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**BEFORE THE RHODE ISLAND PUBLIC UTILITIES
COMMISSION**

DIRECT TESTIMONY OF WILLIAM E. TAYLOR

ON BEHALF OF

VERIZON RHODE ISLAND

DOCKET NO. 3550

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Public Version

1 **I. INTRODUCTION**

2 **A. Background and Qualifications**

3 Q. Please state your name, occupation and business address.

4 A. My name is William E. Taylor. I am Senior Vice President of National Economic
5 Research Associates, Inc. (“NERA”), head of its telecommunications economics
6 practice, and head of its Cambridge office. My business address is One Main Street,
7 Cambridge, Massachusetts 02142.

8 Q. Please summarize your qualifications.

9 A. I have been an economist for over twenty-five years. I received a B.A. degree in
10 economics (Magna Cum Laude) from Harvard College in 1968, a master’s degree in
11 statistics from the University of California at Berkeley in 1970, and a Ph.D. in
12 Economics from Berkeley in 1974, specializing in industrial organization and
13 econometrics. I have taught and published research in the areas of microeconomics,
14 theoretical and applied econometrics, and telecommunications policy at academic
15 institutions (including the economics departments of Cornell University, the Catholic
16 University of Louvain in Belgium, and the Massachusetts Institute of Technology) and
17 at research organizations in the telecommunications industry (including Bell
18 Laboratories and Bell Communications Research, Inc.). I have testified on
19 telecommunications economics before numerous state regulatory authorities, the
20 Federal Communications Commission, the Canadian Radio-Television and

1 Telecommunications Commission, the New Zealand Commerce Commission, federal
2 and state congressional committees and courts. I have appeared before this
3 Commission recently in Docket Nos. 3179, 2681 and 2370 regarding costs and prices
4 for network services and incentive regulation.

5 A copy of my vita listing publications and testimonies is attached to my testimony.

6 **B. Purpose of the Testimony**

7 Q. What is the purpose of your testimony?

8 A. I have been asked by Verizon Rhode Island (“Verizon RI”) to provide estimates of the
9 likely number of additional hot cut requests (in addition to current levels) that Verizon
10 RI will experience if: (a) the Commission finds that CLECs would not be impaired
11 without access to “mass market” unbundled local switching, and (b) as a result, UNE-P
12 is eliminated as an option for competitors providing local exchange service to end-user
13 customers in Rhode Island. In other Verizon testimony, these estimates of incremental
14 hot cut volumes are used as the input to a model assessing the “scalability” of the hot
15 cut process.

16 The estimates are conservative in that if they err, they err on the side of overestimating
17 the hot cut demand that Verizon RI would face in a post-UNE-P environment. This is
18 true for several reasons that will be discussed in greater detail below, but two reasons in
19 particular should be noted here.

20 First, for purposes of my analysis, I have assumed that UNE-P will be eliminated on a
21 statewide basis, even though under the *Triennial Review Order* impairment standards,

1 determinations for mass-market local switching will be made on a “market area” basis
2 and the Commission may ultimately conclude that CLECs would be impaired in some
3 market areas but not others. In such a case, the number of incremental hot cuts would
4 be less than that estimated in this testimony.

5 Second, some CLECs may, upon the elimination of UNE-P, migrate to non-UNE-L
6 alternatives such as resale or (particularly in the case of cable companies) may choose
7 to provide their own switching and loop facilities. Hot cuts would not be required for
8 migrations from Verizon RI to any of these alternatives.

9 **C. Summary of Main Conclusions**

10
11 Q. Please summarize your conclusions.

12 A. In the current environment, certain changes that customers and carriers make regarding
13 local service provisioning result in hot cut requests to Verizon RI or require that Verizon
14 RI perform loop-related work when dial tone is to be migrated to a Verizon RI switch,
15 *i.e.*, a winback situation. Under the terms of the *Triennial Review Order*, that
16 environment may change. If the Commission determines that CLECs would not be
17 impaired in some markets if Verizon RI stops offering local switching as a UNE, then
18 two things will happen:

- 19 • Some customer or carrier-initiated changes that did not require a hot cut in the past
20 may require a hot cut in the post-UNE-P environment, and
- 21 • Some portion of the current embedded base of UNE-P customers may be migrated
22 over time to UNE-L service and that migration will also require additional hot cuts.

1 For both of these reasons, the volume of hot cut requests to Verizon RI can be expected
2 to increase in a post-UNE-P world.

3 Q. Please describe the changes in demand for hot cuts that would be expected in a post-
4 UNE-P world as a result of customer-initiated carrier changes.

5 A. In the post-UNE-P world, many CLECs may substitute UNE-L for UNE-P
6 arrangements for serving their customers, and subsequent migrations of customers
7 between such UNE-L CLECs (or from Verizon RI to a UNE-L CLEC) would require
8 hot cuts. However, as noted above, some CLECs may choose to resell Verizon RI's
9 retail service or use their own loop and switch facilities, and migrations between such
10 CLECs and Verizon RI's retail service would not require hot cuts. Thus, a
11 "conservative" (in the sense of biased toward overstatement) estimate of the
12 incremental hot cut requests that Verizon RI will face in a post-UNE-P world is given
13 by a forecast of the flow of requests processed by Verizon RI for migrations between
14 UNE-P CLECs and migrations from Verizon RI's retail service to a UNE-P CLEC.
15 Similarly, the migration of customers from CLECs' UNE-P service to Verizon RI
16 provides an estimate of the incremental demand for winbacks.

17 Q. Why does the approach described above result in a conservative estimate of incremental
18 hot cut (and winback) activity resulting from the elimination of UNE-P?

19 A. Aside from the reasons already discussed, there are several additional reasons why these
20 measures based on current migration activity result in conservative estimates for
21 incremental hot cut and winback activity in a post-UNE-P world.

