

ORIGINAL

**DIRECT TESTIMONY OF
TERRY L. MURRAY,
RICHARD CABE AND
PATRICIA D. KRAVTIN
ON BEHALF OF
RHYTHMS LINKS INC.**

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1 Commission ("FCC"). My testimony in these proceedings has concerned such
2 issues as costing and pricing for retail services, unbundled network elements and
3 interconnection; universal service policy; competition policy (including policy
4 toward proposed mergers); and incentive regulation. My curriculum vitae,
5 attached as Exhibit ___ (TLM-1) to this testimony, provides more detail
6 concerning my qualifications and experience.

7 **Q. Dr. Cabe, please state your name, title and business address.**

8 A. My name is Richard Cabe. I am President of Richard Cabe, Inc. My business
9 address is 221 I Street, Salida, Colorado 81201.

10 **Q. Dr. Cabe, please briefly describe your professional background.**

11 A. I am an economist in private practice, specializing in economic analysis of
12 regulatory matters in the telecommunications industry. I have presented
13 testimony in matters concerning competition in the telecommunications industry
14 to the public utility commissions of Alabama, Arizona, Colorado, Florida,
15 Georgia, Iowa, Kentucky, Louisiana, Mississippi, New Mexico, North Carolina,
16 Oregon, South Carolina, Tennessee, Texas, Utah and Washington. I have also
17 assisted in preparation of comments filed before the FCC. Until May of 1999, I
18 was employed as Associate Professor of Economics and International Business at
19 New Mexico State University. In that position, I taught graduate and
20 undergraduate economics courses and arranged the telecommunications
21 curriculum for conferences sponsored by the Center for Public Utilities. Over the
22 last several years, I offered graduate courses in Industrial Organization,

1 Microeconomic Theory, Antitrust and Monopoly Power, Game Theory, Public
2 Utilities Regulation, and Managerial Economics for MBA students. My
3 experience with telecommunications regulation began when I was employed by
4 the Washington Utilities and Transportation Commission. During my
5 employment at the Washington Commission, I served as a staff member to the
6 Federal - State Joint Board in CC Docket No. 86-297. When I left the
7 Washington Commission staff to complete my doctoral degree, my title was
8 Telecommunications Regulatory Flexibility Manager. Additional information
9 concerning my qualifications is provided as Exhibit ___ (RC-1).

10 **Q. Ms. Kravtin, please state your name, title and business address.**

11 A. My name is Patricia D. Kravtin. I am a Senior Vice President at Economics and
12 Technology, Inc. ("ETI"). My business address is One Washington Mall, Boston,
13 Massachusetts 02108. ETI is a research and consulting firm specializing in
14 telecommunications economics, regulation, management and public policy.

15 **Q. Ms. Kravtin, please briefly describe your qualifications and experience as
16 they relate to this proceeding.**

17 A. I have been actively involved as a consulting economist in the field of public
18 utility economics, policy and regulation for almost twenty years. In more recent
19 years, I have very actively participated in proceedings before the FCC and state
20 public utility commissions around the country relating to the implementation of
21 local competition. I frequently testify as an expert witness before state regulatory
22 commissions, having submitted testimony before twenty state commissions on

1 issues such as raised in this proceeding as well as on a myriad of others related to
2 telecommunications regulatory and economic policy. I have authored studies
3 submitted before state and federal regulatory bodies on a wide range of
4 telecommunications and video/broadband-related matters. In addition, I have
5 testified as an expert witness in antitrust litigation before United States District
6 Court, and also before a number of state legislative committees. I have served as
7 a technical economic advisor to state public service commissions. I have studied
8 economics in the Ph.D. program at the Massachusetts Institute of Technology
9 (M.I.T.) under a National Science Foundation Fellowship, and hold a B.A. with
10 Distinction in Economics from the George Washington University. At M.I.T., my
11 fields of study included Government Regulation of Industry, Industrial
12 Organization, and Urban and Regional Economics. My overall experience and
13 education are summarized in more detail in my Statement of Qualifications,
14 which is provided as Exhibit ___ (PDK-1) to this testimony.

15 **Q. Ms. Murray, Dr. Cabe and Ms. Kravtin, what is the purpose of your**
16 **testimony?**

17 **A. Rhythms Links Inc. ("Rhythms") has asked us to describe the array of unbundled**
18 **network elements and interconnection arrangements that the Commission should**
19 **require BellSouth Telecommunications, Inc. ("BS-FL") and GTE Florida, Inc.**
20 **("GTE-FL") to make available to Rhythms so that it can provide advanced**
21 **services based on Digital Subscriber Line ("DSL") technology over the same**
22 **telephone line that BS-FL or GTE-FL uses to provide voice services to the end-**
23 **user. This configuration is known as "line sharing." Rhythms has also asked us**

1 to present its proposed prices and to describe the underlying cost support for the
2 line-sharing-related unbundled network elements and interconnection options
3 contained in its Petition for Arbitration.

4 **I. INTRODUCTION AND SUMMARY**

5 **Q. What criteria must the prices for unbundled network elements and**
6 **interconnection pertaining to line sharing meet?**

7 A. Prices for line-sharing elements and related interconnection arrangements must
8 meet the criteria established in the Telecommunications Act of 1996 ("Act") that
9 prices for unbundled network elements be cost-based and nondiscriminatory.
10 Pub. L. 104-104, Title VII, § 252(d)(1), Feb. 8, 1996, 110 Stat. 153. The FCC has
11 previously determined, and we agree, that prices based on the Total Element Long
12 Run Incremental Cost ("TELRIC") methodology meet these criteria. *First Report*
13 *and Order*, In the Matter of Implementation of the Local Competition Provisions
14 in the Telecommunications Act of 1996 (CC Docket No. 96-98), adopted August
15 1, 1996, ("*First Report and Order*") at ¶ 672, codified in 47 C.F.R. § 51.505. The
16 FCC's *Third Report and Order* has provided additional guidance concerning the
17 application of TELRIC principles to derive prices for line sharing in an arbitration
18 such as this one. *Third Report and Order in CC Docket No. 98-147 and Fourth*
19 *Report and Order in CC Docket No. 96-98*, FCC 99-355, adopted November 18,
20 1999, released December 9, 1999 ("*Third Report and Order*").

1 **Q. Are there other public policy goals or concerns that are important to**
2 **consider in setting prices for line-sharing elements and related**
3 **interconnection arrangements?**

4 A. Yes. The Commission should evaluate the parties' alternative proposals for line
5 sharing in light of the public policy imperative to promote advanced services, as
6 stated in Section 706 of the Act. This arbitration offers the Commission an
7 opportunity to secure an important benefit of the Act for all Florida consumers —
8 the delivery of innovative services. Adoption of the Act would have made little
9 sense if Congress did not envision that a competitive local exchange market
10 would deliver innovative, improved services, at better prices, to Florida
11 consumers than did the previous single-provider market. Yet much of the activity
12 to date has focused on the steps necessary to enable competition for the types of
13 services that BS-FL and GTE-FL already offer ubiquitously to their retail
14 customers. In contrast, this arbitration also focuses on the actions needed to
15 facilitate competition for advanced telecommunications services that many
16 Florida consumers cannot yet obtain. The Commission's decisions in this
17 arbitration proceeding will help to determine the degree to which competitive
18 market forces will drive the spread of such services to all Florida consumers as
19 quickly as possible.

20 DSL is an emerging technology with great promise for meeting the need
21 for advanced telecommunications services. To carry out the policy imperative to
22 promote the spread of advanced services, this Commission must ensure that the
23 prices, terms and conditions under which BS-FL and GTE-FL offer the unbundled

1 network elements and interconnection arrangements necessary to effectuate line
2 sharing do not discourage competitive entry into this market.

3 The potential for new entrants to accelerate the delivery of competitive
4 benefits to consumers of DSL-based services depends on the new entrants' ability
5 to obtain access to customers on terms and conditions that place them on an even
6 competitive footing with BS-FL and GTE-FL. Until now, BS-FL and GTE-FL
7 have reserved for themselves the opportunity to provide DSL-based services over
8 the same lines that they use to provide voice services. By denying new entrants
9 the opportunity to line-share, BS-FL and GTE-FL have acted on their incentive to
10 leverage their control of access to end users into dominance of emerging markets
11 for new telecommunications services such as DSL-based services. The manner in
12 which the Commission resolves issues related to the terms, conditions and prices
13 for line sharing will substantially affect the ability of new entrants to compete
14 with BS-FL and GTE-FL, especially in providing residential and small business
15 customers with DSL-based services.

- 16 **Q. How can the Commission best ensure that the costs and prices adopted in**
17 **this proceeding will facilitate the competitive offering of DSL-based services**
18 **to the benefit of all Florida consumers?**
- 19 **A. The Commission can best facilitate emerging competition for DSL-based services**
20 **in Florida by taking two actions:**
- 21 ● First, the Commission should require BS-FL and GTE-FL to offer
22 competitors a full menu of unbundled network elements and
-

1 interconnection arrangements that reflects all technically feasible
2 alternatives for unbundling network functionalities related to line sharing.
3 • Second, the Commission should adopt recurring and nonrecurring charges
4 for each of these line-sharing-related elements and interconnection
5 arrangements that reflect a rigorous application of TELRIC principles.

6 Rhythms has requested, and we recommend, that the Commission accomplish
7 these goals in a phased approach. We suggest that the Commission phase the
8 issues in the following manner:

- 9 • In Phase I, the Commission should establish a menu of options for
10 unbundled network elements and interconnection arrangements to be used
11 in provisioning line sharing over all-copper loops and determine cost-
12 based prices for each of these options. The Commission should also
13 establish that Rhythms may obtain “conditioned” loops and should have
14 access to information concerning the characteristics or “makeup” of the
15 loops that BS-FL and GTE-FL have available, but should defer action on
16 costs and prices for both “conditioning” and access to loop makeup
17 information.
- 18 • In Phase II, the Commission should establish a menu of options for
19 unbundled network elements and interconnection arrangements to be used
20 in provisioning line sharing over fiber-fed loops and determine cost-based
21 prices for each of these options. The Commission should also determine
22 what, if any, price BS-FL and GTE-FL may charge for “conditioning,”
23 access to loop makeup information and upgrades to their Operations

1 Support Systems ("OSS") to accommodate line sharing by unaffiliated
2 competitors.

3 The remainder of our testimony will describe in more detail the minimum menu
4 of options that the Commission should require BS-FL and GTE-FL to unbundle at
5 this time and will explain how Rhythms has developed TELRIC-based recurring
6 and nonrecurring charges for those unbundled network elements and
7 interconnection arrangements.

8 **II. THE COMMISSION SHOULD ADOPT A FULL MENU OF OPTIONS**
9 **FOR LINE SHARING.**

10 **Q. What line-sharing options should the Commission require BS-FL and GTE-**
11 **FL to unbundle and offer to Rhythms?**

12 **A.** The Commission should require BS-FL and GTE-FL to unbundle and offer to
13 Rhythms all line-sharing options that are currently technically feasible in BS-FL's
14 and GTE-FL's existing networks and to provide any additional options as soon as
15 network changes make those options technically feasible. We note that the
16 emphasis on technical feasibility in BS-FL's and GTE-FL's *existing* networks
17 relates only to the unbundling requirement and *not* to the pricing of the unbundled
18 facility. Prices for unbundled network elements and interconnection must be
19 based on forward-looking costs and a forward-looking network architecture, not
20 BS-FL's and GTE-FL's existing network designs.

21 **Q. What are the technically feasible options for competitors to provide DSL-**
22 **based services in a line-sharing mode in BS-FL's and GTE-FL's existing**
23 **networks?**

1 A. The technically feasible options for line sharing differ depending on whether BS-
2 FL's or GTE-FL's existing loop facility is all-copper from the customer premises
3 to the central office ("home-run copper") or copper from the customer premises to
4 a digital loop carrier ("DLC") facility and then fiber from the DLC to the central
5 office ("fiber-fed loop"). In the latter case, the technically feasible options differ
6 depending on whether BS-FL's and GTE-FL's DLCs are DSL-compatible.
7 Forward-looking DLC equipment incorporates the DSLAM/splitter function into
8 line cards that are placed in the DLC. Alternatively, carriers can physically or
9 virtually collocate their own DSLAM functionality at BS-FL's or GTE-FL's
10 Remote Terminal ("RT"). The accompanying testimony of Joseph P. Riolo and
11 John C. Donovan provides more detail concerning the manner in which DSL-
12 based services can be provided over home-run copper and fiber-fed loops.

13 In Phase I, we understand that Rhythms is only seeking to arbitrate prices
14 of rate elements for line-sharing over home-run copper. By establishing these
15 prices on an expedited schedule, the Commission will allow competitors such as
16 Rhythms to initiate line sharing, on at least all-copper loops, by the June 6th
17 deadline that the FCC has established for the implementation of line sharing.

18 To preserve competitive parity, however, the Commission must establish
19 an ongoing process that will ensure that competitors such as Rhythms will have
20 access to new line-sharing options at the same time that those options become
21 available to BS-FL and GTE-FL. These new options would include line sharing
22 over fiber-fed loops and line sharing for services other than those based on
23 Asymmetric Digital Subscriber Line ("ADSL") technology, including Rate-

1 Adaptive DSL. Incumbent local exchange carriers are rapidly deploying such
2 new technology. For example, GTE-FL's merger partner, Bell Atlantic
3 Corporation ("Bell Atlantic"), is actively engaged in upgrading the DLC
4 equipment in its local exchange affiliates' networks throughout the region to
5 facilitate the provisioning of DSL-based services over fiber-fed loops.
6 Pennsylvania Public Utility Commission, Docket Numbers R-00994697 and R-
7 00994697C0001, Bell Atlantic – Pennsylvania, Inc. Response to Set I,
8 Interrogatory No. 26 of Rhythms Links Inc., dated November 24, 1999. The
9 Commission should therefore be prepared to address pricing issues relating to
10 fiber-fed loops in Phase II.

11 **III. THE COMMISSION SHOULD ADOPT RHYTHMS' PROPOSED PRICES**
12 **FOR UNBUNDLED NETWORK ELEMENTS AND INTERCONNECTION**
13 **ARRANGEMENTS RELATED TO LINE SHARING.**

14 **Q. What loop functionality must BS-FL and GTE-FL make available to**
15 **Rhythms to enable it to provide DSL-based services over the same loop that**
16 **BS-FL or GTE-FL uses to provide voice services?**

17 **A.** Pursuant to the FCC's *Third Report and Order* in CC Docket 98-147, incumbent
18 local exchange carriers must make the high-bandwidth portion of the local loop
19 available to competitors such as Rhythms so that they may offer DSL-based
20 services in a line-sharing mode. *Third Report and Order* at ¶ 26.

21 **Q. Is it economically meaningful to identify a unique forward-looking economic**
22 **cost associated with the high-bandwidth portion of the loop as opposed to the**
23 **remaining bandwidth of the same loop?**

1 A. No. BS-FL and GTE-FL incur the same forward-looking economic cost for
2 feeder, distribution and loop termination facilities whether they provide an entire
3 loop, just the high-bandwidth portion of the loop or just the remaining bandwidth
4 of the same loop. In economic parlance, the vast majority of the costs of
5 providing various portions of the loop bandwidth are joint or “shared” costs.

6 In the home-run copper scenario, BS-FL and GTE-FL may also incur
7 some incremental cost for a stand-alone splitter. In a network that is truly
8 designed for the provision of both voice and data, and favors neither, the splitter
9 function is also a joint cost of voice and DSL-based services. Nonetheless, as a
10 compromise proposal appropriate in the early days of DSL technology, the prices
11 proposed in Rhythms’ Petition for Arbitration include a price for a BS-FL and
12 GTE-FL-owned splitter.

13 There is no one economically correct way to identify a specific portion of
14 the joint cost of the loop with a specific portion of that loop’s bandwidth. Thus,
15 there is no “correct” allocation of BS-FL’s and GTE-FL’s joint loop costs
16 between the high-bandwidth and voice-grade portions of the loop.

