Service Commission of the District of Columbia,
February 1993 to July 1993

Responsibilities include:

- Prepared comments on FERC Notices of Proposed Rulemaking.
- Represented the Commission on the telephone quality of service and low-income program working groups.

Senior Telecommunications Economist
Public Service Commission of the District of Columbia,
May 1989 to the February 1993

Responsibilities include:

- 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.

Econometrician,
Indiana Utility Regulatory Commission,
March 1988 to May 1989

Responsibilities include:

- 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.

Principal Utility Analyst,
Indiana Utility Regulatory Commission,
January 1986 to March 1988

Responsibilities include:

- 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.

International Consulting

Telephone Organization of Thailand, conducted a Tariff and Cost Workshop for Senior Management and Staff, Bangkok, February 5-7, 2001. Contractor: Booz, Allen & Hamilton, Inc.

Ministry of Communications, 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, Jakarta, August 20-September 9, 2000. Contractor: Nathan Associates, Inc.

Teaching

Assistant Professor,
James Madison University,
September 1983 to December 1984

Instructor,
James Madison University,
September 1979 to June 1983

Courses Taught: Industrial Regulation, Industrial Organization (undergraduate and MBA), Intermediate Macroeconomic Theory, Economic Analysis (MBA), Principles (Macro and Micro)

Other

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

Publications

"The Telecommunications Act of 1996: Residential Rates and Competition," *Utilities Policy*, September 2004.

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

"Public Interest Regulation, Common Costs and Universal Service," eds. Edythe S. Miller and Warren J. Samuels, *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," *Ninth NARUC Biennial Regulatory Information Conference*, September 1994 (with David Gabel and Mark Kennet).

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

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

"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," *Sixth NARUC Biennial Regulatory Information Conference*, Ohio State University,1988 (with Katri Clodfelder).

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

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

"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, Argonne, Illinois: Argonne National Laboratory, 1981 (with Philip Kier, et al).

"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.

Staff Testimony

Before the Public Service Commission of the District of Columbia:

Formal Case No. 929 The Application of Potomac Electric Power Company for an Increase in its Retail Rates for the Sale of Electric Energy.
Principal Issues: Class Revenue Responsibility, Rate Structure and Low Income Rates.

Formal Case No. 926 The Application of The Chesapeake and Potomac Telephone Company for Authority to Establish a Revenue Requirement and to Increase and Restructure its Schedule of Rates and Charges
Principal Issues: Centrex burden and the Centrex embedded cost study.

Formal Case No. 917
Phase II The Application of Potomac Electric Power Company For Approval of its Third Least Cost Plan
Principal Issues: The Strategic Approach to DSM Develop and Implementation, Level of DSM Spending, Appropriate Standards by Which DSM Expenses Should Be Judged Prudent, and Rate Design and Least-Cost Planning Principles.

Formal Case No. 891 The Application of Chesapeake and Potomac Telephone Company to Offer Return Call and Caller ID Within the District of Columbia

Principal Issues: Tying Arrangements Between Sales of Equipment and Services, and Public Policy Issues Associated With the Offering of Caller ID

Formal Case No. 850 Investigation into the Reasonableness of the Authorized Return on Equity, Rate of Return, and Current Charges and Rates for Telecommunications Services Offered by the Chesapeake and Potomac Telephone Company
Principal Issues: Rate Design, Incremental Cost and Embedded Cost Studies

Formal Case No. 814
Phase III Investigation into the Impact of AT&T Divestiture and Decisions of the Federal Communications Commission on the Chesapeake and Potomac Telephone Company's Jurisdictional Rates
Principal Issues: Flexible pricing, incremental cost studies, tests for the existence of competition, criteria for measuring alternative regulatory plans.

Formal Case No. 814 Investigation into the Impact of AT&T Divestiture and Decisions of the Federal Communications Commission on the Chesapeake and Potomac Telephone Company's Jurisdictional Rates
Principal Issues: The Use of Cross Elasticity Studies and Market Surveys to Define Markets for Telecommunications Services

Telephone Tariff
91-3 Investigation of the Chesapeake and Potomac Telephone Company's General Regulations Tariff No. 201, Section 1
Principal Issues: Regulatory safeguards and costs of pre-approval of special assemblies

Before the Indiana Utility Regulatory Commission:

Cause No. 38665 Joint Petition of Century Telephone Enterprises, Inc., Odon Telephone Co., Inc. and Colonial Telephone Company, Inc.
Principal Issue: Approval of the Purchase of Odon by Century