1 First, increased intermodal competition for traditional wireline telephone service means
2 that an increased number of customers who are dissatisfied with their wireline provider,
3 or who simply prefer the functionalities that alternative technologies might offer, will
4 migrate to non-wireline substitutes, primarily wireless, cable, and Internet telephony.
5 All else equal, the growth of these substitutes will reduce the proportion of hot cut
6 requests and winbacks associated with a given level of wireline customer churn. In this
7 case many customers might leave Verizon RI in the future, but fewer of them will
8 migrate to a wireline competitor. Hence, the number of hot cuts associated with those
9 migrations will fall.

10 Second, the increased offering of bundled communications services by all providers
11 (ILECs, CLECs, wireless and cable) has the effect of reducing customer churn, all else
12 equal. Intuitively, bundling reduces churn because a customer that buys a package of
13 services must then compare competitors' offerings of multiple services before deciding
14 to switch suppliers. In addition, by offering a selection of bundled services, a firm can
15 more closely match the idiosyncratic preferences of individual customers than if it
16 offered all services à la carte at constant prices. All of the major communications
17 suppliers (ILECs, CLECs, wireless and cable companies) are increasingly emphasizing
18 their packaged offerings, often explicitly for the purpose of reducing customer churn.
19 See Exhibit I for examples of bundled offerings.

20 Industry analysts estimate that the reduction in churn from bundling services is
21 significant. For example, monthly churn rates for standalone local and long distance
22 service are estimated to be 3.7 and 4.4 percent per month, respectively. However, when

1 the services are bundled together, the churn rate is 3.1 percent, a reduction of almost a
2 quarter from the average standalone rate¹. Higher churn reductions are observed when
3 more services are added to the bundle.

4 Q. What other factors could contribute to an increase in demand for hot cuts that would be
5 expected in a post-UNE-P world?

6 A. The second component of the incremental demand for hot cuts would be the transition
7 of the embedded base of CLEC UNE-P subscribers to UNE-L pursuant to the *Triennial*
8 *Review Order*. I refer to this component of the incremental hot cut demand as “carrier-
9 initiated” service changes, since it would be independent of consumer choice. (The
10 consumer would purchase services from the same carrier as before and would
11 essentially be unaware of the process or the change.) Subject to the requirements of the
12 *Triennial Review Order* (see FCC Rule 319(d)(2)(iv)), it would be the carrier’s decision
13 — not the end-user customer’s — when and how to migrate their customer onto the
14 CLEC switch.

15 Q. Will the embedded-base conversion requirement give rise to a continuing increment of
16 the hot cut demand that Verizon RI would be required to handle?

17 A. No. The *Triennial Review Order* requires that the conversion be completed within 27
18 months from a state commission’s finding of non-impairment. Thus, the embedded
19 base conversion would increase Verizon RI’s hot cut demand for only a limited period.

¹ Jeff Halpern and Gil Luria, “RBOCs: Consumer Bundling Shifts from a Liability to an Asset,” Bernstein Research Weekly Notes (August 9, 2002) (hereafter cited as “Halpern & Luria”).

1 The long term increase in hot cut demand would be due solely to customer-initiated
2 changes in local service providers, as discussed above.

3 Q. How did you estimate the total number of UNE-P lines that will constitute the
4 “embedded base” that will need to be migrated to UNE-L facilities pursuant to the
5 *Triennial Review Order*?

6 A. The methodology, described in greater detail below in Section III, provides a
7 conservative measure of the incremental hot cut demand resulting from the embedded
8 base conversion.

9 This is true because not all carriers will choose to provision all of their former UNE-P
10 customers with UNE-L; some carriers may drop customers, migrate customers to resale,
11 or — as suggested by a recent statement of AT&T² — may seek to negotiate a
12 commercial arrangement for the purchase of a UNE-P-like service from Verizon at a
13 market price, if and when Verizon chooses to offer such a service. Each of these
14 alternatives will reduce the potential number of hot cuts below the current and projected
15 future volume of UNE-P lines.

16 Q. Would the size of the embedded base be materially affected by the fact that CLECs
17 would be permitted to continue ordering UNE-P for as long as five months after a
18 finding of non-impairment by the Commission, pursuant to FCC Rule 319(d)(2)(iv)?

² See “AT&T CEO Urges End of Civil War With Bells” (Reuters September 15, 2003) (“Chief Executive Dave Dorman argued that the four dominant local telephone carriers should stop fighting regulations that require them to share their networks at government-mandated wholesale prices, and instead should work out commercial contracts to provide access to promote competition.”).

1 A. No. There is no evidence to suggest that CLEC UNE-P line growth over that period
2 would be materially impacted by this fact. Although the 5-month period could lead
3 CLECs to offer discounts or special promotions to induce customers to switch to a
4 UNE-P-based service with the expectation of migrating them to UNE-L as part of the
5 conversion of the embedded base, there is no clear evidence that this two-step migration
6 would be less expensive for the CLEC or less potentially disruptive for the customer.
7 This suggests that CLECs would likely choose to place customers directly on UNE-L
8 facilities once their own local switching arrangements are established. Indeed, the FCC
9 suggested this, albeit in a slightly different context, in the *Triennial Review Order*:

10 Once competitive carriers have incurred the fixed costs associated with
11 deploying their own switching facilities to support one-third of their
12 customers, we find it likely that such carriers will have an incentive to fill
13 the capacity of their switch such that they will not necessarily need the full
14 three years to complete the migration — assuming, of course, that the
15 incumbents can successfully manage the cutover process. (*Triennial*
16 *Review Order* ¶ 532 n.1630)

17 Q. How can the monthly hot cut demand due to conversion of the embedded base be
18 determined based on the total size of that embedded base?