17 **Q. Given that the vast majority of costs associated with line sharing are joint**
18 **with the costs of providing the voice portion of the loop, how should the**
19 **Commission set prices for the high-bandwidth portion of the local loop?**

20 A. The Commission should focus on the nondiscrimination requirement of the Act.
21 That is, the Commission should set the price for use of the high-bandwidth
22 portion of the local loop so that an unaffiliated competitor that is equally efficient
23 as BS-FL and GTE-FL in supplying the competitively provided portions of DSL-

1 based services, such as the customer premises equipment and DSLAM, has the
2 same opportunity to earn an overall corporate profit from the offering of DSL-
3 based services as do BS-FL and GTE-FL. In proposing this standard, we presume
4 that BS-FL and GTE-FL have no unfair competitive advantage as a result of
5 discriminatory access to the functionality of unbundled network elements.

6 **A. The Commission Should Establish Non-Discriminatory Recurring**
7 **and Non-Recurring Charges for Unbundled Network Elements and**
8 **Interconnection Arrangements Related to Line Sharing.**

9 **Q. How can the Commission establish non-discriminatory recurring charges for**
10 **the high-bandwidth portion of the local loop?**

11 **A. The FCC's *Third Report and Order* provides a simple prescription for**
12 **establishing a price for line sharing:**

13 We conclude that, in arbitrations and in setting interim
14 prices, states may require that incumbent LECs charge no more to
15 competitive LECs for access to shared local loops than the amount
16 of loop costs the incumbent LEC allocated to ADSL services when
17 it established its interstate retail rates for those services. This is a
18 straightforward and practical approach for establishing rates
19 consistent with the general pro-competitive purpose underlying the
20 TELRIC principles. We find that establishing the TELRIC of the
21 shared line in this manner does not violate the prohibition of
22 section 51.505(d)(1) of our rules against considering embedded

1 cost in the calculation of the forward looking economic cost of an
2 unbundled network element.

3 *Third Report and Order* at ¶ 139, footnotes omitted.

4 In their federal tariff filings for retail ADSL services, incumbent local
5 exchange carriers generally did not allocate any loop costs to ADSL service over
6 home-run copper loops. See, for example, GTE Systems Telephone Companies,
7 Tariff FCC No. 1, GSTC Transmittal No. 260 (Aug. 28, 1998). The arguments of
8 GTE's merger partner, Bell Atlantic, are typical of the rationales that incumbents
9 offered for such an allocation. In comments before the FCC, Bell Atlantic argued
10 against imputation of any loop costs when a loop is used to supply both basic
11 exchange service and DSL-based services, stating that:

12 ... the fact is that the cost of unbundled loops and similar network
13 elements is not an incremental cost of DSL, because it does not
14 reflect new costs incurred to offer that service. Therefore, there
15 are no loop costs to be imputed to DSL. [citing Alfred E. Kahn,
16 *Letting Go: Deregulating the Process of Deregulation*, at 78] ("if
17 indeed the costs of the loop do not vary depending upon the
18 number of local or toll calls placed on it, then incorporating some
19 portion of those costs in the prices for those uses of it ...
20 inefficiently discourages that usage.")

21 ... the facilities in question are multi-use facilities, capable
22 of supporting a variety of services. As such, *the cost of the*
23 *facilities are already recovered in state-regulated rates for all of*

1 *the other services that historically have been provided over them,*
2 *including local dialtone voice services. Any requirement to impute*
3 *loop costs to DSL would artificially inflate the cost of that service,*
4 *place Bell Atlantic's DSL service at a competitive disadvantage,*
5 *and deprive consumers of truly competitive pricing for these*
6 *services....*

7 Bell Atlantic Telephone Companies, Tariff FCC No 1, Transmittal No. 1076, CC
8 Docket No. 98-168, Bell Atlantic's Direct Case, at 13, emphasis supplied. Other
9 incumbent local exchange carriers similarly asserted that use of the high-
10 bandwidth portion of the local loop to provide DSL-based services causes no
11 incremental loop cost and, for this reason, should result in no allocation or
12 assignment of any loop costs to their DSL-based service. For example, Pacific
13 Bell stated in its pleadings that:

14 Several petitioners contend that Pacific must assign outside
15 plant (local loop) costs to its ADSL service. But Commission
16 [FCC] rules impose no such requirement. FCC Rule 61.38
17 requires LECs to identify the direct cost to provide the proposed
18 new service. Pacific proposes to transmit ADSL over loops under
19 tariffs already approved by the Commission and state regulators.
20 Loop costs therefore contribute nothing to the direct cost of ADSL
21 service. Pacific has offered a low-speed data-over-voice (DOV)
22 service as part of its Generic Digital Tariff (GDT) product line in

1 the interstate tariff since 1992. Cost allocation issues for DOV
2 services were settled long ago.

3 Reply of Pacific Bell, In the Matter of Pacific Bell, Pacific Tariff FCC No. 128,
4 Transmittal No. 1986, Pacific's ADSL Service, June 26, 1998, at 15 (footnotes
5 omitted).

6 Thus, unaffiliated competitors should be able to obtain the high-bandwidth
7 portion of the loop without any charge for home-run copper loops.

8 **Q. Did the FCC give explicit recognition to the incumbents' inclusion of zero**
9 **loop costs in setting prices for their own DSL-based service where the DSL-**
10 **based service is offered in conjunction with the same customer's basic**
11 **exchange service?**

12 **A. Yes. In its *Third Report and Order*, the FCC observes that "[t]he record indicates**
13 **that incumbent LECs generally allocate virtually all loop costs to their voice**
14 **services, then deploy a voice-compatible xDSL service such as ADSL on the**
15 **same loop, allocating little or no incremental loop costs to the new resulting**
16 **service." *Third Report and Order* at ¶ 41, footnote omitted.**

17 Competitive parity and the general requirement that incumbents not
18 discriminate against competitors in pricing access to their network resources are
19 by themselves sufficient bases upon which to *require* that BS-FL and GTE-FL
20 must similarly assign zero loop costs in pricing the high-bandwidth portion of the
21 local loop.

1 **Q. Are there any additional public policy rationales for a zero-dollar line-**
2 **sharing recurring charge?**

3 **A. Yes. To qualify for line-shared ADSL service, the customer must have in place a**
4 **conventional dial tone access line for which he or she pays both the Florida-**
5 **tariffed monthly exchange access line rate as well as the FCC-tariffed Subscriber**
6 **Line Charge (“SLC”), along with prices for other related vertical services linked**
7 **to the subscriber’s line. Thus, unless BS-FL and GTE-FL adopt an offsetting**
8 **decrease in the monthly recurring charge for voice-grade services, any line-**
9 **sharing charge that exceeds any incremental loop costs identified in the cost**
10 **studies that formed the basis for BS-FL’s and GTE-FL’s price floors for their**
11 **retail ADSL services will provide windfall profits to BS-FL and GTE-FL with no**
12 **corresponding benefit to their voice-service customers. Ultimately, such a line-**
13 **sharing charge could increase the price that BS-FL’s and GTE-FL’s basic**
14 **exchange service customers pay for any DSL-based service provided over the**
15 **same line, whether they buy that service from BS-FL, GTE-FL or an unaffiliated**
16 **competitor.**

17 **Such a result would be contrary to Congress’ intent, expressed in § 706 of**
18 **the Act, to “encourage the deployment on a reasonable and timely basis of**
19 **advanced telecommunications capability to all Americans (including, in**
20 **particular, elementary and secondary schools and classrooms) by utilizing, in a**
21 **manner consistent with the public interest, convenience, and necessity, price cap**
22 **regulation, regulatory forbearance, measures that promote competition in the local**
23 **telecommunications markets, or other regulating methods that remove barriers to**

1 infrastructure investment.” As GTE has stated, “[s]ince ADSL employs the
2 existing loop for new applications, the costs of the loop are already recovered
3 through existing rates. ... Allocating a greater portion of loop costs to the ADSL
4 service would only force subscribers to pay a higher, noncompetitive rate for their
5 ADSL service, with little possibility of any corresponding reductions in local
6 rates.” GTE’s Reply, In the Matter of GTE Telephone Operating Companies
7 Tariff FCC No. 1, Transmittal No. 1148, May 28, 1998, at 18 (footnote omitted).

8 Both the need to prevent windfall profits and the public policy imperative
9 to promote the deployment of advanced services such as DSL-based services
10 support Rhythms’ proposal to adopt no recurring line-sharing charge for access to
11 the high-bandwidth portion of the local loop (other than a charge to recover
12 incremental electronics equipment costs in a fiber-fed loop scenario).

13 **Q. How do you recommend that the Commission set prices unbundled network**
14 **elements and interconnection arrangements related to line sharing over**
15 **home-run copper other than the high-bandwidth portion of the local loop?**

16 **A. We recommend that the Commission adopt the following prices:**
17

Rate Element	Rate		
	Monthly Recurring	Non-Recurring	
		1 st /Add'l Install	1 st /Add'l Disconnect
ILEC-Owned Splitter	\$0.90	N/A	N/A
Place Jumper	N/A	\$5.78 / \$3.21	\$4.49 / \$1.93
Remove Jumper	N/A	\$1.93 / N/A	N/A
Tie Cables	Per previous Commission-adopted prices		

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These prices include a 5.1% Florida-specific common cost markup (as adopted for BS-FL; this figure is used as a proxy for GTE-FL's overhead costs). (These prices are slightly lower than the prices shown in Rhythms' arbitration petition for BS-FL because of a transcription error in the pricing table for that petition.)

7

Q. How did you develop the cost basis for the prices shown above?

8

A. The monthly recurring charge for a BS-FL or GTE-FL-owned and -installed splitters is stated per splitter port, based on the capital and operating costs for a 96-line splitter. The splitter investment itself is a publicly available figure from a Bell Atlantic – New York cost study and should be representative of the prices that incumbent local exchange carriers pay for such equipment purchased in quantity. The installation and operation expenses reflect subject matter expert opinion from engineers familiar with this type of equipment. To arrive at a proposed price, we considered a range of reasonable options for the depreciation life of a splitter. The price that we propose is sufficient to recover the splitter

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1 costs based on a depreciation life as low as five years, with an allowance for the
2 installation and operation expenses endorsed by our subject matter engineering
3 experts.

4 The nonrecurring charges for placing and removing jumpers are stated on
5 a per jumper basis. The underlying costs reflect subject matter expert opinion as
6 to the work times required.

7 We are attaching the workpapers that show the cost support for our
8 proposed prices for BS-FL and GTE-FL as Exhibits ___ (MCK-1) and ___
9 (MCK-2) to this testimony. The accompanying testimony of Mr. Riolo and Mr.
10 Donovan provides support for the engineering assumptions used in our analysis.

11 Although we have used information that we believe to be specific to BS-
12 FL and GTE-FL wherever possible, we do not have access to certain BS-FL and
13 GTE-FL data, such as the company-specific labor rates for the relevant work
14 groups, and have used the best available public information for such inputs. If
15 BS-FL and GTE-FL provide the pertinent company-specific data as part of their
16 cost workpapers in this arbitration, we will prepare a comparison exhibit showing
17 the effect on our recommended prices of substituting those input values.

18 **B. The Commission Should Require BS-FL and GTE-FL to Provide**
19 **Rhythms with Loop "Conditioning" in Conjunction with Line**
20 **Sharing, But Defer Action on Pricing of "Conditioned" Loops Until**
21 **Phase II of This Arbitration.**

22 **Q. What is loop "conditioning"?**

23 **A. In this context, "conditioning" refers to modifications to embedded loop plant**
24 **facilities to remove equipment or plant arrangements that would impede the**

1 transmission of DSL-based services. The notion that BS-FL and GTE-FL must
2 “condition” lines for DSL-based services is potentially misleading. The term
3 “conditioning” has traditionally been used in telecommunications to refer to
4 situations in which equipment must be *added* to a circuit to enable that circuit to
5 perform to tighter engineering parameters. One example of this is what is known
6 as an “assured” PBX trunk. In contrast, to make certain loops in their embedded
7 plant DSL-capable, BS-FL and GTE-FL must *remove* unnecessary equipment
8 *from the circuit*, such as load coils or excessive bridged taps. In other words, BS-
9 FL and GTE-FL must *decondition* these loops by eliminating equipment that may
10 have been required in 20- to 30-year-old plant designs to support analog/voice
11 services.

12 **Q. Does Rhythms propose to litigate pricing for loop “conditioning” at this**
13 **time?**

14 A. No. It is our understanding that Rhythms proposes to defer litigation of the
15 prices, if any, for loop “conditioning” until Phase II of this arbitration.

16 **Q. Should the Commission take any action at this time with respect to loop**
17 **“conditioning”?**

18 A. Yes. The Commission should require BS-FL and GTE-FL to provide line sharing
19 to Rhythms using “conditioned” loops. If BS-FL or GTE-FL levies any charge
20 for “conditioning” those loops, the Commission should require that the charge be
21 subject to refund, pending the outcome of Phase II of this arbitration.

1 There is a strong argument for requiring BS-FL and GTE-FL to provide
2 “conditioned” loops for no extra charge. As we explained in our previous answer,
3 loop “conditioning” generally involves removing devices that were put in place
4 pursuant to embedded plant design standards that are long outdated. The network
5 engineering guidelines in place for the past two decades call for a loop
6 architecture that does not deploy load coils, excessive bridged taps or repeaters
7 that inhibit the provision of advanced services such as ISDN and DSL-based
8 services. The accompanying testimony of Joseph P. Riolo and John C. Donovan
9 explains in more detail why the existence of interferors such as load coils and
10 excessive bridged tap is inconsistent with modern engineering design practices.

11 Furthermore, BS-FL and GTE-FL must perform similar “conditioning”
12 activities to make their embedded loop plant capable of provisioning ISDN
13 service, yet to the best of our knowledge neither BS-FL and GTE-FL imposes
14 “conditioning” charges for that service. Thus, as we will show in more detail in
15 Phase II, “conditioning” charges are both backward-looking and discriminatory.
16 The Commission should make any interim “conditioning” charges subject to
17 refund so that Rhythms does not pay prices that exceed TELRIC-based costs for
18 “conditioned” loops.

19 **C. The Commission Should Require BS-FL and GTE-FL to Provide**
20 **Rhythms with Access to Loop Makeup Information, But Defer a**
21 **Decision on the Pricing of This Function Until Phase II.**

22 **Q. What is loop qualification?**

1 A. Loop qualification is the process of identifying the characteristics of a given loop
2 (such as loop length and the presence and location of potential DSL-inhibiting
3 network components such as load coils, excessive bridged taps and repeaters) and
4 determining the suitability of that loop for provisioning DSL-based services. The
5 characteristics of a given loop determine whether the loop is usable at all for
6 providing any type of DSL-based service, the modifications (if any) needed to
7 “condition” the loop to provide DSL-based service and the type/speed of DSL-
8 based service that may be offered over that loop, with or without “conditioning.”
9 These determinations are specific to the DSL technology and equipment that a
10 particular carrier deploys; thus, Rhythms may be able to offer its DSL-based
11 services over a loop that would not meet BS-FL’s or GTE-FL’s technical
12 specifications for DSL-based services and *vice versa*.

13 The carrier-specific nature of loop qualification has significant
14 implications for the definition of the loop qualification activity for which
15 competitors will pay BS-FL and GTE-FL. BS-FL and GTE-FL can only
16 meaningfully perform the first step of the loop qualification activity — providing
17 access to the relevant information on loop characteristics. Rhythms’ own
18 personnel must then use this loop characteristic information to determine the
19 suitability of a given loop for provisioning Rhythms’ variants of DSL-based
20 services.

21 **Q. Has the FCC agreed that incumbents should provide direct access to the data**
22 **that competitors need to do their own loop qualification?**

1 A. Yes. In its *UNE Remand Order*, the FCC states that incumbents must provide
2 requesting carriers access to all available information relating to loop qualification
3 for DSL-based services. The pertinent information includes, but is not limited to:
4 “fiber optics or copper; the existence, location and type of any electronic or other
5 equipment on the loop, including but not limited to, digital loop carrier or other
6 remote concentration devices, feeder/distribution interfaces, bridge taps, load
7 coils, pair-gain devices, disturbers in the same or adjacent binder groups; the loop
8 length, including the length and location of each type of transmission media; the
9 wire gauge(s) of the loop; and the electrical parameters of the loop, which may
10 determine the suitability of the loop for various technologies.” 47 C.F.R. § 51.5;
11 *Third Report and Order and Fourth Further Notice of Proposed Rulemaking* in
12 CC Docket 96-98 (“*UNE Remand Order*”) at ¶¶ 427-8.