Cause No. 38560 Petition of Northern Indiana Public Service Company

Principal Issues: Economic Development Rates and Long Run Marginal Cost

Cause No. 38426 Petition of GTE-Indiana
Principal Issues: Revenue Adjustment, Cross-Subsidization, Cost Methodology and Demand Repression

Cause No. 38415 Petition of Public Service Company of Indiana
Principal Issue: Financing Authority

Cause No. 38302 Joint Petition of Indiana Gas Company, Inc. and Westport Natural Gas Company, Inc.
Principal Issue: Acquisition Adjustment

Cause No. 38158-S1 Investigation to Determine the Extent of Regulation of Pay Telephone Equipment
Principal Issue: Regulation of IXC-Owned Pay Phones

Cause No. 38158 Investigation to Determine the Extent of Regulation of Pay Telephone Equipment
Principal Issues: Deregulation and Rate Structure

Cause No. 38061 Petition of Midwest Natural Gas Corporation
Principal Issue: Cost of Equity

Cause No. 38059 Petition of Indiana Bell Telephone Company, Inc.
Principal Issues: Local Measured Service and Long Run Marginal Cost

Cause No. 38045 Petition of Northern Indiana Public Service Company
Principal Issues: Demand Forecasting, Financial Viability and Regulatory Policy with Regard to Excess Capacity

Cause No. 38034 Petition of Odon Telephone Company, Inc.
Principal Issues: Acquisition Adjustment, Cost of Equity, Financing Authority, and Service Improvement Program

Cause No. 37938 Petition of Northern Indiana Public Service Company
Principal Issues: Economic Development Rates

Cause No. 37927 Petition of United Telephone of Indiana
Principal Issues: Cost of Equity

Cause No. 37866 Petition of Hoosier Energy Rural Electric Cooperative, Inc., et al.

Principal Issues: Economic Development Rates and Long Run Marginal Cost

Cause No. 37814 Petition of United Telespectrum of Indiana, Inc.
Principal Issue: Certificate of Territorial Authority

Cause No. 37735 Petition of Westport Natural Gas Company, Inc.
Principal Issue: Cost of Equity

Cause No. 37706 Petition of Midwest Natural Gas Corporation
Principal Issue: Cost of Equity

Cause No. 37686 Petition of Indiana Bell Telephone Company, Inc.
Principal Issue: Demand Repression

Cause No. 37414 Petition of Public Service Company of Indiana
Principal Issues: Forecasting Methodology and Capacity Planning

Lectures

"Network Neutrality and Service Quality," and "Telecommunications Pricing," NARUC Advanced Regulatory Studies Program, June 2006.

"Public Utility Pricing," "Retail Pricing in Telecommunications," and "Cost Models in Telecommunications," NARUC Annual Regulatory Studies Program, August 2004.

"Retail Pricing in Telecommunications," NARUC Annual Regulatory Studies Program, August 2003.

"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 2000.

"Cost Modeling in Telecommunications," NARUC Annual Regulatory Studies Program, August 1999.

"Cost Modeling and Universal Service," NARUC Annual Regulatory Studies Program, August 1998.

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

"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.

Industry Committees

Federal Staff of the Federal-State Joint Board of CC Docket No. 80-286 (June 1999 to April 2001).

Federal Staff of the Federal-State Joint Board of CC Docket No.96-45 (May 1996 to April 2001).

National Association of Regulatory Utility Commissioners (NARUC) Staff Subcommittee on Communications (1994-1996).

State Staff of the Federal-State Joint Board of CC Docket No.80-286 (1991-1996).

Professional Associations

Member: American Economic Association
Association for Evolutionary Economics

EXHIBIT RL-2

Exhibit RL-2

AT&T IntraLATA Per Minute Rates							
ILEC	One Rate Plan	One Rate Plus	Overlay Plan	One Rate 7 cent Plan	One Rate Off-Peak II, III, V	One Rate 5¢	Overlay Plan II
Verizon PA	$0.12	$0.10	$0.07	$0.07	$0.07	$0.07	$0.07
Verizon North	$0.13	$0.12	$0.12	$0.12	$0.12	$0.12	$0.09
United/Embarq	$0.13	$0.12	$0.12	$0.12	$0.12	$0.12	$0.09
All other carries	$0.13	$0.13	$0.12	$0.13	$0.13	$0.13	$0.09
Source: AT&T Communications of Pennsylvania, LLC, Pennsylvania Tariff, Pa P.U.C. - No. 23							