19 A. Under the rules promulgated pursuant to the *Triennial Review Order* (see FCC Rule
20 319(d)(2)(iv)), CLECs must place orders to migrate 1/3 of the customers in the
21 embedded base from UNE-P by 13 months from the date the Commission finds no
22 impairment, half of the remainder (*i.e.*, a second 1/3 of the customers comprising the
23 embedded base) 20 months from that date, and all of the final remainder (*i.e.*, the last
24 1/3 of the customers) by 27 months from that date. The scheduling of the conversion is

1 to be determined by negotiation between Verizon and the CLEC, and the negotiated
2 conversion plan is to be submitted to the Commission.

3 There is a great deal of “play in the joints” of this schedule. For example, a schedule
4 could call for the conversion of all customers by the end of month 13 (or earlier) and
5 still be consistent with the FCC’s requirements. Moreover, since the 1/3—1/3—1/3
6 schedule applies to customers, not lines, even a uniform, pro-rata conversion schedule
7 by customers could result in a schedule that is front- or back-loaded by lines.

8 For purposes of this analysis, I assume a uniform, pro-rata conversion (on an access line
9 basis) of each 1/3 of the embedded customer base within the time made available for
10 that conversion by the FCC’s rules. I also conservatively assume that the conversion of
11 the first 1/3 of the base will begin not at the time of the non-impairment finding, but at
12 the time of submission of the negotiated conversion plan to the Commission — *i.e.*, two
13 months from the Commission’s non-impairment determination (*see* FCC Rules
14 319(d)(2)(iv) & 319(d)(2)(iv)(B)). This means that the period available for the
15 conversion of the first 1/3 will be 11 months instead of 13.

16 This assumption of a pro rata conversion is based on two considerations. First, CLECs
17 have mixed incentives regarding front-loading or back-loading the conversions. As the
18 FCC observed, the fact that the CLEC has already incurred the fixed cost of purchasing
19 and installing its switch suggests an incentive to fill it to capacity as quickly as possible.
20 On the other hand, the CLEC would benefit from postponing the incurrence of the non-
21 recurring costs of collocation and hot cuts as long as possible. The assumption of
22 uniform conversion is thus a reasonable middle ground. Second, and more important,

1 the detailed schedule is subject to negotiation and, implicitly, to some form of dispute
2 resolution. This means that the CLECs' desires concerning front-loading or back-
3 loading will not be dispositive, and that appropriate weight will be given to the
4 operational advantages of a pro rata conversion, which would result in reducing Verizon
5 RI's need to temporarily increase its work force to handle "peak loading."

6 **II. FACTORS AFFECTING HOT CUT DEMAND IN A POST UNE-P**
7 **REGULATORY ENVIRONMENT**

8 **A. Incremental Demand Resulting from Customer-Initiated Changes in**
9 **Service Providers**

10 Q. How would the volume of hot cuts that Verizon RI would be required to handle be
11 affected if UNE-P were no longer available to CLECs?

12 A. Today, when a CLEC orders UNE-P service to migrate a Verizon RI retail customer to
13 its own retail service, Verizon RI does not perform a hot cut. Nor is a hot cut required
14 if a customer switches between UNE-P CLECs or from a UNE-P CLEC to Verizon RI.
15 (A hot cut would be required, however, for a migration between a UNE-P CLEC and a
16 UNE-L CLEC.) Nor is a hot cut required when a customer switches between Verizon
17 RI and a CLEC providing resold Verizon RI service or between two CLECs providing
18 resold Verizon RI service. Similarly, a hot cut is not required when a customer
19 migrates between a resale-based and a UNE-P-based CLEC or when a CLEC changes
20 its wholesale service to UNE-P from resale (or vice-versa). In all of those cases (*i.e.*, all
21 of the cases where a hot cut is not required), Verizon RI remains the switch provider.

22 Essentially, a hot cut (or work associated with a winback) need be performed only if a
23 customer's choice of service provider entails a change in the switch providing dial tone

1 to the retail customer. (To be precise, a switch change is a necessary but not sufficient
2 condition for requiring a hot cut). A necessary and sufficient condition is that the
3 transaction requires a change in the switch that provides dial tone but no change in the
4 loop. A change in both the loop and switch that serves the customer — such as would
5 be expected for migration to or from a facilities-based or intermodal service provider —
6 requires (from the perspective of frame work and coordination) the same task as a new
7 connection or disconnection — not a hot cut. Coordination is unnecessary because the
8 loop and switch that will serve the customer can be provisioned while the old
9 arrangement is still in place.

10 If UNE-P were eliminated, however, CLECs would have to migrate to other forms of
11 provisioning local service to their customers, and to the extent that they migrate to
12 UNE-L (rather than switching to resale or fully-facilities-based provisioning), additional
13 hot cuts would be required that were not required in a UNE-P world. Hot cuts would be
14 required for retail-to-UNE-L migrations and for UNE-L-to-UNE-L migrations. Work is
15 also necessary for winbacks, *i.e.*, UNE-L to Verizon switch migrations. In these cases,
16 the end user would be changing switch providers but not the loop provider (which
17 would remain Verizon RI).

18 Q. Please describe the flow of hot cut requests that Verizon receives under the current
19 rules, *i.e.*, where UNE-P is an available competitive provisioning alternative.

20 A. Currently, the flow of hot cuts is equal to the flow of migrations involving UNE-L
21 CLECs, excluding those winbacks that for operational reasons may have to be
22 provisioned through disconnect/reconnect activity rather than hot cuts. Volumes of hot

1 cuts, therefore, depend to a large extent on customer “churn” — the fraction of
2 customer lines that change local service suppliers in a given month. The number of hot
3 cuts is not equal to customer churn, however, for three key reasons:

- 4 • Some Verizon RI retail customers move out of Verizon RI’s serving territory, or
5 discontinue service for other reasons (death, non-payment, etc.).
- 6 • Some Verizon retail RI customers switch to providers of wireless service or cable
7 telephony or voice-over-Internet services, or to other facilities-based CLECs.
- 8 • Some Verizon RI retail customers switch to CLEC UNE-P or CLEC resale services.