13 The clear purpose of this FCC requirement is to compel incumbents to
14 produce the information that will allow competitors to make their own
15 determinations about the suitability of loops for the technologies that the
16 competitors intend to deploy. This purpose is implicit in the FCC’s finding that
17 “under our existing rules, the relevant inquiry is not whether the retail arm of the
18 incumbent has access to the underlying loop qualification information, but rather
19 whether such information exists anywhere within the incumbent’s back office and
20 can be accessed by any of the incumbent LEC’s personnel.” *UNE Remand Order*
21 at ¶ 430. If the FCC intended for BS-FL, GTE-FL or other incumbents to make
22 the determination on behalf of entrants such as Rhythms, there would be no

1 reason to require the incumbents to provide competitors with the information that
2 “back office” personnel use to perform a loop qualification analysis.

3 **Q. How should access to loop makeup information be provided in a forward-**
4 **looking environment?**

5 A. In the long run, BS-FL and GTE-FL should make loop makeup information
6 available directly to new entrants in an electronic format. Indeed, the Texas
7 Public Utility Commission has ordered Southwestern Bell Telephone Company –
8 Texas (“SWBT-TX”) to develop and deploy enhancements that will allow new
9 entrants to have real-time electronic access to loop qualification information.
10 Public Utility Commission of Texas, Arbitration Award, Docket No. 20226 and
11 20272, November 30, 1999, at 61-63. BS-FL and GTE-FL should be able to
12 deploy equally efficient arrangements in Florida, and the price for access to loop
13 makeup information should be based on the forward-looking costs of such
14 efficient arrangements, consistent with the TELRIC methodology.

15 **Q. Does Rhythms propose to litigate the price of access to loop makeup**
16 **information in Phase I?**

17 A. No. It is our understanding that Rhythms proposes to defer this issue to Phase II
18 of this arbitration.

19 **Q. Should the Commission take any action at this time on pricing for access to**
20 **loop makeup information?**

21 A. Yes. The Commission should require that any price BS-FL or GTE-FL charges
22 Rhythms for access to loop makeup information or loop qualification be subject to

1 refund, pending the determination of pricing in Phase II. A "subject to refund"
2 provision is a necessary protection for Rhythms because, as other commissions
3 have already found, the forward-looking price for access to loop makeup
4 information should be at or near \$0. For example, the Texas Public Utility
5 Commission has found that "SWBT should be fairly compensated for the real
6 time access to its OSS functionalities required" and established an interim
7 nonrecurring "dip charge" of \$0.10 per loop for loop makeup information. *Id.* at
8 102-103. The Missouri Public Service Commission also recently ruled that, based
9 on its OSS plans, SWBT's loop qualification price should become \$0 after August
10 2000. In the Matter of the Petition of DIECA Communications, Inc. d/b/a Covad
11 Communications Company for Arbitration of Interconnection Rates, Terms,
12 Conditions and Related Arrangements with Southwestern Bell, Case No. TO-
13 2000-322, Arbitration Order, March 23, 2000, at 19.

14 **D. The Commission Should Defer Consideration of Cost Recovery for**
15 **Modifications to BS-FL's and GTE-FL's OSS to Some Other**
16 **Proceeding.**

17 **Q. The FCC's *Third Report and Order* also indicates that it may be appropriate**
18 **to allow BS-FL and GTE-FL to recover costs for modifications to their OSS**
19 **to accommodate line sharing. How do you propose that the Commission**
20 **address this issue for purposes of this arbitration?**

21 **A. We recommend that the Commission postpone consideration of recovery of any**
22 **OSS-related costs to a subsequent all-party proceeding. Such a deferral is**
23 **consistent with the stipulation accepted by the Commission in Docket No.**

1 990649-TP in which the parties agreed that consideration of costing and pricing
2 for access to OSS would be dealt with in a separate proceeding. To meet the
3 FCC's proposed test for the validity of any recovery claims, BS-FL and GTE-FL
4 would have to provide a detailed evidentiary basis on which interested parties and
5 the Commission could determine the extent to which any OSS upgrades or
6 modifications benefit BS-FL's and GTE-FL's own operations, as opposed to
7 being required solely for the provisioning of line sharing for unaffiliated
8 competitors. *Third Report and Order* at ¶ 106. We do not possess the
9 information necessary to make such a determination, and we understand that BS-
10 FL and GTE-FL have not provided detailed information of this sort during
11 negotiations with Rhythms.

12 **Q. Does that conclude your testimony at this time?**

13 **A.** Yes, it does.

14

15

Exhibit ___ (TLM-1)

CURRICULUM VITAE OF TERRY L. MURRAY

Terry L. Murray

President, Murray & Cratty, LLC

January 1998 - present

Economic consulting and expert witness testimony specializing in regulatory and antitrust matters.

Principal, Murray and Associates

April 1992 - December 1997

Economic consulting and expert witness testimony, primarily in the fields of telecommunications, energy and insurance regulation and antitrust.

Director, Regulatory Economics, Morse, Richard, Weisenmiller & Associates, Inc.

April 1990 - April 1992

Economic consulting and expert witness testimony, primarily in the fields of telecommunications and energy regulation.

California Public Utilities Commission

June 1984 - March 1990

Director, Division of Ratepayer Advocates (DRA)

March 1989 - March 1990

Headed a staff of over 200 analysts who provided expert witness testimony on behalf of California ratepayers in contested proceedings involving telecommunications, electric, gas, water and transportation utilities. Major proceedings included evaluation of proposed merger between Southern California Edison and San Diego Gas and Electric Companies.

Program Manager, Energy Rate Design and Economics Branch, DRA

October 1987 - March 1989

Managed a staff of over 30 analysts who testified on electric and gas rate design and costing issues, sales forecasts and productivity analyses. Testified as lead policy witness in electric utility incentive ratemaking and transportation policy proceedings.

Senior Policy Analyst, Policy and Planning Division

March 1987 - October 1987

Organized *en banc* hearing and drafted notice of investigation for major telecommunications incentive regulation proceeding. Headed Commission task force on open network architecture.

Commissioner's Advisor

July 1985 - March 1987

Lead advisor on independent power industry and cost of capital issues. Analyzed proposed decisions on energy, telecommunications, water and transportation issues and made recommendations for Commission action. Co-authored Commission order establishing conditions for approval of San Diego Gas and Electric Company application to form a holding company.

**Staff Economist, Public Staff Division
June 1984 - July 1985**

Testified on cost of capital and telecommunications bypass issues. Served on telecommunications strategy task force charged with developing recommendations for post-divestiture regulatory policies.

**Instructor, Golden Gate University
1986 - 1987**

Taught courses on telecommunications regulation to students in the Masters in Telecommunications Management program and students in a special program for federal government telecommunications managers.

**Acting Assistant Professor of Economics, Wesleyan University
July 1981 - June 1982**

Taught undergraduate courses in microeconomics, macroeconomics, econometrics, and economics and policy of regulation.

TESTIMONY

California Department of Insurance

- File Nos. PA-94-0012-00 & PA-94-0012-0A, In re 20th Century Insurance Company and 21st Century Casualty Company.
- File Nos. PA-93-0014-00 *et al.*, In the Matter of the Rates and Rating Practices, and Rate Applications of: State Farm Mutual Automobile Insurance Company, State Farm Fire and Casualty Company, State Farm General Insurance Company, Applicants and Respondents, 3/1/94, 3/29/94.
- File Nos. PA-93-0009-00 *et al.*, In the Matter of the Rate Applications of Nationwide Mutual Insurance Company, Nationwide Mutual Fire Insurance Company, Nationwide Property and Casualty Insurance Company, Applicants, 9/11/93.

California Public Utilities Commission

- A.00-01-022, Application of AT&T Communications of California, Inc., et al., for Arbitration of an Interconnection Agreement with Pacific Bell Pursuant to Section 252(b) of the Telecommunications Act of 1996, 1/24/00, 3/5/00.
- A.00-01-012, In the Matter of Covad Communications Company's (U 5752 C) Petition for Arbitration of Interconnection Agreement with Roseville Telephone Company (U 1015 C), 1/7/00.
- A.98-12-005, In the Matter of the Joint Application of GTE Corporation ("GTE") and Bell Atlantic Corporation ("Bell Atlantic") to Transfer Control of GTE's California Utility Subsidiaries to Bell Atlantic Which Will Occur Indirectly as a Result of GTE's Merger with Bell Atlantic, 6/7/99.
- A.99-03-047, In the Matter of the Petition by Pacific Bell (U 1001 C) for Arbitration of an Interconnection Agreement with Metropolitan Fiber Systems/ Worldcom Technologies, Inc. (MFS/Worldcom) Pursuant to Section 252(b) of the Telecommunications Act of 1996, 4/16/99, 5/24/99.
- A.98-05-038, In the Matter of the Application of Pacific Bell for Authority for Pricing Flexibility and to Increase Certain Operator Services, to Reduce the Number of Monthly Directory Assistance Call Allowances, and Adjust Prices for Four Centrex Optional Features, 11/17/98.

- A.98-06-052, In the Matter of the Petition of PDO Communications, Inc. for Arbitration Pursuant to Section 252 of the Federal Telecommunications Act of 1996 to Establish an Interconnection Agreement with Pacific Bell, 8/14/98.
- In the Matter of the Petition of MCImetro Access Transmission Services, Inc. for Arbitration of Interconnection Rates, Terms, and Conditions Pursuant to 47 U.S.C. § 252(b) of the Telecommunications Act of 1996 (re: GTE California, Inc.), 9/96.
- A.96-04-038, In the Matter of the Joint Application of Pacific Telesis Group and SBC Communications, Inc. for SBC to Control Pacific Bell, 9/30/96.
- A.93-03-054, Application to Modify Diablo Canyon Pricing and Adopt a Customer Electric Rate Freeze in Compliance with Decision 95-12-063, 9/9/96.
- R.93-04-003/I.93-04-002, Rulemaking and Investigation on the Commission's Own Motion to Govern Open Access to Bottleneck Services and Establish and Framework for Network Architecture Development of Dominant Carrier Networks, 6/14/96, 7/10/96, 3/18/97, 12/19/97, 2/11/98, 4/8/98, 4/27/98, 5/1/98, 6/5/98, 12/18/98, 1/11/99, 2/8/99, 3/15/00, 3/27/00, 5/2/00.
- I.95-04-044, Order Instituting Investigation on the Commission's Own Motion into Competition for Local Exchange Service, 10/2/95, 10/9/95, 12/95.
- I.94-04-032, Order Instituting Investigation on the Commission's Proposed Policies Governing Restructuring California's Electric Services Industry and Reforming Regulation, 12/8/94.
- Application Nos. 93-05-008 *et al.*, In the Matter of the Application of Sierra Pacific Power Company to Authorize a Return on Equity for Calendar Year 1994 Pursuant to Attrition Rate Adjustment Mechanism, 8/93.
- Application Nos. 92-05-002 and 92-05-004, Application of GTE California Incorporated for Review of the Operations of the Incentive-Based Regulatory Framework Adopted in Decision 89-10-031, 5/93, 7/93.
- Case No. 91-12-028, The City of Long Beach, in its Proprietary Capacity and as Trustee for the State of California, Complainant, vs. Unocal California Pipeline Company, a Unocal Company, Defendant, 5/15/93.
- I.87-11-033 *et al.*, In the Matter of Alternative Regulatory Frameworks for Local Exchange Carriers (Phase III, Implementation and Rate Design), 9/23/91, 12/16/91, 1/17/92.
- General freight deregulation proceeding, 10/88.
- I.86-10-001, Risk, Return and Ratemaking, 3/88.
- Southwest Gas General Rate Case, 8/85.
- Application No. 85-01-034, Pacific Bell Test Year 1986 General Rate Case, 4/22/85.
- CP National South Lake Tahoe Gas General Rate Case, 12/84.

Colorado Public Service Commission

- Docket No. 91A-480EG, In the Matter of the Joint Application of the Parties to Revised Settlement Agreement II in Docket Nos. 91S-091EG and 90F-226E for Commission Consideration of Decoupling Revenues from Sales and Establishment of Regulatory Incentives to Encourage the Implementation of DSM Programs, 11/8/91, 4/30/92, 9/8/92, 9/14/92.

Connecticut Department of Public Utility Control

- In the Matter of the Petition of MCImetro Access Transmission Services, Inc. for Arbitration of Interconnection Rates, Terms, and Conditions Pursuant to 47 U.S.C. §

252(b) of the Telecommunications Act of 1996 (with The Southern New England Telephone Company), 12/96.

- Docket Nos. 95-06-17 *et al.*, Application of The Southern New England Telephone Company for Approval to Offer Unbundled Loops, Ports and Associated Interconnection Arrangements, 9/8/95.

Delaware Public Service Commission

- Docket No. 96-324, Bell Atlantic - Delaware Statement of Terms and Conditions Under Section 252(F) of the Telecommunications Act of 1996, 2/4/97.
- Docket No. 45, In the Matter of the Development of Regulations for the Facilitation of Competitive Entry into the Telecommunications Local Exchange Service Market, 7/3/96.

District of Columbia Public Service Commission

- Formal Case No. 962, In the Matter of the Implementation of the District of Columbia Telecommunications Act of 1996 and Implementation of the Telecommunications Act of 1996, 3/24/97, 5/2/97, 5/9/97.

Federal Communications Commission

- File No. E-98-12, MCI Telecommunications Corp. and MCImetro Access Transmission Services, Inc., Complainants, v. Bell Atlantic Corp., Defendant, 12/19/97, 3/25/98.
- CC Docket No. 94-1, In the Matter of Price Cap Performance Review for Local Exchange Carriers, 6/29/94.
- W-P-C 6913 *et al.*, In re the Matter of the Application of Pacific Bell for Authority Pursuant to Section 214 of the Communications Act of 1934, and Section 63.01 of the Commission's Rules and Regulations to Construct and Maintain Advanced Telecommunications Facilities to Provide Video Dialtone Services to Selected Communities.

Florida Public Service Commission

- Docket No. 990649-TP, In re: investigation into the pricing of unbundled network elements, 8/11/99, 9/10/99, 10/15/99.
- Docket No. 930424-EI, In re: Request for Approval of Proposal for Incentive Return on Demand-Side Management Investments by Florida Power Corporation, 11/22/93.
- Docket No. 93-444-EI, In re: Request for Approval of Proposal for Revenue Decoupling by Florida Power Corporation, 11/22/93.

Hawaii Public Service Commission

- Docket No. 7702, In the Matter of Public Utilities Commission Instituting a Proceeding on Communications, Including an Investigation of the Communications Infrastructure of the State of Hawaii, 7/3/97, 8/29/97.

Illinois Commerce Commission

- Docket No. 98-0396, Investigation into the Compliance of Illinois Bell Telephone Company with the Order in Docket 96-0486/0569 Consolidated Regarding the Filing of Tariffs and the Accompanying Cost Studies for Interconnection, Unbundled Network Elements and Local Transport and Termination and Regarding End to End Bundling Issues, 3/29/00.
- Docket No. 99-0593. Investigation of Construction Charges, 2/17/00, 3/8/00, 3/22/00.

- In the Matter of the Petition of MCImetro Access Transmission Services, Inc. for Arbitration of Interconnection Rates, Terms, and Conditions Pursuant to 47 U.S.C. § 252(b) of the Telecommunications Act of 1996 (Ameritech – Illinois), 12/96.

Kansas Corporation Commission

- Docket No. 00-DCIT-389-ARB, In the Matter of the Petition of DIECA Communications, Inc. d/b/a Covad Communications Company for Arbitration of Interconnection Rates, Terms, Conditions and Related Arrangements with Southwestern Bell Telephone Company, 1/7/00, 1/25/00, 2/21/00.
- Docket No. 190, 192-U, In the Matter of a General Investigation into Competition within the Telecommunications Industry in the State of Kansas, 11/14/94.