9 Each of these three types of migrations is counted as churn from Verizon RI retail
10 service’s perspective, but none of them results in hot cuts.

11 Currently, the volume of hot cuts is approximately equal to the number of lines
12 migrating from Verizon RI’s retail service to the retail service offered by a CLEC using
13 UNE-L, plus the portion of the lines that Verizon wins back from a CLEC using UNE-
14 L.

15 Q. Are there any other circumstances in which Verizon RI performs a hot cut under the
16 current rules?

17 A. Yes. These relate to migration of customers from one CLEC to another and to changes
18 in the way that a CLEC decides to provide service to its customers. However, in both
19 cases, the volume of hot cut requests generated is likely to be small.

20 First, when a CLEC customer served by UNE-L migrates to another CLEC using UNE-
21 L, Verizon RI must rearrange the access line from the collocation space of one CLEC to
22 that of another.

1 Second, when a CLEC resale customer migrates to a CLEC (different or the same)
2 using UNE-L, Verizon RI must perform a hot cut because the identity of the switch
3 provider changes from Verizon RI to the CLEC.

4 Third, when a customer of a UNE-P CLEC migrates to a UNE-L CLEC (different or the
5 same), Verizon RI must perform a hot cut.

6 Table 1 shows all customer migrations that generate hot cuts under the current rules
7 (*i.e.*, where UNE-P is available).

8 **Table 1**

9 **Customer Migrations Generating Hot Cuts Under Current Rules**

FROM\TO	Verizon Retail	CLEC FB	CLEC UNE-L	CLEC UNE-P	CLEC Resale
Verizon Retail			X		
CLEC FB					
CLEC UNE-L	W		X	W	W
CLEC UNE-P			X		
CLEC Resale			X		

10
11 Q. Please explain Table 1.

12 A. The table shows the Verizon RI work requirements for conversions from the
13 provisioning alternatives shown in the row headings to the provisioning alternatives
14 shown in the column headings. (Thus, the first cell in the row headed “CLEC UNE-L”
15 relates to migrations from UNE-L CLECs (the row) to Verizon RI retail (the column).)
16 “FB” refers to facilities-based provisioning, which, for purposes of this table, means a
17 CLEC that uses its own loop and switch. An “X” indicates an ordinary hot cut, and a
18 “W” indicates a winback.

1 The first thing that should be noted is that the Table (considered as a matrix) is
2 symmetric about its main diagonal (from upper-left to lower-right), except that the Ws
3 and Xs are reversed. Symmetry reflects the fact that some form of hot cut is required
4 whenever the ownership of the switch supplying dial tone to the customer changes. The
5 exchange of Ws and Xs across the main diagonal simply follows the change in switch
6 ownership: changes to a Verizon RI switch represent winbacks while changes to a
7 CLEC switch represent ordinary hot cuts.

8 Second, migrations from (or to) CLEC A's UNE-L service to (or from) CLEC B's
9 UNE-P-based or resale-based service may be generated by a customer's decision to
10 change carriers (so that CLEC B serves the customer and purchases UNE-P or resale) or
11 by CLEC A's decision to change the method by which it serves its customer. In both
12 cases, a loop that terminates (ultimately) on CLEC A's switch is effectively shifted to
13 terminate on Verizon RI's switch.

14 Finally, migrations from CLEC UNE-L to CLEC UNE-L presumably involve a
15 customer's decision to change suppliers. Such a change entails a change in the switch
16 supplying dial tone to the customer and thus requires a hot cut if the same loop is used.

17 Q. Please describe the factors that will impact the volume of hot cuts that Verizon RI will
18 likely perform if Verizon RI is no longer required to provide local switching on an
19 unbundled basis.

20 A. If switching is eliminated as a UNE, CLECs would no longer be able to provision
21 service using UNE-P, except to the extent that, as mentioned above, Verizon chooses to
22 make a UNE-P-like service available at market-based rates and on a commercial basis.

1 Some CLECs would then likely provision service to some customers using UNE-L, so
2 that Verizon RI would need to perform additional hot cuts, over and above the flow of
3 hot cuts performed today under current rules. Table 2 illustrates the demand for hot
4 cuts and winbacks assuming that all current UNE-P requests are treated instead as
5 UNE-L requests. The organization of this Table and the abbreviations used are the
6 same as for Table 1.

7 **Table 2**

8 **Customer Migrations Generating Hot Cuts in the Post-UNE-P Environment**

FROM\TO	Verizon Retail	CLEC FB	CLEC UNE-L	CLEC UNE-P	CLEC Resale
Verizon Retail			X	X	
CLEC FB					
CLEC UNE-L	W		X	X	W
CLEC UNE-P	W		X	X	W
CLEC Resale			X	X	

9
10 Q. Please explain Table 2.

11 A. In this table, CLEC UNE-P denotes customers previously served by UNE-P that would
12 be served by UNE-L in the new environment. Hence, the rows (and columns)
13 associated with CLEC UNE-L and CLEC UNE-P are identical. The matrix exhibits the
14 same symmetry as in the previous table for the same reasons.

15 Q. Based on these matrices, how can we calculate the additional demand for hot cuts that
16 would be brought about by a decision to eliminate UNE-P as a competitive provisioning
17 alternative?

18 A. The incremental demand for hot cuts would be the difference between the hot cuts
19 performed under current rules (Table 1) and the hot cuts that would be performed if

switching were eliminated (Table 2). Thus, additional hot cut demand could be calculated simply by subtracting each entry in Table 1 from the corresponding entry in Table 2. This is done in Table 3, below.