Maryland Public Service Commission

- Case No. 8820, In the Matter of the Investigation into Affiliated Activities, Promotional Practices and Codes of Conduct of Regulated Gas and Electric Companies, 10/1/99, 10/26/99, 12/10/99.
- Docket No. 8797, In the Matter of The Potomac Edison Company's Proposed: (a) Stranded Cost Quantification Mechanism; (b) Price Protection Mechanism; (c) and Unbundled Rates, 1/26/99.
- Docket No. 8795, In the Matter of Delmarva Power and Light Company's Proposed Stranded Cost Quantification Mechanism, Price Protection Mechanism, and Unbundled Rates, 12/28/98.
- Docket No. 8794, In the Matter of Baltimore Gas and Electric (BGE)'s Proposed Stranded Cost Quantification Mechanism, Price Protection Mechanism, and Unbundled Rates, 12/22/98, 7/23/99, 8/3/99.
- Docket No. 8786, In the Matter of the Investigation of Non-Recurring Charges for Telecommunications Interconnection Service, 5/27/98, 11/16/98, 12/18/98.
- Docket No. 8731, Phase II, In the Matter of the Petitions for Approval of Agreements and Arbitration of Unresolved Issues Arising Under §252 of the Telecommunications Act of 1996, 3/7/97.
- Case No. 8731, In the Matter of the Petitions for Approval of Agreements and Arbitration of Unresolved Issues Arising under Section 252 of the Telecommunications Act of 1996, 10/96.
- Case No. 8715, In the Matter of the Inquiry into Alternative Forms of Regulating Telephone Companies, 11/95, 4/1/96.

Massachusetts Department of Telecommunications and Energy

- Docket No. DTE 98-57, Investigation by the Department on its own motion as to the propriety of the rates and charges set forth in the following tariffs: M.D.T.E. Nos. 14 and 17, filed with the Department on April 2, 1999, to become effective May 2, 1999, by New England Telephone and Telegraph Company d/b/a Bell Atlantic – Massachusetts, 7/26/99, 11/9/99.

Michigan Public Service Commission

- Case No. U-10755, In the Matter of the Application of Consumers Power Company for Authority to Increase Its Rates for the Sale of Natural Gas and for Other Relief, 6/9/95.
- Case No. U-10685, In the Matter of the Application of Consumers Power Company for Authority to Increase Its Rates for the Sale of Electricity, 3/29/95, 5/5/95.

- Case No. U-10647, In the Matter of the Application of City Signal, Inc., for an Order Establishing and Approving Interconnection Arrangements with Michigan Bell Telephone Company, 8/5/94, 11/7/94, 11/30/94.

Missouri Public Service Commission

- Case No. TO-2000-322, In the Matter of the Petition of DIECA Communications, Inc. d/b/a Covad Communications Company for Arbitration of Interconnection Rates, Terms, Conditions and Related Arrangements with Southwestern Bell Telephone Company, 1/7/00, 1/27/00, 2/10/00.

Nevada Public Service Commission

- Docket No. 96-9035, In re a Petition by the Regulatory Operations Staff to Open an Investigation into the Procedures and Methodologies that Should Be Used to Develop Costs for Bundled or Unbundled Telephone Services or Service Elements in the State of Nevada, 5/8/97, 5/23/97.

New Jersey Board of Public Utilities

- Docket No. TX95120631, Notice of Investigation into Local Exchange Competition for Telecommunications Services, 8/30/96, 12/20/96.

New York Public Service Commission

- Case No. 98-C-1357, Proceeding on Motion of the Commission to Examine New York Telephone Company's Rates for Unbundled Network Elements, 9/23/99, 10/18/99, 10/22/99, 2/7/00, 2/22/00, 3/31/00.
- Case Nos. 94-E-0098 *et al.*, Niagara Mohawk Fuel Adjustment Clause Target and S.C. 6 Update Filing, 11/17/95.
- Case Nos. 93-E-0912 *et al.*, Proceeding on Motion of the Commission to Review Long-Run Avoided Cost Estimation Policies and Methods, 5/10/95, 5/31/95.
- Central Hudson Gas & Electric Company General Rate Case
- Niagara Mohawk Power Corporation General Rate Case
- Case Nos. 91-E-0863 *et al.*, New York State Electric & Gas Corporation General Rate Case, 1/92.
- Case Nos. 91-E-0765 *et al.*, Rochester Gas & Electric Corporation General Rate Case, 11/91.
- Case No. 91-E-0506, Central Hudson Gas & Electric Company General Rate Case, 9/91, 10/91.
- Case Nos. 29327 *et al.*, Niagara Mohawk General Rate Case, 3/91.
- Docket No. 89-E-176, In the Matter of the Proceeding on Motion of the Commission to Examine Ratemaking Practices and Incentive Mechanisms Promoting Least-Cost Planning and Demand-Side Management by Electric Utilities, 4/19/90, 5/4/90, 4/18/91, 6/20/91.

North Carolina Utilities Commission

- Docket Nos. P-7, Sub 825, and P-10, Sub 479, In the Matter of Petition of Carolina Telephone and Telegraph and Central Telephone Company for Approval of a Price Regulation Plan Pursuant to G. S. 62-133.5, 1/31/96.
- Docket No. P-55, Sub 1013, In the Matter of Application of BellSouth Telecommunications, Inc., for, and Election of, Price Regulation and Motion for a Hearing, 1/28/96, 2/1/96.

Oregon Public Utility Commission

- Case No. UM-731, Phase IV, In the Matter of the Investigation of Universal Service in the State of Oregon, 1/17/00.

Pennsylvania Public Utility Commission

- Docket Nos. R-00994697 and R-994697C0001, Pennsylvania Public Utility Commission v. Bell Atlantic – Pennsylvania, Inc./ Rhythms Links Inc., Complainant v. Bell Atlantic – Pennsylvania, Inc., Respondent, 12/21/99, 1/14/00.
- Docket Nos. P-00991648, Joint Application of NEXTLINK Pennsylvania, Inc., *et al.* and P-00991649, Joint Application of Bell Atlantic – Pennsylvania, Inc., *et al.*, 4/22/99, 6/11/99.
- Docket Nos. A-310200F0002 *et al.*, In re the Joint Application of Bell Atlantic Corporation and GTE Corporation for Approval of Agreement and Plan of Merger, 3/23/99, 5/19/99.
- Docket No. I-00960066, Generic Investigation of Intrastate Access Charge Reform, 6/30/97, 7/29/97, 8/27/97.
- Docket No. A-31023670002, In the Matter of the Application of MCI Metro Access Transmission Services, Inc. for a Certificate of Public Convenience and Necessity to Provide and Resell Local Exchange Telecommunications Services in Pennsylvania, 9/96.
- Petition for Arbitration by AT&T-PA for an Interconnection Agreement with GTE-PA, 9/96.
- Petition for Arbitration by Eastern TeleLogic for an Interconnection Agreement with Bell Atlantic - Pennsylvania, 9/96.
- Petition for Arbitration by AT&T-PA for an Interconnection Agreement with Bell Atlantic - Pennsylvania, 9/96.
- Docket No. I-940035, Formal Investigation to Examine and Establish Updated Universal Service Principles and Policies for Telecommunications Services, 1/11/96, 2/14/96, 2/27/96.
- Docket No. A-310203F002, Application of MFS Intelenet of Pennsylvania, Inc., for Approval to Operate as a Local Exchange Telecommunications Company, 1/30/95, 2/22/96, 3/22/96, 1/13/97, 2/97.

South Carolina Public Service Commission

- Docket No. 95-720-C, Application of BellSouth Telecommunications, Inc. d/b/a Southern Bell Telephone and Telegraph Company for Alternative Regulation, 8/21/95, 9/11/95.
- Docket No. 95-862-C, Re: BellSouth Telecommunications, Inc. d/b/a Southern Bell Telephone and Telegraph Company Investigation of Level of Earnings, 8/21/95, 9/11/95.

Texas Public Utility Commission

- Docket Nos. 20226, Petition of Accelerated Connections, Inc. d/b/a ACI Corp. for Arbitration to Establish an Interconnection Agreement with Southwestern Bell Telephone Company, and 20272, Petition of DIECA Communications, Inc., d/b/a Covad Communications Company for Arbitration of Interconnection Rates, Terms and Conditions and Related Arrangements with Southwestern Bell Telephone Company, 2/19/99, 4/8/99.

Vermont Public Service Board

- Docket No. 5780, Green Mountain Power Company General Rate Case, 1/13/95.

- Docket No. 5695, Green Mountain Power Company General Rate Case, 1/94.

Virginia State Corporation Commission

- Petitions for Arbitration of AT&T-VA and MCI Communications Corporation for an Interconnection Agreement with Bell Atlantic - Virginia, 9/20/96.
- Petition for Arbitration of AT&T-VA for an Interconnection Agreement with GTE-VA, 8/96, 10/29/96.

Washington Utilities and Transportation Commission

- Docket No. UT-960639 *et al.*, Phase II, In the Matter of the Pricing Proceeding for Interconnection, Unbundled Elements, Transport and Termination, and Resale, 8/20/98, 9/11/98.
- Docket No. UT-950200, Washington Utilities and Transportation Commission vs. U S WEST Communications, Inc., 8/28/95, 12/15/95.
- Docket No. UT-941464 *et al.*, Washington Utilities and Transportation Commission vs. U S WEST Communications, Inc., 4/17/95, 5/31/95.
- Docket No. UT-911488 *et al.*, Washington Utilities and Transportation Commission vs. U S WEST Communications, Inc.

Wisconsin Public Service Commission

- In the Matter of the Petition of MCImetro Access Transmission Services, Inc. for Arbitration of Interconnection Rates, Terms, and Conditions Pursuant to 47 U.S.C. § 252(b) of the Telecommunications Act of 1996 (Ameritech – Wisconsin), 12/96.

Civil Proceedings

- Nationwide Business Telephones and Team Centrex, Plaintiffs, vs. Introlink Communication Systems, Inc., Pacific Bell, Inc., *et al.*, Defendants, 5/96.
- Power Producers v. Pacific Gas & Electric, 6/93.
- WindTec, Inc. v. Southern California Edison Company, 7/90.

Education

A.B., Oberlin College, Oberlin, Ohio. Major: Economics. National Merit Scholar, recipient of Hanson Prize in Economics, elected to Phi Beta Kappa.

M.A., M.Phil., Yale University, New Haven, Connecticut. Economics. Admitted to Ph.D. candidacy and completed all Ph.D. requirements except dissertation. Fields of specialization included industrial organization and energy and environmental economics. Honorable mention, National Science Foundation Fellowship; recipient of University Fellowship and Sloan Foundation dissertation research fellowship.

Exhibit __ (RC-1)

CURRICULUM VITAE OF RICHARD CABE

Richard Cabe, Ph.D.

President
Richard Cabe, Inc.
221 I St.
Salida, CO 81201

(719) 530-0278 (office)
(719) 530-0265 (fax)
(719) 530-0249 (home)
Internet: rcabe@sni.net

Education

Ph.D., Economics, University of Wyoming, 1988
Public regulation & Industrial organization
Natural resource & Environmental economics

M.A., Economics, Pennsylvania State University, 1980
Mathematical economics
History of economic thought

B.A., Mathematics, University of Maine at Presque Isle, 1978
Minor in Business Administration

AREAS OF INTEREST

Telecommunications industry
Microeconomics of technological change
Economics of Management

EXPERT TESTIMONY AND REPORTS:

Before the Washington Utilities and Transportation Commission, Docket No. UT-960369: In the Matter of the Pricing Proceeding For Interconnection, Unbundled Elements, Transport and Termination and Resale; Direct testimony filed 15 December, 1999; rebuttal testimony filed 7 February; hearing testimony 28 February, 2000

Before the New Mexico Public Regulatory Commission, Utility Case No. 3111, In the Matter of the Implementation of a State Universal Service Fund, Hearing testimony December 1, 1999

Before the Tennessee Regulatory Authority: "Public Policy considerations for Regulation of the InterLATA Telecommunications Market in Tennessee", Statement of Richard Cabe on behalf of MCI Worldcom in the Tennessee Regulatory Authority's consideration of amendments to the IXC Rule; filed September 14, 1999

Before the Iowa Utilities Board, Docket No. INU-99-3: In the Matter of Petition for Determination of Effective Competition, for Waiver of Accounting Plan Requirement and for Expedited Consideration; Direct Testimony filed September 10, 1999; Hearing testimony October 12, 1999

Before the Public Utilities Commission of the State of Colorado, Docket No. 99A-161T: In the Matter of the Application of U S West Communications, Inc. to Reduce Business Basic Exchange and Long Distance Revenues upon Receipt of the Colorado High Cost Support Mechanism in Accordance with Decision No. C99-222; Direct Testimony filed August 6, 1999

State of Florida Division of Administrative Hearings DOAH Case No. 98-2445RP: Telephonic Deposition of Dr. Richard Cabe in the matter of Florida Competitive Carriers Association, Inc.; Telecommunications Resellers Association, Inc.; AT&T Communications of the Southern States, Inc.; MCI Telecommunications Corporation; and Sprint Communications Company Limited Partnership, Petitioners, v. Florida Public Service Commission, Respondent. August 14, 1998 on behalf of Florida Competitive Carriers Association.

Before the Mississippi Public Service Commission, Docket No. 97-AD-544: Generic Proceeding to Establish Permanent Prices for BellSouth Interconnection and Unbundled Network Elements; Direct Testimony filed January 28, 1998; Rebuttal testimony filed March 13, 1998; Hearing testimony March 31, 1998; On behalf of AT&T Communications of the South Central States, Inc.

Before the North Carolina Utilities Commission, Docket No. P-100, Sub 133d: Review of Cost Studies, Methodologies, and Cost-Based Rates for Unbundled Network Elements; Direct testimony filed December 15, 1997; Rebuttal testimony filed March 9, 1998; Hearing testimony March 25, 1998; On behalf of AT&T Communications of the Southern States, Inc. and MCI Telecommunications Corporation

Before the South Carolina Public Service Commission, Docket No. 97-374-C: Proceeding to Review BellSouth Telecommunications, Inc.'s Cost for Unbundled Network Elements and Interconnection Arrangements; Direct Filed November 17, 1997; Hearing Testimony December 16, 1997; On Behalf of AT&T Communications of the Southern States, Inc.

Before the Public Utilities Commission of the State of Colorado, Docket No. 97M-063T; On Behalf of AT&T Communications of the Mountain States, Inc. and MCI Telecommunications Corporations; In the Matter of the Administration of the Colorado High Cost Fund and the Development of a Cost Model; Direct Testimony filed in the name of William Lehr; Hearing Testimony 1 December, 1997

Before the North Carolina Utilities Commission, Docket No. P-55, SUB 1022; Hearing Testimony September 30, 1997; In RE: Notification of Intention to File a Section 271 Petition for In-Region InterLATA Authority with the FCC Pursuant to the Telecommunications Act of 1996; Filed September 3, 1997; On Behalf of MCI Telecommunications Corporation and AT&T Communications of the Southern States

Before the Alabama Public Service Commission, Docket No. 26029, Review of Cost Studies; Filed August 29, 1997; Hearing Testimony September 24, 1997; On Behalf of MCI Telecommunications Corporation and AT&T Communications of the South Central States

Before the Georgia Public Service Commission, Docket No. 7061-U, Review of Cost Studies, Methodologies, and Cost-Based Rates for Interconnection and Unbundling of BellSouth Telecommunications Services; Direct filed April 30, 1997; Rebuttal and Supplemental filed August 29, 1997; Surrebuttal filed September 8, 1997; Hearing Testimony September 18, 1997; On Behalf of MCI Telecommunications Corporation and AT&T Communications of the South Central States

Before the Louisiana Public Service Commission, Docket No. 22022/22093; In RE: Review and Consideration of BellSouth Telecommunications, Inc.'s TSLRIC and LRIC Cost Studies; Filed August 25, 1997; Hearing Testimony 12 September, 1997; On Behalf of MCI Telecommunications Corporation and AT&T Communications of the South Central States

Before the Public Service Commission, Commonwealth of Kentucky, In the Matter of: Inquiry into Universal Service and Funding Issues, Administrative Case No. 360, Filed July 11, 1997; Hearing Testimony August 6, 1997; on behalf of MCI Telecommunications Corporation

Before the Florida Public Service Commission, In The Matter of the Petition of MCI Telecommunications Corporation for Arbitration with United Telephone Company of Florida and Central Telephone Company of Florida concerning interconnection rates, terms and conditions pursuant to the Federal Telecommunications Act of 1996, Docket No. 961230-TP; Direct filed October 11, 1996; Rebuttal filed November 19, 1996; Hearing Testimony December 19, 1996; on behalf of MCI Telecommunications Corporation

Before the Arizona Corporation Commission, In The Matter of The Petition Of MCImetro Access Transmission Services, Inc. For Arbitration Of Interconnection Rates, Terms, And Conditions Pursuant to 47 U.S.C. § 252(b) Of The Telecommunications Act Of 1996, Docket No: U-3175-96-479; October 18, 1996; on behalf of MCImetro Access Transmission Services, Inc.

Before the Public Utility Commission of Texas, In The Matter of The Petition Of MCImetro Access Transmission Services, Inc. For Arbitration Of Interconnection Rates, Terms, And Conditions Pursuant to 47 U.S.C. § 252(b) Of The Telecommunications Act Of 1996, Docket Nos. 16300, 16355, October 14, 1996; on behalf of MCImetro Access Transmission Services, Inc.

Before the Public Utilities Commission of the State of Oregon, In The Matter of The Petition Of MCImetro Access Transmission Services, Inc. For Arbitration Of Interconnection Rates, Terms, And Conditions Pursuant to 47 U.S.C. § 252(b) Of The Telecommunications Act Of 1996, ARB 9, October 11, 1996; on behalf of MCImetro Access Transmission Services, Inc.

Before the Utah Public Service Commission, In the Matter of the Petition for Arbitration, Consolidation and Request for Agency Action of MCI Metro Access Transmission Services, Inc. Pursuant to 47 U.S.C. Section 252, Docket No. 96-095-01; Direct testimony filed 8 November 1996; Rebuttal testimony filed 22 November, 1996

Before the Iowa Utilities Board, In Re MCI Metro Access Transmission Services, Inc., Petitioning Party, and U S West Communications, Inc., Responding Party, Docket No. ARB-96-2, September 6, 1996; on behalf of MCImetro.

"Before the Public Utilities Commission of Oregon:UM 351, In the matter of the Investigation into the Cost of Providing Telecommunications Services, Electric Lightwave, Inc.'s Response to Issues 1, 3, and 4, filed 30 August, 1993"

Before the Washington Utilities and Transportation Commission, In the Matter of the Complaint of GTE Northwest Incorporated against Pacific Northwest Bell Telephone Company with respect to Interexchange Traffic Utilizing Extended Area Service Facilities, Docket No. U-88-1719-F; on behalf of U.S. Metrolink Company; Cross Examination December 1989

"Affidavit of Richard Cabe", in Support of Motion of U.S. MetroLink Company for Suspension and Hearing in the matter of U. S. West Communications Tariff Filing 2056T before the Washington Utilities and Transportation Commission, September 1989

Implementation of the Colorado Telecommunications Act of 1987: An Evaluation", Report to the Colorado Public Utilities Commission, with Vinson Snowberger, June 30, 1988

Before the Energy and Utilities Committee of the Washington State House of Representatives, to present the Annual Report of the Utilities and Transportation Commission on the Status of the Washington Telecommunications Industry, February 1987

Before the Washington Utilities and Transportation Commission, In the Matter of Application of Pacific Northwest Bell for Banded Tariffs, Cause no. U-86-40; Cross Examination September 1986

Before the Washington Utilities and Transportation Commission, In the Matter of the Petition of AT&T of the Northwest for Classification as a Competitive Telecommunications Company, Cause no. U-86-113; Cross Examination April 1986

Cost of Service Information for Implementation of the Regulatory Flexibility Act, Report to the Washington Utilities and Transportation Commission, July 1985

"On Reducing Errors in Air Pollution Epidemiology," with S. Atkinson and T.D. Crocker, draft report, Institute for Policy Research, University of Wyoming to U.S. Environmental Protection Agency for Grant CR808893-01, April 1982.

Consulting Clients:

Texas Office of Public Utility Counsel
Florida Competitive Carriers Association
Avantel, Mexico
AT&T
MCI and MCI Worldcom
Marcatel, Mexico
New Mexico State Corporation Commission
Electric Lightwave Inc.
Washington Utilities and Transportation Commission
U.S. MetroLink Company
Colorado Public Utilities Commission
Maryland People's Counsel

PUBLICATIONS:

"Multimedia Economics" Instructional CD ROM included in 5 CD MBA Boxed Set, Pro One Software, Las Cruces, New Mexico, 1998

"Issues, Indicators, and Baselines: The Benefits and Hazards of Using a Natural Resource Accounting System in the RCA Analytical Process", with Jason Shogren and Stanley R. Johnson, in *Evaluating Our Nation's Natural Resources*, edited by T. Robertson, B. English, R. Alexander, and P. Rosenberry, University of Tennessee Agricultural Experiment Station, 1996

"CEEPES: An Evolving System for Agroenvironmental Policy", with Aziz Bouzaher, Stanley Johnson, Andrew Manale and Jason Shogren, p 67-89 in Integrating Economic and Ecological Indicators, edited by J. Walter Milon and Jason Shogren, Praeger, Westport CT, 1995

"Metamodels and Nonpoint Pollution Policy in Agriculture", with Aziz Bouzaher, Alicia Carriquiry, Phil Gassman, P. G. Lakshminarayan, and Jason Shogren, Water Resources Research 29, p. 1579-1587, June 1993

"The Effects of Environmental Policy on Tradeoffs in Weed Control Management", with Aziz Bouzaher, David Archer, Alicia Carriquiry and Jason Shogren, The Journal of Environmental Management, 36, #1, 69 - 80, Sept. 1992

"The Regulation of Non-Point Source Pollution Under Imperfect Information", with Joseph Herriges, The Journal of Environmental Economics and Management 22, 134-146, 1992

"Equilibrium Diffusion of Technological Change Through Multiple Processes", Technological Forecasting and Social Change 39, Number 3, May 1991

"Natural Resource Accounting Systems and Environmental Policy Modeling", with Stanley R. Johnson, The Journal of Soil and Water Conservation 45 # 5, p 533-9, September/October 1990

"Network Differentiation and the Prospects for Competition in Local Telecommunications", in Sixth Annual Current Issues Challenging the Regulatory Process, The Center for Public Utilities, New Mexico State University, 1990

"Prospects for Competition in the Local Exchange Telecommunications Industry", in Telecommunications Regulation in Washington State, Washington Utilities and Transportation Commission, January 29, 1989

"Rate of Return Regulation of Multiproduct Firms," Doctoral Dissertation, University of Wyoming, Department of Economics, 1988

Annual Report to the Legislature on the Status of the Washington Telecommunications Industry, principal author for the Washington Utilities and Transportation Commission, January, 1987

"Normative Economics and the Acid Rain Problem" with L.S. Eubanks, in T.D. Crocker, ed., Perspectives on the Economics of Acid Deposition, 1983, Ann Arbor Michigan: Ann Arbor Science Press.

"Intertemporal and Intergenerational Pareto Efficiency: An Extended Theorem," Journal of Environmental Economics & Management 9, p 355-360, December 1982.

"Investment Criteria for Projects with Intergenerational Effects," Masters Thesis, Pennsylvania State University, Department of Economics, 1982.

EMPLOYMENT

Teaching:

Associate professor, Department of Economics and International Business, New Mexico State University; 1994 - 1999, Tenure Granted 1995, Assistant professor 1990 to 1994: Antitrust Policy and Monopoly Power; Graduate Microeconomic Theory; Mathematical Economics; Industrial Organization; Seminar in Regulatory Economics; Economics of Risk, Uncertainty and Information; Game Theory; Advanced Seminar in Industrial Organization; Econometrics; Managerial Economics; Introduction to Economics; Microeconomic Principles

Assistant professor, Department of Economics, West Virginia University, 1983-1984: Graduate Environmental Economics; Principles of Economics.

Lecturer, Department of Economics, University of Wyoming, 1982-1983: Money & Banking; Intermediate Microeconomics.

Teaching assistant, Department of Economics, University of Wyoming; Fall, 1980.

Teaching assistant, Department of Economics and Department of Mathematics, Pennsylvania State University, five quarters in academic years 1978-1979 and 1979-1980.

Public Policy:

Economic Consultant, 1988. Performed economic analysis concerning regulation of the telecommunications industry under contract to the Colorado Public Utilities Commission and the Washington Utilities and Transportation Commission.

Associate, RCG/Hagler, Bailly, Inc. 1987-1988. Assignments included litigation support in Bell Operating Company requests for lessened regulation and a study of the effect on property values of proximity to a major defense facility containing hazardous waste sites.

Telecommunications Regulatory Flexibility Manager, Washington Utilities and Transportation Commission, 1985-1987. Duties included conduct of investigations and preparation of recommendations, primarily with regard to the telecommunications industry; preparing evidence, assisting in cross examination and presenting expert testimony; and serving as a member of the Federal - State Joint Board Staff, FCC Docket 86-297, concerned with revising jurisdictional separations of telecommunications company costs and revenues.

Research:

Post-Doctoral Research Associate, Center for Agricultural and Rural Development, Department of Economics, Iowa State University, September 1988 to August 1990. Participate in policy-oriented economic research and serve as liason to the Economic Research Service, USDA.

Research Associate, Department of Economics, University of Wyoming, spring 1981 through summer 1982. Theoretical modelling, data construction, and analysis on health effects of air pollution and application of economic methods to ecosystem modelling. Under the direction of Thomas Crocker.

Research assistant, Department of Economics, University of Wyoming, summer 1980. Data construction and analysis on health effects of air pollution. Under the direction of Ralph d'Arge.

Research assistant, Department of Economics, Pennsylvania State University, summer and fall 1979. Theoretical and empirical work with Assymmetric Quadratic Gorman Polar forms (flexible functional forms with explicit analytical solutions for the dual cost or expenditure function). Under the direction of Jonathon Dickinson.

Other Employment:

One year, Administrative Research Assistant, Aroostook County Action Program, Presque Isle, Maine.

Four years, U.S. Coast Guard, Electronics Technician.

AWARDS

Washington Utilities and Transportation Commission employee award for contributions to a positive work environment, Olympia, Washington, December 1986.

Award of merit, College of Commerce and Industry, University of Wyoming, 1981.

John S. Bugas fellow, University of Wyoming, academic year 1980-1981.

PERSONAL

Born July 16, 1950; Pulaski County, Arkansas

Married, one child

Second language: Spanish

Exhibit ___ (PDK-1)

STATEMENT OF QUALIFICATIONS OF PATRICIA D. KRAVTIN

Statement of Qualifications

PATRICIA D. KRAVTIN

Patricia D. Kravtin is Senior Vice President at ETI. Ms. Kravtin did graduate study in the Ph.D. program in Economics at the Massachusetts Institute of Technology, where she was a National Science Foundation Fellow. Her fields of study have included Industrial Organization, Government Regulation of Industry, and Urban and Regional Economics. While at M.I.T., Ms. Kravtin performed research for the Sloan School of Management and the Joint Center for Urban Studies of M.I.T. and Harvard. Her own empirical work has centered on multiproduct industries and has included econometric estimation of multiproduct cost functions and measurement of product-specific economies of scale and economies of joint production.

While in Washington, D.C., Ms. Kravtin gained valuable insight into the regulatory process performing research and policy analysis at the United States Department of Commerce, the Securities and Exchange Commission, and the Private Radio Bureau of the Federal Communications Commission.

Since joining ETI in 1982, Ms. Kravtin has been actively involved in state regulatory proceedings throughout the country and has frequently testified as an expert witness before regulatory commissions. Ms. Kravtin has testified before the Arizona Corporation Commission, Arkansas Public Service Commission, California Public Utilities Commission, Connecticut Department of Public Utility Control, Delaware Public Service Commission, Florida Public Service Commission, Georgia Public Service Commission, Illinois Commerce Commission, Kansas Corporation Commission, Kentucky Public Service Commission, Louisiana Public Service Commission, Maine Public Utilities Commission, Minnesota Public Utilities Commission, the Mississippi Public Service Commission, New Hampshire Public Utility Commission, New Jersey Board of Regulatory Commissioners, New York Public Service Commission, Puerto Rico Telecommunications Regulatory Board, Rhode Island Public Utilities Commission, South Carolina Public Service Commission, the Tennessee Public Service Commission, and the Texas Public Utilities Commission.

Ms. Kravtin has also on numerous occasions submitted written testimony and other filings before the Federal Communications Commission, the Federal Energy Regulatory Commission, and international agencies including the Canadian Radio-television and Telecommunications Commission, and the Guam Public Utilities Commission. Ms. Kravtin has testified as an expert witness in antitrust litigation before the United States District Court for the Eastern District of Tennessee at Greeneville, and has served as an expert in a number of anti-trust cases involving monopolization by the local telephone company. Ms. Kravtin has served as advisor to a number of state regulatory commissions, including most recently, the Public Service Commission of the District of Columbia.

RECORD OF PRIOR TESTIMONY

PATRICIA D. KRAVTIN

2000

Before the **Public Utility Commission of Texas**, in *Re: Proceeding to Examine Reciprocal Compensation Pursuant to Section 252 of the Federal Telecommunications Act of 1996*, CC Docket No. 21982, on behalf of AT&T Communications of Texas, L.P., TCG Dallas, and Teleport Communications Houston, Inc., filed March 31, 2000.

Before the **Federal Communications Commission**, in *Re: In the Matter of Price Caps Performance Review for Local Exchange Carriers, Access Charge Reform*, CC Dockets 94-1, 96-262, on behalf of Ad Hoc Telecommunications Users Committee, filed January 24, 2000.

Before the **Federal Energy Regulatory Commission**, in *Re: In the Matter of Northern Border Pipeline Company*, on behalf of the Canadian Association of Petroleum Producers and the Alberta Department of Resource Development, filed January 20, 2000.

1999

Before the **Connecticut Department of Public Utilities**, in *Re: Evaluation and Application to Modify Franchise Agreement by SBC Communications Inc., Southern New England telecommunications Corporation and SNET Personal Vision, Inc.*, Docket No. 99-04-02, on behalf of the Office of Consumer Counsel, filed June 22, 1999; cross- examination July 8, 1999.

Before the **Illinois Commerce Commission**, in *Re: Illinois Commerce Commission on its own Motion v. Illinois Bell Telephone Company; et al: Investigation into Non-Cost Based Access Charge Rate Elements in the Intrastate Access Charges of the Incumbent Local Exchange Carriers in Illinois, Illinois Commerce Commission on its own Motion Investigation into Implicit Universal Service Subsidies in Intrastate Access Charges and to Investigate how these Subsidies should be Treated in the Future, Illinois Commerce Commission on its own motion Investigation into the Reasonableness of the LS2 Rate of Illinois Bell Telephone Company*, Docket No. 97-00601, 97-0602, 97-0516, Consolidated, on behalf of City of Chicago, filed January 4, 1999; rebuttal February 17, 1999.

Before the **Puerto Rico Telecommunications Regulatory Board**, in *Re: In the Matter of Arbitration of Interconnection Rates, Terms and Conditions between Centennial Wireless PCS Operations Corp., Lambda Communications Inc., and the Puerto Rico Telephone Company*, behalf of Centennial Wireless PCS Operations Corp. and Lambda Communications Inc., cross-examination February 16, 1999.

1998

Before the **California Public Utilities Commission**, in *Re: In the Matter of the Application of Pacific Bell (U 1001 C), a Corporation, for Authority for Pricing Flexibility and to Increase Prices of Certain Operator Services, to Reduce the Number of Monthly Assistance Call Allowances, and Adjust Prices for Four Centrex Optional Features*, Application No. 98-05-038, on behalf of County of Los Angeles, filed November 17, 1998, cross-examination, December 9, 1998.

Before the **Puerto Rico Telecommunications Regulatory Board**, in *Re: In the Matter of PRTC's Tariff K-2 (Intra-island access charges)*, Docket no. 97-Q-0001, 97-Q-0003, on behalf of Lambda Communications, Inc., filed October 9, 1998, cross-examination October 9, 1998.

Before the **Connecticut Department of Public Utility Control**, in *Re: Application of the Southern New England Telephone Company*, Docket no. 98-04-03, on behalf of the Connecticut Office of Consumer Counsel, filed August 17, 1998, cross-examination February 18, 1999.

Before the **California Public Utilities Commission**, in *Re: Pacific Gas & Electric General Rate Case*, A.97-12-020, on behalf of Office of Rate Payers Advocates CA PUC, filed June 8, 1998.

1997

Before the **South Carolina Public Service Commission**, in *Re: Proceeding to Review BellSouth Telecommunications, Inc.'s Cost for Unbundled Network Elements*, Docket no. 97-374-C, on behalf of the South Carolina Cable Television Association, filed November 17, 1997.