Table 3
Customer Migrations Generating Incremental Hot Cuts in the Post-UNE-P Environment

FROM\TO	Verizon Retail	CLEC FB	CLEC UNE-L	CLEC UNE-P	CLEC Resale
Verizon Retail				X(1)	
CLEC FB					
CLEC UNE-L				X(2)	
CLEC UNE-P	W(1)		X(2)	X(3)	W(4)
CLEC Resale				X(4)	

Q. Please explain Table 3.

A. This incremental hot cut matrix exhibits the same symmetry as the previous matrices: the difference between two symmetric matrices obviously must also be symmetric. Because the only difference we consider is the availability of UNE-P, the only entries in this matrix are in the UNE-P rows or columns. Thus, other types of frame work (e.g., connects and disconnects) do not appear in Table 3, despite the fact that these types comprise the bulk of current frame work. While disconnects and connects are important, they (i) are not hot cuts and do not require the coordination of a hot cut and (ii) their volume is unchanged by the potential reclassification of UNE-P as UNE-L. They thus do not figure in our analysis of Verizon RI's incremental work requirements.

Q. What is meant by Categories (1) – (4) in the key to Table 3?

1 A. These four categories of migrations identify all of the circumstances in which
2 migrations can lead to incremental hot cuts.

3 Category 1: CLEC UNE-P from/to Verizon Retail: These migrations do not require a
4 hot cut under the current regime because they involve no change in the ownership of the
5 switch providing dial tone. In the post-UNE-P world, the migration may require a
6 change in switch provider.

7 Category 2: CLEC UNE-P from/to CLEC UNE-L: Under the current regime, this
8 migration requires a hot cut or involves a winback. In the current data, there are few
9 transactions in these cells. However, in the future, the migration of the embedded base
10 will obviously generate a large number of transactions in the CLEC UNE-P to CLEC
11 UNE-L cell during the limited transitional period.

12 Category 3: CLEC UNE-P from/to CLEC UNE-P: Currently, customer migrations
13 between CLECs using UNE-P do not require any form of hot cut. Post-UNE-P, they
14 may require a hot cut.

15 Category 4: CLEC resale from/to CLEC UNE-P: Under the current regime, these
16 migrations do not require any form of hot cut because the Verizon RI switch is used in
17 both cases. Post-UNE-P, a hot cut or winback will be required, since the UNE-L
18 customer will be served from the CLEC switch and the resale customer will be served
19 from Verizon's switch.

20 Q. Quantitatively, how do the number of transactions in the numbered cells above
21 compare?

1 A. The bulk of hot cut demand stemming from customer migration should occur in
2 Category (1), for two reasons. First, the ILEC's market share — which is currently a
3 majority of the market — implies that a large fraction of migrations should occur to and
4 from Verizon RI's retail service. Second, a large proportion of CLEC provisioning uses
5 their own facilities (62.1%), and those migrations do not involve hot cuts. A large
6 fraction of the remaining migrations involving hot cuts will occur to and from CLEC
7 UNE-based services. In December 2002, 30.4 percent of those CLEC access lines were
8 CLEC UNEs; 62.1 percent were CLEC facilities-based and 7.5 percent were CLEC
9 resale. (FCC Local Competition Survey, Status as of December 31, 2002, Table 10.)

10 Thus, the current distribution of local competition arrangements is disproportionately
11 weighted towards Category (1) — migrations between Verizon RI's retail service and
12 CLEC UNE-P and UNE-L services. If this distribution remains stable over time, we
13 would expect future migrations to mirror the current distribution, and a large fraction of
14 migrations will fall into Category (1).

15 This effect can be illustrated using publicly available, statewide data (*i.e.*, the FCC data
16 for Rhode Island) to obtain an estimate of the number of incremental hot cuts that a
17 given migration of customers would produce. I start with a base case in which the
18 markets are stable and migration is uniform across customers, and I will assume that the
19 migrations are randomly distributed, in the sense that they will not depend on the type
20 of service (UNE-L, UNE-P, resale, etc.) provided by their old or new service providers.
21 In this case, if 1,000 Rhode Island customer lines were to change suppliers in a given

1 time period, on average 784 of the migrations would be by the ILECs' customers and
2 216 would be by the customers of some CLEC.

3 Of the 784 lines lost by the incumbent, approximately 239 (0.3043×784) would
4 migrate to CLEC UNE-L and UNE-P. These 239 migrations would thus fall into
5 Category (1) above. The remaining 545 lines would have no effect on incremental hot
6 cuts because they would migrate to facilities-based CLECs ($487 = 0.6209 \times 784$) and
7 resale-based CLECs ($59 = 0.0748 \times 784$).

8 Of the 216 migrations associated with CLEC customers, approximately 66 ($216 \times$
9 0.3043) are initially served on UNEs, 134 (216×0.6209) on a CLEC facilities basis and
10 16 (216×0.0748) on resale. Based on current market shares, 78.4 percent of each of
11 these migrations would go to the ILEC. The remaining 21.6 percent would be
12 distributed across the three "flavors" of CLEC service (UNE, facilities-based, and
13 resale) in the current proportions of 30.4, 62.1 and 7.5 percent respectively. The
14 resulting classification of migrations is shown in Table 4.

15 **Table 4**

16 **Number of Migrations by Type**

FROM\TO	Incumbent Retail	CLEC FB	CLEC UNE-P/ UNE-L	CLEC Resale	Total
Incumbent Retail		486.6	238.5	58.6	783.7
CLEC FB	105.2	18.0	8.8	2.2	29.0
CLEC UNE-P/L	51.6	8.8	4.3	1.1	14.2
CLEC Resale	12.7	2.2	1.1	0.3	3.5

17

18 Q. How should Table 4 be interpreted?

1 A. Table 4 shows the expected migrations, by cells, stemming from a uniform migration of
2 1,000 customer lines. Recall that Table 3 identifies the cells in which hot cuts (and
3 winbacks) qualify as incremental hot cuts and places them in four categories. Adding
4 together the migrations in Table 4 for the cells that comprise Category (1) in Table 3,
5 for example, would give $51.6 + 238.5 = 290.1$ migrations that would (ordinarily)
6 produce hot cut requests. Noting that only about half the migrations that correspond to
7 winbacks actually require hot cuts, we would add 238.5 to half of 51.6 (25.8) to get
8 264.3 expected incremental hot cuts in Category (1). A similar calculation applies to
9 Category (4). For the combined Categories (2) and (3), we observe in Table 4, 4.3
10 migrations, which are the sum of two hot cut categories and two potential winback
11 categories. Assuming the flows between UNE-P and UNE-L to be symmetric, the 4.3
12 migrations would give rise to 4.3×0.75 , or 3.2 hot cuts and winbacks.

13 Putting these calculations together in Table 5, we observe that in the current market in
14 Rhode Island (and assuming a stable market and uniform customer migration), a
15 customer migration has only about a 27 percent chance of leading to a direct hot cut or
16 winback. Moreover, only a portion of those migration-related hot cuts would be
17 incremental to current hot cut volumes. This portion can be determined by multiplying
18 the total migration-related hot cuts by the percentage of the unbundled loops in Verizon
19 territory that are part of a UNE-P arrangement (*i.e.*, that are not being provided as UNE-
20 L).

21 **[BEGIN VERIZON PROPRIETARY]**

22

23 **[END VERIZON PROPRIETARY]**

1 Q. How should Table 5 be interpreted?

2 A. Several aspects of Table 5 are important. First, only 296.5 of our 1000 migrations fall
3 into categories that correspond to incremental hot cuts. For completeness, note that the
4 remaining migrations consist of 631.9 lines to and from CLEC facilities-based suppliers
5 and 71.5 lines between incumbent retail and CLEC resale and between different CLEC
6 resale providers. None of these 703.4 migrations generates hot cuts today or
7 incremental hot cuts in a post-UNE-P environment. In addition, 27.3 migrations are
8 eliminated because of the winback adjustment and 159.1 UNE migrations are associated
9 with existing UNE-L and thus do not contribute to incremental hot cuts. Putting these
10 numbers together, we obtain $703.5 + 27.3 + 159.1 = 889.8$ migrations that do not entail
11 incremental hot cuts under these assumptions.

12 Second, nearly all hot cuts produced by customer migration are in Category (1). At
13 current levels of CLEC market penetration, migrations between CLECs (Categories (2)
14 – (4)) are quantitatively unimportant. Note however, that our method of measuring
15 incremental hot cut demand — adding the current flow of UNE-P requests to the current
16 flow of winbacks — includes all four categories.

17 Q. This base case assumes that market shares remain constant, so that lines migrate to
18 incumbents and CLECs in the same proportion as their current market shares. How
19 would the results in Table 5 change if CLEC market shares increased, so that lines
20 migrate more-than-proportionately to CLEC suppliers?

21 A. The results are not sensitive to that assumption. If, for example, customers were twice
22 as likely to migrate to a CLEC as indicated by the current CLEC market share, the

1 percentage of migrations resulting in a hot cut would fall from 26.93 to 26.71 percent.
2 At the extremes, if no customers migrated to the incumbent, the hot cut percentage
3 would fall to 26.16 percent. If no customers migrated to CLECs, the hot cut percentage
4 would rise to 27.14 percent.

5 Q. This base case assumes that customer migration is uniformly distributed among
6 incumbent and CLEC customers. How would the results in Table 5 change if CLEC
7 customers were more inclined to migrate than the incumbent's customers?

8 A. This assumption also is not critical. If CLEC customers were twice as likely to migrate
9 as incumbent customers, the hot cut percentage would fall from 26.93 to 23.42 percent.
10 If no incumbent customers ever chose to migrate, 14.23 percent of migrations would
11 entail a hot cut. At the other extreme, if CLEC customers never migrated, the hot cut
12 percentage would rise to 30.43 percent.

13 Q. How would you interpret these results?

14 A. This exercise answers two questions. First, some CLECs have argued that without
15 UNE-P, the incidence of hot cuts should be similar to that of inter- and/or intraLATA
16 PIC changes experienced in the toll market. In both cases, the argument goes, a
17 consumer's choice to change suppliers results in a change in the network configuration:
18 for toll, a software change to redirect 1+ calls and for local exchange service; for local,
19 a hot cut to shift the loop from one carrier's switch to another's. The numbers in Table
20 5 show that this argument is wrong, because when a local exchange customer changes
21 carriers, a hot cut is not necessarily required. In fact, using current market

1 characteristics, a local exchange customer migration involves a hot cut only about 27
2 percent of the time.

3 Second, for forecasting the demand for incremental hot cut requests, these results show
4 that the number of incremental hot cuts in a post-UNE-P environment can be
5 conservatively approximated by the number of UNE-P migrations and winbacks
6 currently being performed.³ The likely incremental hot cut requests from categories
7 (2)-(4) are insignificant. I note, however, that the data for UNE-P migration captures
8 elements of (2) – (4) in the sense that the data include all migrations to UNE-P, *i.e.*,
9 from Verizon RI and from UNE-L, UNE-P and resale.

10 Third, the results show that the volume of incremental hot cuts associated with 1000
11 migrations is quite small **[BEGIN VERIZON PROPRIETARY] [END VERIZON**
12 **PROPRIETARY]**. This result is due to the comparatively large proportion of Rhode
13 Island CLEC lines that are facilities-based and Verizon-supplied UNE loops using
14 UNE-L.