Before the **State Corporation Commission of Kansas**, in *Re: In the Matter of and Investigation to Determine whether the Exemption from Interconnection Granted by 47 U.S.C. 251(f) should be Terminated in the Dighton, Ellis, Wakeeney, and Hill City Exchanges*, Docket No. 98-GIMT-162-MIS, on behalf of classic Telephone, Inc., filed October 23, 1997.

Before the **Georgia Public Services Commission**, in *Re: Review of Cost Studies, Methodologies, and Cost-Based Rates for Interconnection and Unbundling of BellSouth Telecommunications Services*, Docket No. 7061-U, on behalf of the Cable Television Association of Georgia, filed August 29, 1997, cross-examination September 19, 1997.

Before the **Federal Communications Commission**, in *Re: In the Matter of Price Caps Performance Review for Local Exchange Carriers, Access Charge Reform*, CC Dockets 94-1, 96-262, on behalf of Ad Hoc Telecommunications Users Committee, filed July 11, 1997.

Before the **Federal Communications Commission**, in *Re: In the Matter of Amendment of Rules and Policies Governing Pole Attachments*, CS Docket 97-98, on behalf of NCTA, filed June 27, 1997.

Before the **Public Utilities Commission of the State of California**, in *Re: Rulemaking on the Commission's Own Motion to Govern Open Access to Bottleneck Services and Establish a Framework for Network Architecture Development of Dominant Carrier Networks*, R.93-04-003, I.93-04-002AT&T, filed March 19, 1997, reply April 7, 1997.

Before the **Puerto Rico Telecommunications Regulatory Board**, in *Re: In the Matter of Centennial Petition for Arbitration with PRTC*, on behalf of Centennial Cellular Corporation, filed February 14, 1997, supplemental March 10, 1997.

Before the **Federal Communications Commission**, in *Re: In the Matter of Access Charge Reform*, CC Docket 96-262, on behalf of AT&T, filed January 29, 1997, reply February 14, 1997.

1996

Before the **New Jersey Board of Public Utilities**, in *Re: In the Matter of the Investigation Regarding Local Exchange Competition for Telecommunications Services*, TX95120631, on behalf of New Jersey Cable Television Association, filed on August 30, 1996, reply September 9, 1997, October 20, 1997, cross-examination September 12, 1996, December 20, 1996.

Before the **State Corporation Commission of the State of Kansas**, in *Re: In the Matter of a General Investigation Into Competition Within the Telecommunications Industry in the State of Kansas*, 190, 492-U 94-GIMT-478-GIT, on behalf of Kansas Cable Telecommunications Association, Inc., filed July 15, 1996, cross-examination August 14, 1996.

Before the **Federal Communications Commission**, in *Re: Price Caps Performance Review for Local Exchange Carriers*, CC Docket 94-1, on behalf of Ad Hoc Telecommunications Users Committee, filed July 12, 1996.

Before the **State Corporation Commission of the State of Kansas**, in *Re: In the Matter of a General Investigation Into Competition Within the Telecommunications Industry in the State of Kansas*, 190, 492-U 94-GIMT-478-GIT, on behalf of Kansas Cable Telecommunications Association, Inc., filed June 14, 1996, cross-examination August 14, 1996.

Before the **Federal Communications Commission**, in *Re: In the Matter of Implementation of the Local Competition Provisions of Telecommunications Act of 1996*, CC Docket 96-98, filed May 1996.

Before the **Federal Communications Commission**, in *Re: Puerto Rico Telephone Company (Tariff FCC No. 1)*, Transmittal No. 1, on behalf of Centennial Cellular Corp., filed April 29, 1996.

Before the **United States District Court for the Eastern District of Tennessee at Greeneville**, in *Re: Richard R. Land, Individually and d/b/a The Outer Shell, and on behalf of all others similarly situated, Plaintiffs, vs. United Telephone-Southeast, Inc., Defendant*, CIV 2-93-55, filed December 7, 1996.

1995

Before the **Federal Communications Commission**, in *Re: Bentleyville Telephone Company Petition and Waiver of Sections 63.54 and 63.55 of the Commission's Rules and Application for Authority to Construct and Operate, Cable Television Facilities in its Telephone Service Area*, W-P-C-6817, on behalf of the Helicon Group, L.P. d/b/a Helicon Cablevision, filed November 2, 1995.

Before the **US District Court of Tennessee**, in *Re: Richard R. Land, Individually and d/b/a The Outer Shell, and on behalf of all others similarly situated, Plaintiffs, vs. United Telephone-Southeast, Inc., Defendant*, 2-93-55, Class Action, filed June 12, 1995.

Before the **Connecticut Department of Public Utility Control**, in *Re: Application of SNET Company for approval to trial video dial tone transport and switching*, 95-03-10, on behalf of New England Cable TV Association, filed May 8, 1995, cross-examination May 12, 1995.

Before **Canadian Radio-Television and Telecommunications Commission**, in *Re: CRTC Order in Council 1994-1689*, Public Notice CRTC 1994-130 (Information Highway), filed March 10, 1995.

Before the **Federal Communications Commission**, in *Re: GTE Hawaii's Section 214 Application to provide Video Dialtone in Honolulu, Hawaii*, W-P-C- 6958, on behalf of Hawaii Cable TV Association, filed January 17, 1995 (Reply to Amended Applications).

Before the **Federal Communications Commission**, in *Re: GTE Hawaii's Section 214 Application to provide Video Dialtone in Ventura County*, W-P-C 6957, on behalf of the California Cable TV Association, filed January 17, 1995 (Reply to Amended Applications).

Before the **Federal Communications Commission**, in *Re: GTE Florida's Section 214 Application to Provide Video Dialtone in the Pinellas County and Pasco County, Florida areas*, W-P-C 6956, on behalf of Florida Cable TV Association, filed January 17, 1995 (Reply to Amended Applications).

Before the **Federal Communications Commission**, in *Re: GTE Virginia's Section 214 Application to provide Video Dialtone in the Manassas, Virginia area*, W-P-C 6956, on behalf of Virginia Cable TV Association, filed January 17, 1995 (Reply to Amended Applications).

1994

Before the **Federal Communications Commission**, in *Re: NET's Section 214 Application to provide Video Dialtone in Rhode Island and Massachusetts*, W-P-C 6982, W-P-C 6983, on behalf of New England Cable TV Association, filed December 22, 1994 (Reply to Supp. Responses).

Before the **State Corporation Commission of the State of Kansas**, in *Re: General Investigation into Competition*, 190, 492-U 94-GIMT-478-GIT, on behalf of Kansas CATV Association, filed November 14, 1994, cross-examination December 1, 1994.

Before the **Federal Communication Commission**, in *Re: Carolina Telephone's Section 214 Application to provide Video Dialtone in areas of North Carolina*, W-P-C 6999, on behalf of North Carolina Cable TV Association, filed October 20, 1994, reply November 8, 1994.

Before the **Federal Communication Commission**, in *Re: NET's Section 214 Application to provide Video Dialtone in Rhode Island and Massachusetts*, W-P-C 6982, W-P-C 6983, on behalf of New England Cable TV Association, filed September 8, 1994, reply October 3, 1994.

Before the **California Public Utilities Commission**, in *Re: Petition of GTE-California to Eliminate the Preapproval Requirement for Fiber Beyond the Feeder*, I.87-11-033, on behalf of California Bankers Clearing House, County of LA, filed August 24, 1994.

Before the **Federal Communications Commission**, in *Re: BellSouth Telecommunications Inc., Section 214 Application to provide Video Dialtone in Chamblee, GA and Dekalb County, GA*, W-P-C 6977, on behalf of Georgia Cable TV Association, filed August 5, 1994.

Before the **Federal Communications Commission**, in *Re: Bell Atlantic Telephone Companies Section 214 Application to provide Video Dialtone within their Telephone Services Areas*, W-P-C 6966, on behalf of Mid Atlantic Cable Coalition, filed July 28, 1994, reply August 22, 1994.

Before the **Federal Communication Commission**, in *Re: GTE Hawaii's 214 Application to provide Video Dialtone in Honolulu, Hawaii*, W-P-C 6958, on behalf of Hawaii Cable TV Association, filed July 1, 1994, and July 29, 1994.

Before the **Federal Communication Commission**, in *Re: GTE California's Section 214 Application to provide Video Dialtone in Ventura County*, W-P-C 6957, on behalf of California Cable TV Association, filed July 1, 1994, and July 29, 1994.

Before the **Federal Communication Commission**, in *Re: GTE Florida's 214 Application to provide Video Dialtone in the Pinellas and Pasco County, Florida areas*, W-P-C 6956, on behalf of Florida Cable TV Association, filed July 1, 1994, and July 29, 1994.

Before the **Federal Communication Commission**, in *Re: GTE Virginia's 214 Application to provide Video Dialtone in the Manassas, Virginia area*, W-P-C 6955, on behalf of the Virginia Cable TV Association, filed July 1, 1994, and July 29, 1994.

Before the **Federal Communications Commission**, in *Re: US WEST's Section 214 Application to provide Video Dialtone in Boise, Idaho and Salt Lake City, Utah*, W-P-C 6944-45, before the Idaho and Utah Cable TV Association, filed May 31, 1994.

Before the **Federal Communication Commission**, in *Re: US WEST's Section 214 Application to provide Video Dialtone in Portland, OR; Minneapolis, St. Paul, MN; and Denver, CO*, W-P-C 6919-22, on behalf of Minnesota & Oregon Cable TV Association, filed March 28, 1994.

Before the **Federal Communications Commission**, in *Re: Ameritech's Section 214 Application to provide Video Dialtone within areas in Illinois, Indiana, Michigan, Ohio, and Wisconsin*, W-P-C-6926-30, on behalf of Great Lakes Cable Coalition, filed March 10, 1994, reply April 4, 1994.

Before the **Federal Communications Commission**, in *Re: Pacific Bell's Section 214 Application to provide Video Dialtone in Los Angeles, Orange County, San Diego, and Southern San Francisco Bay areas*, W-P-C-6913-16, on behalf of Comcast/Cablevision Inc., filed February 11, 1994, reply March 11, 1994.

Before the **Federal Communications Commission**, in *Re: SNET's Section 214 Application to provide Video Dialtone in Connecticut*, W-P-C 6858, on behalf of New England Cable TV Association, filed January 20, 1994, reply February 23, 1994.

1993

Before the **Arkansas Public Service Commission**, in *Re: Earnings Review of Southwestern Bell Telephone Company*, 92-260-U, on behalf of Arkansas Press Association, filed September 2, 1993.

Before the **United States District Court for the Eastern District of Tennessee at Greenville**, in *Re: Cleo Stinnett, et al. Vs. BellSouth Telecommunications, Inc. d/b/a/ South Central Bell Telephone Company, Defendant*, Civil Action No 2-92-207, Class Action, cross-examination May 10, 1993, and February 10, 1994.

Before the **Federal Communications Commission**, in *Re: NJ Bell's Section 214 Application to provide Video Dialtone service within Dover Township, and Ocean County, New Jersey*, W-P-C-6840, on behalf of New Jersey Cable TV Association, filed January 21, 1993.

1992

Before the **New Jersey Board of Regulatory Commissioners**, in *Re: NJ Bell Alternative Regulation*, T092030358, on behalf of NJ Cable TV Association, filed September 21, 1992.

Before the **New Hampshire Public Utilities Commission**, in *Re: Generic competition docket*, DR 90-002, on behalf of Office of the Consumer Advocate, filed May 1, 1992, reply July 10, 1994, Surrebutal August 21, 1994.

Before the New Jersey General Assembly Transportation, Telecommunications, and Technology Committee, *Concerning A-5063*, on behalf of NJ Cable TV Association, filed January 6, 1992.

1991

Before the New Jersey Senate Transportation and Public Utilities Committee, in *Re: Concerning Senate Bill S-3617*, on behalf of New Jersey Cable Television Association, filed December 10, 1991.

Before the 119th Ohio General Assembly Senate Select Committee on Telecommunications Infrastructure and Technology, in *Re: Issues Surrounding Telecommunications Network Modernization*, on behalf of the Ohio Cable TV Association, filed March 7, 1991.

Before the Tennessee Public Service Commission, in *Re: Master Plan Development and TN Regulatory Reform Plan*, on behalf of TN Cable TV Association, filed February 20, 1991.

1990

Before the Tennessee Public Service Commission, in *Re: Earnings Investigation of South Central Bell*, 90-05953, on behalf of the TN Cable Television Association, filed September 28, 1990.

Before the New York Public Service Commission, in *Re: NYT Rates, 90-C-0191*, on behalf of User Parties NY Clearing House Association, filed July 13, 1990, Surr Rebuttal July 30, 1990.

Before the Louisiana Public Service Commission, in *Re: South Central Bell Bidirectional Usage Rate Service*, U-18656, on behalf of Answerphone of New Orleans, Inc., Executive Services, Inc., King Telephone Answering Service, et al, filed January 11, 1990.

1989

Before the Georgia Public Service Commission, in *Re: Southern Bell Tariff Revision and Bidirectional Usage Rate Service*, 3896-U, on behalf of Atlanta Journal Const./Voice Information Services Company, Inc., GA Association of Telemessaging Services, Prodigy Services, Company, Telnet Communications, Corp., filed November 28, 1989.

Before the New York State Public Service Commission, in *Re: NYT Co. - Rate Moratorium Extension - Fifth Stage Filing*, 28961 Fifth Stage, on behalf

of User Parties NY Clearing House Association Committee of Corporate Telecommunication Users, filed October 16, 1989.

Before the **Delaware Public Service Commission**, in *Re: Diamond State Telephone Co. Rate Case*, 86-20, on behalf of DE PSC, filed June 16, 1989.

Before the **Arizona Corporation Committee**, in *Re: General Rate Case*, 86-20, on behalf of Arizona Corporation Committee, filed March 6, 1989.

1988

Before **New York State Public Service Commission**, in *Re: NYT Rate Moratorium Extension*, 28961, on behalf of Capital Cities/ ABC, Inc., AMEX Co., CBS, Inc., NBC, Inc., filed December 23, 1988.

1989

Before **Rhode Island Public Utilities Commission**, in *Re: New England Telephone*, 1475, on behalf of RI Bankers Association, filed August 11, 1987, cross-examination August 21, 1987.

Before the **New York State Public Service Commission**, in *Re: General Rate Case Subject to Competition*, 29469, on behalf of AMEX Co., Capital Cities/ ABNC, Inc., NBC, Inc., filed April 17, 1987, cross-examination May 20, 1987.

Before the **Minnesota Public Utilities Commission**, in *Re: Northwestern Bell*, P-421/ M-86-508, on behalf of MN Bus. Utilities Users Counsel, filed February 10, 1987, cross-examination March 5, 1987.

1986

Before the **Kansas Public Utilities Commission**, in *Re: Southwestern Bell*, 127, 140-U, on behalf of Boeing Military, et al., filed August 15, 1986.

1985

Before the **Washington Utilities and Transportation Commission**, in *Re: Cost of Service Issues bearing on the Regulation of Telecommunications Company*, on behalf of US Department of Energy, filed November 18, 1985 (Reply Comments).

1984

Before the **Maine Public Utilities Commission**, in *Re: New England Telephone*, 83-213, on behalf of Staff, ME PUC, filed February 7, 1984, cross-examination March 16, 1984.

Before the **Minnesota Public Service Commission**, in *Re: South Central Bell*, U-4415, on behalf of MS PSC, filed January 24, 1984, cross-examination February 1984.

1983

Before the **Kentucky Public Service Commission**, in *Re: South Central Bell*, 8847, on behalf of KY PSC, filed November 28, 1983, cross-examination December 1983.

Before the **Florida Public Service Commission**, in *Re: Southern Bell Rate Case*, 820294-TP, on behalf of Florida Department of General Services, FL Ad Hoc Telecommunications Users, filed March 21, 1983, cross-examination May 5, 1983.

1982

Before the **Maine Public Utilities Commission**, in *Re: New England Telephone*, 82-142, on behalf of Staff, ME PUC, filed November 15, 1982, cross-examination December 9, 1982.

Before the **Kentucky Public Service Commission**, in *Re: South Central Bell*, 8467, on behalf of the Commonwealth of Kentucky, cross-examination August 26, 1982.