15 Q. You have discussed ways of assessing the incremental hot cut demand that would result
16 from the elimination of UNE-P and its replacement by UNE-L. Would Verizon RI have
17 to provision this level of demand on the first day of the post-UNE-P environment (*i.e.*,
18 immediately after a Commission determination of non-impairment)?

19 A. No. A portion of the incremental hot cuts stemming from customer migration will
20 increase over the period during which the embedded base of UNE-P lines is converted

1 to UNE-L. For customers migrating from CLEC to Verizon RI retail service, a hot cut
2 occurs only when the customer migrates from UNE-L service. As the embedded base is
3 converted from UNE-P to UNE-L, a larger proportion of CLEC-to-Verizon migrations
4 will require a hot cut, and it is only after the embedded base is fully converted that
5 winback migrations will generate the full amount of incremental hot cuts that we have
6 calculated. In addition, even after the embedded base is fully converted, winbacks can
7 be expected to increase if the volume of UNE-L lines continues to increase. In the next
8 section, I calculate the rates at which the embedded base of CLEC UNE-P lines will be
9 converted to UNE-L, and that information, coupled with the growth in the volume of
10 incremental UNE-L lines, will be used to estimate the time path of winback migrations
11 and the associated volume of incremental hot cuts.

12 Q. For the five months following a non-impairment determination, in which CLECs may
13 continue to purchase UNE-Ps, what would be your estimate of incremental hot cuts
14 stemming from customer migration?

15 A. Zero. Assuming CLECs continue to purchase UNE-Ps and UNE-Ls at their historical
16 rates, no incremental hot cuts will be required from customer migration (hot cuts will be
17 required from conversion of the embedded base beginning in month 3). That is, I
18 assume that during the first five months, CLECs acquiring new customers will continue
19 to purchase UNE-Ps at their historical level, and I do not start the process of substituting
20 UNE-Ls for UNE-Ps for these lines until after the five-month grace period has expired.

(...continued)

³ This assumes that the current flow of UNE-P migration is representative of the “steady-state” in a mature market.
(continued...)

1 **B. Conversion of the Embedded Base of UNE-P Customers**

2 Q. You have previously discussed the regulatory requirements and practical considerations
3 that will affect the facilities migrations resulting from the conversion of the embedded
4 base of UNE-P lines. Based on that discussion, what is a reasonable assumption to
5 make regarding the timing of the conversion of the embedded base to alternative service
6 arrangements and, more importantly, to the flow of hot cuts that Verizon RI will be
7 required to undertake as a result of that conversion?

8 A. As discussed above, it is reasonable to assume that the conversion of the embedded base
9 will be uniformly distributed within each of the three periods specified in the *Triennial*
10 *Review Order*. Thus, if we use x to represent the embedded base of customers, then a
11 formula for the number of monthly conversions for the first 11 months following the
12 submission of a conversion plan would be $(x/3)/11$, or $x/33$; the formula for the number
13 of monthly conversions for the second (7-month) portion of the conversion period is
14 $(x/3)/7$, or $x/21$, and the same $x/21$ will be converted per month during the last 7-month
15 period.

16 **C. Post-UNE-P Incremental Hot Cuts**

17 Q. Based on these analyses, what would be a conservative estimate of the flow of
18 incremental hot cuts required in a post-UNE-P environment?

19 A. A conservative estimate of the monthly flow of incremental hot cuts required in a post-
20 UNE-P environment during the conversion period would be (1) a forecast of the flow of

(...continued)

I discuss this in detail below in Section III.

1 UNE-P migrations, (2) winbacks from UNE-P transactions and (3) those required for a
2 uniform conversion of the embedded base within each of the three periods specified by
3 the FCC.⁴ As described above, the winback transactions requiring a hot cut would ramp
4 up over the embedded base conversion period and reach its full level of estimated
5 incremental hot cuts at the end of the 27-month period. After the 27-month embedded
6 base conversion period, the third component of incremental hot cut demand would be
7 eliminated. For the reasons discussed below, I believe that the actual volume of hot
8 cuts likely to be performed by Verizon RI will be much lower than the numbers
9 presented in this testimony.

10 Q. Please explain why the estimate presented here for incremental hot cuts required in a
11 post-UNE-P environment — UNE-P migrations and winback transactions and a
12 uniformed conversion of the embedded base — is a conservative estimate of future hot
13 cuts in the post-UNE-P environment.

14 A. There are several reasons why the estimate is conservative. First the proliferation of
15 bundling as a strategy used by wireline, wireless and cable providers means that churn
16 rates are likely to be lower because consumers are less likely to switch from a bundle of
17 services to another supplier's bundle of services than from a single service to a
18 competitor's single service offering.

⁴ Technically, there is one component of incremental hot cuts excluded from UNE-P migrations and winbacks from UNE-P. A customer migration from UNE-P to resale in the future will require a hot cut, and these transactions are not included in current volumes of UNE-P migrations (which measure migrations to UNE-P from all sources) or winbacks from UNE-P (which measure migrations from UNE-P to Verizon). However, for reasons discussed in Table 4 and 5 above, these migrations are likely to be insignificant.

1 Second, the analysis does not take into account the likely increase in customer
2 migrations to alternative networks such as wireless, cable, telephony and Internet
3 telephony. Therefore, even if churn were to remain constant during the relevant time
4 period, there would still be a decrease in the demand for hot cuts because
5 proportionately more customers would be migrating to alternative suppliers rather than
6 to suppliers who use UNE-L.

7 Third, my analysis conservatively assumes all CLECs that were previously using UNE-
8 P will now use UNE-L, even though there are other options available to the CLEC such
9 as facilities provisioning or resale.