Ms. Kravtin has also testified before a number of state legislative committees including the Ohio General Assembly Senate Select Committee on Telecommunications Infrastructure and Technology and the New Jersey Senate Transportation and Public Utility Committee.

Ms. Kravtin has conducted major studies in the areas of rate regulation, total factor productivity, cost of service, incentive regulation, network modernization, plant utilization, stranded investment, merger synergies, intercompany cost and benchmark price comparisons, embedded versus forward-looking investment, econometric demand and cost models, statistical market research, and cost allocation for ETI clients.

Ms. Kravtin has actively participated in a number of proceedings relating to the implementation of local competition in the telecommunications industry pursuant to

federal and state legislation, covering such topics as universal service, access charges, cost of basic service, interconnection, unbundling of network elements, pole attachment rates, and tariff development for new entrants. Ms. Kravtin has also participated in a number of proceedings related to electric utility restructuring, with emphasis on issues concerning the potential cross-subsidization of competitive ventures, including entry into telephony and cable, by monopoly ratepayers.

Ms. Kravtin has also been actively involved in the cable TV industry for more than a decade, researching changing market and technological trends and monitoring the integration of the cable and telecommunications industries. Ms. Kravtin has gained extensive cable television rate regulation expertise in connection with the implementation of the Cable Act of 1992 and the Telecommunications Act of 1996, by the Federal Communications Commission and local franchise authorities. As part of that work, she participated in significant economic studies on cable television rate regulation related to implementation of the Cable Act of 1992.

Ms. Kravtin has developed particular expertise regarding the potential entry into video and multi-media information service markets by local telephone companies and other new entrants. In the early to mid-1990's, Ms. Kravtin submitted numerous filings before the FCC and state commissions concerning the economics of video dial tone investment and VDT-related tariffs proposed by New Jersey Bell, Pacific Bell, Ameritech, Southern New England Telephone, US West, GTE, Bell Atlantic, BellSouth, NYNEX, Puerto Rico Telephone Company and Carolina Telephone in over 25 Section 214 Application proceedings. More recently, Ms. Kravtin has participated in studies evaluating telephone company deployment of xDSL technology in competition with the deployment of cable modems and other broadband alternatives.

Ms. Kravtin has authored and co-authored numerous papers and reports pertaining to these issues. These include the following:

“Building a Broadband America: The Competitive Keys to the Future of the Internet,” prepared for The Competitive Broadband Coalition, May 1999.

“Broken Promises: A Review of Bell Atlantic-Pennsylvania's Performance Under Chapter 30,” prepared for AT&T and MCI Telecommunications, June 1998.

“Analysis of Opportunities for Cross Subsidies Between GTA and GTA Cellular,” prepared for Guam Cellular and Paging, submitted to the Guam Public Utilities Commission, July 11, 1997.

“Reply to Incumbent LEC Claims to Special Revenue Recovery Mechanisms,” submitted in the Matter of Access Charge Reform in CC Docket 96-262, February 14, 1997.

“Assessing Incumbent LEC Claims to Special Revenue Recovery Mechanisms: Revenue opportunities, market assessments, and further empirical analysis of the ‘Gap’ between embedded and forward-looking costs,” submitted in CC Docket 96-262, January 29, 1997.

“Analysis of Incumbent LEC Embedded Investment: An Empirical Perspective on the ‘Gap’ between Historical Costs and Forward-looking TSLRIC,” Implementation of the Local Competition Provisions in the Telecommunications Act of 1996, submitted in FCC CC Docket 96-98, May 30, 1996.

“Reply to X-Factor Proposals for the FCC Long-Term LEC Price Cap Plan,” prepared for the Ad Hoc Telecommunications User Committee, submitted in FCC CC Docket 94-1, March 1, 1996.

“Establishing the X-Factor for the FCC Long-Term LEC Price Cap Plan,” prepared for the Ad Hoc Telecommunications User Committee, submitted in FCC CC Docket 94-1, December 1995.

“The Economic Viability of Stentor's ‘Beacon Initiative,’ exploring the extent of its financial dependency upon revenues from services in the Utility Segment,” prepared for Unitel, submitted as evidence before the Canadian Radio-television and Telecommunications Commission, March 1995.

“Fostering a Competitive Local Exchange Market in New Jersey: Blueprint for Development of a Fair Playing Field,” prepared for the New Jersey Cable Television Association, January 1995.

“The Enduring Local Bottleneck: Monopoly Power and the Local Exchange Carriers,” February 1994.

“A Note on Facilitating Local Exchange Competition,” prepared for E.P.G., November 1991.

“Testing for Effective Competition in the Local Exchange,” prepared for the E.P.G., October 1991.

“A Public Good/Private Good Framework for Identifying Policy Objectives for the Public Switched Network” prepared for the National Regulatory Research Institute, October 1991.

“Report on the Status of Telecommunications Regulation, Legislation, and modernization in the states of Arkansas, Kansas, Missouri, Nebraska, Oklahoma

and Texas,” prepared for the Mid-America Cable-TV Association, December 13, 1990.

“The U S Telecommunications Infrastructure and Economic Development,” presented at the 18th Annual Telecommunications Policy Research Conference, Airlie, Virginia, October 1990.

“An Analysis of Outside Plant Provisioning and Utilization Practices of US West Communications in the State of Washington,” prepared for the Washington Utilities and Transportation Commission, March 1990.

“Sustainability of Competition in Light of New Technologies,” presented at the Twentieth Annual Williamsburg Conference of the Institute of Public Utilities, Williamsburg, Virginia, December 1988.

“Telecommunications Modernization: Who Pays?,” prepared for the National Regulatory Research Institute, September 1988.

“Industry Structure and Competition in Telecommunications Markets: An Empirical Analysis,” presented at the Seventh International Conference of the International Telecommunications Society at MIT, July 1988.

“Market Structure and Competition in the Michigan Telecommunications Industry,” prepared for the Michigan Divestiture Research Fund Board, April 1988.

“Impact of Interstate Switched Access Charges on Information Service Providers - Analysis of Initial Comments,” submitted in FCC CC Docket No. 87-215, October 26, 1987.

“An Economic Analysis of the Impact of Interstate Switched Access Charge Treatment on Information Service Providers,” submitted in FCC CC Docket No. 87-215, September 24, 1987.

“Regulation and Technological Change: Assessment of the Nature and Extent of Competition From A Natural Industry Structure Perspective and Implications for Regulatory Policy Options,” prepared for the State of New York in collaboration with the City of New York, February 1987.

“BOC Market Power and MFJ Restrictions: A Critical Analysis of the ‘Competitive Market’ Assumption,” submitted to the Department of Justice, July 1986.

“Long-Run Regulation of AT&T: A Key Element of a Competitive Telecommunications Policy,” *Telematics*, August 1984.

“Economic and Policy Considerations Supporting Continued Regulation of AT&T,” submitted in FCC CC Docket No. 83-1147, June 1984.

Ms. Kravtin attended George Washington University on an Honor Scholarship where she received a B.A. with Distinction in Economics. She was elected to Phi Beta Kappa and Omicron Delta Epsilon in recognition of high scholastic achievement in the field of Economics. Ms. Kravtin is a member of the American Economic Association.

Exhibit ___ (MCK-1)

**BellSouth Florida Workpapers for
Home Run Copper Line Sharing Prices**

Bell South - Florida - Workpapers for Home Run Copper Line Sharing Pr

RESULTS SUMMARY USER VARIABLE INPUTS

Rate Element	Rate				
	Monthly Recurring	Non-Recurring			
		Install		Disconnect	
		1st	Additional	1st	Additional

Line Sharing on Copper

1. HBLS UNE	\$0.00	N.A.	N.A.	N.A.	N.A.
2. ILEC-Owned Splitter *	\$0.90	N.A.	N.A.	N.A.	N.A.
3. Place Jumper	N.A.	\$5.78	\$3.21	\$4.49	\$1.93
4. Remove Jumper	N.A.	\$1.93	N.A.	N.A.	N.A.

Note:

* This calculation is extremely conservative in that it includes a maintenance expense factor in the Annual Charge Factor (ACF) from the HAI model (based on ARMIS data) and an additional maintenance expense factor based on the judgement of our Subject Matter Experts for the labor required to maintain a splitter installation. Either factor would be reasonable, but inclusion of both is clearly conservative. The calculation also assumes an extremely conservative 5-year economic life with no salvage value. Assuming an 11 year economic life (the low end of the values for the Digital Circuit Equipment in the FCC's most recent depreciation order) the ILEC-Owned Splitter price becomes o \$0.62

User Variable Inputs

	Source
Common Cost Markup - Nonrecurring	5.1% Decision No. PSC-98-0604-FOF-TO, 4.29/98
Common Cost Markup - Recurring	5.1% Same as Nonrecurring
Percent Staffed COs	80% HBSNRCM
Tasks per Trip to Non Staffed CO	4 HBSNRCM
Estimated C.O. Technician Direct Labor Rate	\$36.64 HBSNRCM

Calculation of Price per ILEC Owned Splitter - 5 Year Splitter Economic Life

<u>Line</u>	<u>Description</u>	<u>Result</u>	<u>Source</u>
1	Equipped Splitter/Shelf Investment per Line	\$28.13	Bell Atlantic - New York Discovery Response, Case 98-C-1357 to RLI-BA-166
2	Splitter Shelf Capacity (lines)	96	Bell Atlantic - New York Discovery Response, Case 98-C-1357 to RLI-BA-166
3	Labor Rate	\$36.64	AT&T/MCI NonRecurring Cost Model
4	Splitter/Shelf Installation Hours	0.5	Engineering Subject Matter Expert Estimate
5	Installation Cost per Line	\$0.19	(Line 3 * Line 4) / Line 2
6	Installed Splitter Investment per Line	\$28.32	Line 1 + Line 5
7	Splitter ACF	0.2925	HAI Model Calculation (see note)
8	Splitter and Shelf Annual Cost per Line	\$8.28	Line 6 * Line 7
9	Splitter and Shelf Monthly Cost per Line	\$0.69	Line 8 / 12
10	Rack/Frame Monthly Cost per Shelf	\$1.23	Proxy from BA-NY, Case 98-C-1357, Workpaper Part N, Section 2, Page 1 of 1
11	Rack/Frame Monthly Cost per Line	\$0.01	Line 10 / Line 2
12	Land and Building Monthly Cost per Shelf	\$3.55	Proxy from BA-NY, Case 98-C-1357, Workpaper Part N, Section 2, Page 1 of 1
13	Land and Building Monthly Cost per Line	\$0.04	Line 12 / Line 2
14	Annual Maintenance and Repair Hours per Shelf	1	Engineering Subject Matter Expert Estimate
15	Annual Maintenance and Repair Expense per Shelf	\$36.64	Line 3 * Line 14
16	Monthly Maintenance and Repair Expense per Line	\$0.03	Line 15 / Line 2 / 12
17	Subtotal - Monthly Cost per line	\$0.77	Line 9 + Line 11 + Line 13 + Line 16
18	Fill Factor	0.9	Engineering Subject Matter Expert Estimate
19	Total Monthly Cost per Line with Fill Adjustment	\$0.86	Line 17 / Line 18
20	Price per Line	\$0.90	Line 19 * User Input Shared and Common Cost Factor

NOTE:

Splitter ACF assumes 5 year economic life with no salvage value, 10.01% overall cost of capital, 39% tax rate with 5% other taxes.

Calculation of Price per ILEC Owned Splitter - 11 Year Splitter Economic Life

<u>Line</u>	<u>Description</u>	<u>Result</u>	<u>Source</u>
1	Equipped Splitter/Shelf Investment per Line	\$28.13	Bell Atlantic - New York Discovery Response, Case 98-C-1357 to RLI-BA-166
2	Splitter Shelf Capacity (lines)	96	Bell Atlantic - New York Discovery Response, Case 98-C-1357 to RLI-BA-166
3	Labor Rate	\$36.64	AT&T/MCI NonRecurring Cost Model
4	Splitter/Shelf Installation Hours	0.5	Engineering Subject Matter Expert Estimate
5	Installation Cost per Line	\$0.19	(Line 3 * Line 4) / Line 2
6	Installed Splitter Investment per Line	\$28.32	Line 1 + Line 5
7	Splitter ACF	0.1899	HAI Model Calculation (see note)
8	Splitter and Shelf Annual Cost per Line	\$5.38	Line 6 * Line 7
9	Splitter and Shelf Monthly Cost per Line	\$0.45	Line 8 / 12
10	Rack/Frame Monthly Cost per Shelf	\$1.23	Proxy from BA-NY, Case 98-C-1357, Workpaper Part N, Section 2, Page 1 of 1
11	Rack/Frame Monthly Cost per Line	\$0.01	Line 10 / Line 2
12	Land and Building Monthly Cost per Shelf	\$3.55	Proxy from BA-NY, Case 98-C-1357, Workpaper Part N, Section 2, Page 1 of 1
13	Land and Building Monthly Cost per Line	\$0.04	Line 12 / Line 2
14	Annual Maintenance and Repair Hours per Shelf	1	Engineering Subject Matter Expert Estimate
15	Annual Maintenance and Repair Expense per Shelf	\$36.64	Line 3 * Line 14
16	Monthly Maintenance and Repair Expense per Line	\$0.03	Line 15 / Line 2 / 12
17	Subtotal - Monthly Cost per line	\$0.53	Line 9 + Line 11 + Line 13 + Line 16
18	Fill Factor	0.9	Engineering Subject Matter Expert Estimate
19	Total Monthly Cost per Line with Fill Adjustment	\$0.59	Line 17 / Line 18
20	Price per Line	\$0.62	Line 19 * User Input Shared and Common Cost Factor

NOTE:

Splitter ACF assumes 11 year economic life with no salvage value, 10.01% overall cost of capital, 39% tax rate with 5% other taxes.

Calculation of Jumper Work Costs For Home Run Copper Line Sharing Arrangements

Initial Task	a	install / migrate			disconnect / remove			
		b Probability	c Time (min)	d Rate (\$/hr)	e Cost	f Time (min)	g Rate (\$/hr)	h Cost
1 Pull and analyze order		100%	2.5	\$36.64	\$1.53			\$1.53
2 Travel to non-staffed CO		5%	20	\$36.64	\$0.61			\$0.61
3 Install one 2/4 wire cross connect on MDF to CFA		100%	4	\$36.64	\$2.44			N.A.
4 Remove one 2/4 wire jumper on MDF		100%	N.A.	\$36.64	N.A.	2	\$36.64	\$1.22
5 Close Order		100%	1.5	\$36.64	\$0.92			\$0.92
<i>total with overhead</i>					\$5.78			\$4.49
Additional								
Task		Probability	Time (min)	Rate (\$/hr)	Cost	Time (min)	Rate (\$/hr)	Cost
1 Pull and analyze order		100%	2.5	\$36.64	N.A.			N.A.
2 Travel to non-staffed CO		5%	20	\$36.64	\$0.61			\$0.61
3 Install one 2/4 wire cross connect on MDF to CFA		100%	4	\$36.64	\$2.44			N.A.
4 Remove one 2/4 wire jumper on MDF		100%	N.A.	\$36.64	N.A.	2	\$36.64	\$1.22
5 Close Order		100%	1.5	\$36.64	N.A.			N.A.
<i>total with overhead</i>					\$3.21			\$1.93

NOTES:

- a Tasks and task descriptions are provided by Engineering Subject Matter Experts.
- b Travel time probability is (1 - Percent of Staffed COs) / Tasks per Trip to Non Staffed CO from User Variable Inputs. Others are Engineering Subject Matter Expert Estimates.
- c All time estimates are provided by Engineering Subject Matter Experts
- d From User Variable Inputs.
- e Cost is Probability * Time(min) * (Rate(\$/hr)/60). Task Applicability determined by Engineering Subject Matter Experts.
- f All time estimates are provided by Engineering Subject Matter Experts
- g From User Variable Inputs.
- h Cost is Probability * Time(min) * (Rate(\$/hr)/60). Task Applicability determined by Engineering Subject Matter Experts.

Copy of BA-NY response to Rhythms discovery request RLI-BA-166, March 28,2000, Case 98-C-1357:				
Siecor Equipment	Part Number	Price	Capacity	Remarks
Frame Mounted *	BA Investment Data			
Fully Equipped ADSL POTS Splitter Shelf for Conventional MD	COSA16S1W001	\$ 450.00	16 lines	Cost per line \$28.13
Fully Equipped ADSL POTS Splitter Shelf for COSMIC MDF	COSA16S1W002	\$ 450.00	16 lines	Cost per line \$28.13
Splitter Cards w/ dc blocking	COSP00S10000	\$ 56.00	2 lines/card	
Splitter Cards w/o dc blocking	NA	\$ 56.00	2 lines/card	No part number available. Prototype in lab for testing
Rack Mounted				
ADSL POTS Splitter Shelf for Quad Cards	COSF00S2R008	\$ 500.00	96 lines	
Splitter Cards w/ dc blocking	COSP00S20000	\$ 91.67	4 lines/card	
Splitter Cards w/o dc blocking	COSP00S160000	\$ 91.67	4 lines/card	
Fully Equipped Splitter Shelf	COSF96S2R008	\$ 2,700.00	96 lines	Cost per line \$28.13
ADSL POTS Splitter Shelf for Octal Cards	COSG000S4R012	\$ 600.00	128 lines	
Splitter Cards w/ dc blocking	COSP00S40000	\$ 187.50	8 lines/card	
Splitter Cards w/o dc blocking	COSP00S60000	\$ 187.50	8 lines/card	
Fully Equipped Splitter Shelf	COSG128S4R012	\$ 3,600.00	128 lines	Cost per line \$28.13
*Frame mounted shelves are always sold fully equipped.				

Dimensions (HXWXD) inches
9.0 X 12.25 X 12.25
9.0 X 12.25 X 12.25
5.2 X 23.0 X 9.5
6.97 X 23 X 9.52

Exhibit ____ (MCK-2)

**GTE Florida Workpapers for
Home Run Copper Line Sharing Prices**

GTE - Florida - Workpapers for Home Run Copper Line Sharing Prices.xl

RESULTS SUMMARY USER VARIABLE INPUTS

Rate Element	Rate				
	Monthly Recurring	Non-Recurring			
		Install		Disconnect	
		1st	Additional	1st	Additional

Line Sharing on Copper

1. HBLS UNE	\$0.00	N.A.	N.A.	N.A.	N.A.
2. ILEC-Owned Splitter *	\$0.90	N.A.	N.A.	N.A.	N.A.
3. Place Jumper	N.A.	\$5.78	\$3.21	\$4.49	\$1.93
4. Remove Jumper	N.A.	\$1.93	N.A.	N.A.	N.A.

Note:

* This calculation is extremely conservative in that it includes a maintenance expense factor in the Annual Charge Factor (ACF) from the HAI model (based on ARMIS data) and an additional maintenance expense factor based on the judgement of our Subject Matter Experts for the labor required to maintain a splitter installation. Either factor would be reasonable, but inclusion of both is clearly conservative. The calculation also assumes an extremely conservative 5-year economic life with no salvage value. Assuming an 11 year economic life (the low end of the values for the Digital Circuit Equipment in the FCC's most recent depreciation order) the ILEC-Owned Splitter price becomes: \$0.62

User Variable Inputs

	Source
Common Cost Markup - Nonrecurring	5.1% Uses Bell South factor as a placeholder
Common Cost Markup - Recurring	5.1% Uses Bell South factor as a placeholder
Percent Staffed COs	80% HBSNRCM
Tasks per Trip to Non Staffed CO	4 HBSNRCM
Estimated C.O. Technician Direct Labor Rate	\$36.64 HBSNRCM - Uses FL Bell South labor Rate

Calculation of Price per ILEC Owned Splitter - 5 Year Splitter Economic Life

<u>Line</u>	<u>Description</u>	<u>Result</u>	<u>Source</u>
1	Equipped Splitter/Shelf Investment per Line	\$28.13	Bell Atlantic - New York Discovery Response, Case 98-C-1357 to RLI-BA-166
2	Splitter Shelf Capacity (lines)	96	Bell Atlantic - New York Discovery Response, Case 98-C-1357 to RLI-BA-166
3	Labor Rate	\$36.64	AT&T/MCI NonRecurring Cost Model
4	Splitter/Shelf Installation Hours	0.5	Engineering Subject Matter Expert Estimate
5	Installation Cost per Line	\$0.19	(Line 3 * Line 4) / Line 2
6	Installed Splitter Investment per Line	\$28.32	Line 1 + Line 5
7	Splitter ACF	0.2925	HAI Model Calculation (see note)
8	Splitter and Shelf Annual Cost per Line	\$8.28	Line 6 * Line 7
9	Splitter and Shelf Monthly Cost per Line	\$0.69	Line 8 / 12
10	Rack/Frame Monthly Cost per Shelf	\$1.23	Proxy from BA-NY, Case 98-C-1357, Workpaper Part N, Section 2, Page 1 of 1
11	Rack/Frame Monthly Cost per Line	\$0.01	Line 10 / Line 2
12	Land and Building Monthly Cost per Shelf	\$3.55	Proxy from BA-NY, Case 98-C-1357, Workpaper Part N, Section 2, Page 1 of 1
13	Land and Building Monthly Cost per Line	\$0.04	Line 12 / Line 2
14	Annual Maintenance and Repair Hours per Shelf	1	Engineering Subject Matter Expert Estimate
15	Annual Maintenance and Repair Expense per Shelf	\$36.64	Line 3 * Line 14
16	Monthly Maintenance and Repair Expense per Line	\$0.03	Line 15 / Line 2 / 12
17	Subtotal - Monthly Cost per line	\$0.77	Line 9 + Line 11 + Line 13 + Line 16
18	Fill Factor	0.9	Engineering Subject Matter Expert Estimate
19	Total Monthly Cost per Line with Fill Adjustment	\$0.86	Line 17 / Line 18
20	Price per Line	\$0.90	Line 19 * User Input Shared and Common Cost Factor

NOTE:

Splitter ACF assumes 5 year economic life with no salvage value, 10.01% overall cost of capital, 39% tax rate with 5% other taxes.

Calculation of Price per ILEC Owned Splitter - 11 Year Splitter Economic Life

<u>Line</u>	<u>Description</u>	<u>Result</u>	<u>Source</u>
1	Equipped Splitter/Shelf Investment per Line	\$28.13	Bell Atlantic - New York Discovery Response, Case 98-C-1357 to RLI-BA-166
2	Splitter Shelf Capacity (lines)	96	Bell Atlantic - New York Discovery Response, Case 98-C-1357 to RLI-BA-166
3	Labor Rate	\$36.64	AT&T/MCI NonRecurring Cost Model
4	Splitter/Shelf Installation Hours	0.5	Engineering Subject Matter Expert Estimate
5	Installation Cost per Line	\$0.19	(Line 3 * Line 4) / Line 2
6	Installed Splitter Investment per Line	\$28.32	Line 1 + Line 5
7	Splitter ACF	0.1899	HAI Model Calculation (see note)
8	Splitter and Shelf Annual Cost per Line	\$5.38	Line 6 * Line 7
9	Splitter and Shelf Monthly Cost per Line	\$0.45	Line 8 / 12
10	Rack/Frame Monthly Cost per Shelf	\$1.23	Proxy from BA-NY, Case 98-C-1357, Workpaper Part N, Section 2, Page 1 of 1
11	Rack/Frame Monthly Cost per Line	\$0.01	Line 10 / Line 2
12	Land and Building Monthly Cost per Shelf	\$3.55	Proxy from BA-NY, Case 98-C-1357, Workpaper Part N, Section 2, Page 1 of 1
13	Land and Building Monthly Cost per Line	\$0.04	Line 12 / Line 2
14	Annual Maintenance and Repair Hours per Shelf	1	Engineering Subject Matter Expert Estimate
15	Annual Maintenance and Repair Expense per Shelf	\$36.64	Line 3 * Line 14
16	Monthly Maintenance and Repair Expense per Line	\$0.03	Line 15 / Line 2 / 12
17	Subtotal - Monthly Cost per line	\$0.53	Line 9 + Line 11 + Line 13 + Line 16
18	Fill Factor	0.9	Engineering Subject Matter Expert Estimate
19	Total Monthly Cost per Line with Fill Adjustment	\$0.59	Line 17 / Line 18
20	Price per Line	\$0.62	Line 19 * User Input Shared and Common Cost Factor

NOTE:

Splitter ACF assumes 11 year economic life with no salvage value, 10.01% overall cost of capital, 39% tax rate with 5% other taxes.

Calculation of Jumper Work Costs For Home Run Copper Line Sharing Arrangements

Initial Task	a	install / migrate			disconnect / remove			
		b Probability	c Time (min)	d Rate (\$/hr)	e Cost	f Time (min)	g Rate (\$/hr)	h Cost
1	Pull and analyze order	100%	2.5	\$36.64	\$1.53			\$1.53
2	Travel to non-staffed CO	5%	20	\$36.64	\$0.61			\$0.61
3	Install one 2/4 wire cross connect on MDF to CFA	100%	4	\$36.64	\$2.44			N.A.
4	Remove one 2/4 wire jumper on MDF	100%	N.A.	\$36.64	N.A.	2	\$36.64	\$1.22
5	Close Order	100%	1.5	\$36.64	\$0.92			\$0.92
<i>total with overhead</i>					\$5.78			\$4.49

Additional							
Task	Probability	Time (min)	Rate (\$/hr)	Cost	Time (min)	Rate (\$/hr)	Cost
1	Pull and analyze order	100%	2.5	\$36.64	N.A.		N.A.
2	Travel to non-staffed CO	5%	20	\$36.64	\$0.61		\$0.61
3	Install one 2/4 wire cross connect on MDF to CFA	100%	4	\$36.64	\$2.44		N.A.
4	Remove one 2/4 wire jumper on MDF	100%	N.A.	\$36.64	N.A.	2	\$36.64
5	Close Order	100%	1.5	\$36.64	N.A.		N.A.
<i>total with overhead</i>				\$3.21			\$1.93

NOTES:

- a Tasks and task descriptions are provided by Engineering Subject Matter Experts.
- b Travel time probability is (1 - Percent of Staffed COs) / Tasks per Trip to Non Staffed CO from User Variable Inputs. Others are Engineering Subject Matter Expert Estimates.
- c All time estimates are provided by Engineering Subject Matter Experts
- d From User Variable Inputs.
- e Cost is Probability * Time(min) * (Rate(\$/hr)/60). Task Applicability determined by Engineering Subject Matter Experts.
- f All time estimates are provided by Engineering Subject Matter Experts
- g From User Variable Inputs.
- h Cost is Probability * Time(min) * (Rate(\$/hr)/60). Task Applicability determined by Engineering Subject Matter Experts.

Copy of BA-NY response to Rhythms discovery request RLI-BA-166, March 28,2000, Case 98-C-1357:				
Siecor Equipment	Part Number	Price	Capacity	Remarks
Frame Mounted *	BA Investment Data			
Fully Equipped ADSL POTS Splitter Shelf for Conventional MD	COSA16S1W001	\$ 450.00	16 lines	Cost per line \$28.13
Fully Equipped ADSL POTS Splitter Shelf for COSMIC MDF	COSA16S1W002	\$ 450.00	16 lines	Cost per line \$28.13
Splitter Cards w/ dc blocking	COSP00S10000	\$ 56.00	2 lines/card	
Splitter Cards w/o dc blocking	NA	\$ 56.00	2 lines/card	No part number available. Prototype in lab for testing
Rack Mounted				
ADSL POTS Splitter Shelf for Quad Cards	COSF00S2R008	\$ 500.00	96 lines	
Splitter Cards w/ dc blocking	COSP00S20000	\$ 91.67	4 lines/card	
Splitter Cards w/o dc blocking	COSP00S160000	\$ 91.67	4 lines/card	
Fully Equipped Splitter Shelf	COSF96S2R008	\$ 2,700.00	96 lines	Cost per line \$28.13
ADSL POTS Splitter Shelf for Octal Cards	COSG000S4R012	\$ 600.00	128 lines	
Splitter Cards w/ dc blocking	COSP00S40000	\$ 187.50	8 lines/card	
Splitter Cards w/o dc blocking	COSP00S60000	\$ 187.50	8 lines/card	
Fully Equipped Splitter Shelf	COSG128S4R012	\$ 3,600.00	128 lines	Cost per line \$28.13
*Frame mounted shelves are always sold fully equipped.				

Dimensions (HXWXD) inches
9.0 X 12.25 X 12.25
9.0 X 12.25 X 12.25
5.2 X 23.0 X 9.5
6.97 X 23 X 9.52

HOPPING GREEN SAMS & SMITH

PROFESSIONAL ASSOCIATION

ATTORNEYS AND COUNSELORS

123 SOUTH CALHOUN STREET

POST OFFICE BOX 6526

TALLAHASSEE, FLORIDA 32314

(850) 222-7500

FAX (850) 224-8551

FAX (850) 425-3415

Writer's Direct Dial No.

(850) 425-2313

May 5, 2000

GARY V. PERKO
MICHAEL P. PETROVICH
DAVID L. POWELL
WILLIAM D. PRESTON
CAROLYN S. RAEPPLE
DOUGLAS S. ROBERTS
D. KENT SAFRIET
GARY P. SAMS
TIMOTHY G. SCHOENWALDER
ROBERT P. SMITH
DAN R. STENGLE
CHERYL G. STUART
W. STEVE SYKES

OF COUNSEL
ELIZABETH C. BOWMAN

JAMES S. ALVES
BRIAN H. BIBEAU
RICHARD S. BRIGHTMAN
KEVIN B. COVINGTON
PETER C. CUNNINGHAM
RALPH A. DEMEO
WILLIAM H. GREEN
WADE L. HOPPING
GARY K. HUNTER, JR.
JONATHAN T. JOHNSON
LEIGH H. KELLETT
ROBERT A. MANNING
FRANK E. MATTHEWS
RICHARD D. MELSON
ANGELA R. MORRISON
SHANNON L. NOVEY
ERIC T. OLSEN

ORIGINAL

BY HAND DELIVERY

Blanca Bayó
Director, Records and Reporting
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, FL 32399

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Re: Docket Nos. 000500-TP and 000501-TP
Rhythms Arbitrations with GTE and BellSouth

Dear Ms. Bayó:

Enclosed for filing on behalf of Rhythms Links Inc. in the above dockets are the original and 20 copies of the testimony listed below. This testimony addresses the Phase I issues identified in Rhythms' petitions for arbitration and its pending motion to bifurcate and expedite proceedings.

- 1. Direct testimony of Terry Murray, Richard Cabe and Patricia Kravtin 05675-00
- 2. Direct testimony of Scott Bonney 05676-00
- 3. Direct testimony of Joseph Riolo and John Donavan 05677-00

AFA
APP
CAF
CMW
CTR
EAG
LEG
MAS
OPC
RRR
SEC
WAW
JTH

Although no schedule has yet been established for these cases, Rhythms is filing its Phase I direct testimony at this time to avoid any delay that might result from filing at a later date.

Rhythms has a pending motion to consolidate these two dockets which is not opposed by any party; however, the Commission has not yet ruled on that motion.

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Max
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Blanca Bayó
May 5, 2000
Page 2

Because Rhythms is pursuing similar arbitrations in a number of states, and because no schedule has yet been established for many of these proceedings, including Florida, Rhythms is filing two pieces of testimony (Murray/Cabe/Kravtin and Riolo/Donavan) that have multiple sponsors. Depending on the final hearing date and the witnesses' schedules, one of the joint sponsors will present the testimony at hearing.

By copy of this letter, this testimony has been served on the parties on the attached service list. If you have any questions regarding this filing, please call.

Very truly yours,



Richard D. Melson
Attorneys for Rhythms Links Inc.

RDM/mee

Enclosures
cc: Certificate of Service

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a copy of the foregoing was served this 5th day of May, 2000, on the following:

Nancy White
c/o Nancy Sims
BellSouth Telecommunications, Inc.
150 South Monroe St.
Suite 400
Tallahassee, FL 32301

By Hand Delivery

Kimberly Caswell
GTE Florida Incorporated
One Tampa City Center
201 North Franklin Street
FLTC0007
Tampa, Florida 33601-0110

By Federal Express

Tim Vaccaro
Division of Legal Services
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, FL 32399

By Hand Delivery

Patty Christensen
Division of Legal Services
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, FL 32399

By Hand Delivery



Attorney