10 Finally, FCC rules require that impairment determinations for mass market switching be
11 made on a market-area-by-market area basis. To the extent that Verizon RI requests or
12 receives relief in less than its entire Rhode Island service area, those methods will
13 underestimate the required volume of incremental hot cuts.

14 Q. Please explain your earlier statement that bundling will lead to reduced churn.

15 A. Recently, companies have begun aggressively to market bundled packages of
16 telecommunications services, and according to company officials and telecom experts,
17 this packaging strategy has the effect of reducing customer churn. The current data
18 regarding the incidence of UNE-P migration and winback does not fully take this
19 phenomenon into account.

20 All else equal, bundled packaging of telecommunications services (or any services for
21 that matter) tends to make consumers less likely to change providers compared to when
22 customers purchase non-bundled services. Transactions costs of switching suppliers are

1 lower with stand-alone service offerings since all that matters is quality and price for a
2 single service. Customers purchasing a bundle of services would need to compare
3 competitors' offering of multiple services before deciding to switch suppliers, and this
4 would make the customer less likely to switch from the bundled service. Bundling can
5 extend the effects of a customer's preference for one service of a particular supplier to
6 other services of that supplier. For example, a customer of AT&T Complete Choice is
7 less likely to switch from AT&T than a Verizon RI local exchange customer who uses
8 AT&T long distance.

9 Q. Is there evidence to support the proposition that offering bundled services makes
10 customers less likely to switch providers?

11 A. Yes, there is evidence in the trade press that one of the reasons why companies are
12 moving to bundled offerings is to reduce customer churn. For example, according to
13 Mark Johnson, director of marketing for Z-Tel Communications, a large CLEC:

14 Everyone is trying to offer bundles of services...The more services a
15 customer gets from a particular carrier, the harder it is for that customer to
16 leave.⁵

17 According to an article in the *New York Times*, managers believe that customers who
18 buy packages are more loyal. For example, according to an AT&T spokesperson:

19 It's human nature...People have less desire to move away from you if you
20 have all their business.⁶

⁵ Michael Braga, "Bundles of problems besets long-distance," *St. Petersburg Times*, July 5, 2000.

⁶ *Id.*

1 While estimates vary of the impact that bundling has and will have on customer churn,
2 the general conclusion is that bundling will significantly reduce customer churn.

3 According to AT&T:

4 AT&T executives, meanwhile, say ‘bundled services are 20 to 30 percent
5 stickier than standalone long distance accounts.’ In fact, customers who
6 buy a bundled product are ‘two to eight times more likely to buy
7 additional products,’ compared to customers who only buy long distance.⁷

8 AT&T states that in single-family AT&T homes with only video services, churn runs
9 are more than 2% a month but when the home purchases 2 and 3 products the churn
10 rates fall to 1.59% and 1.2%, a drop of 20 and 40 percent, respectively.⁸

11 Similarly, according to Sprint, its customer churn fell 20 percent for bundled customers
12 and that during the first 60 days of a new account, the churn rate of bundled customers
13 is half that of customers buying just one service.⁹

14 These numbers are fairly consistent with churn forecasts published by Bernstein
15 Research.¹⁰ In a recent report, Bernstein Research published forecasts for 2003 of
16 monthly churn rates for stand-alone local, long distance, mobile, broadband and video
17 and for these services provided as a bundle. The average churn rate for the stand-alone
18 services was approximately 3.0%. However, when these services are purchased as a
19 bundle, Bernstein Research estimates the churn rate to be only 0.4%.

⁷ Gary Kim, “All You Can Eat: Competitive providers are seeing their fill of small business bundles,”
<http://www.fatpipeonline.com/archives/july2003buffet.asp>

⁸ K.C. Neel, “The Book on Bundling,” *CableWorld*, July 15, 2002.

⁹ Jessica Hall, “Telecom companies find success in lighter ‘bundles’”, *Reuters News*, January 12, 2001.

¹⁰ See Halpern & Luria, *supra* note 1, at 8.

1 Q. Please explain why the existence of alternatives to the telephony wireline network (such
2 as Internet telephony) would likely impact the demand for hot cuts?

3 A. The existence and growth of alternatives to the telephony wireline network reduces the
4 demand for hot cuts because for any given number of customers migrating from
5 Verizon RI, a greater proportion would migrate to suppliers that do not require the use
6 of UNE-L and, therefore, do not require a hot cut. For example, assume that today for
7 every 10 customers that migrate from Verizon RI, six (60%) go to a CLEC that uses
8 UNE-L and thus require hot cuts, three (30%) go to a facilities-based or resale CLEC
9 and only one (10%) goes to an alternative network. If the proportion of customers
10 migrating from Verizon RI to an alternative network increases to 30%, then for the
11 same 10 migrations, there would be as many as 2 (20 percent) fewer hot cuts.

12 The analysis presented above for incremental hot cut demand does not take into account
13 the trend of local exchange customers migrating from wireline suppliers to alternative
14 networks such as wireless, cable telephony, and Internet telephony. This reduces the
15 demand for hot cuts by reducing the proportion of customers that migrate from Verizon
16 RI to CLECs, so that even if customer churn were to remain constant in the future, there
17 would still be a decrease in the demand for hot cuts because proportionally more
18 customers would be migrating to alternative suppliers rather than to suppliers who use
19 UNE-L.

20 Q. Is the proportion of customer migrations from Verizon RI to alternative networks likely
21 to increase in the future?

1 A. Yes. There is evidence that the pace of migration from traditional wireline telephony
2 networks to alternative networks such as cable telephony, wireless, and Internet
3 telephony will likely accelerate in the future. According to the FCC:

4 Verizon, SBC, and BellSouth saw business and consumer access lines fall
5 3.6, 4.1, and 3.2 percent, respectively, in 2002, for a total decrease of 5.5
6 million lines, with wireless substitution being a significant factor.¹¹

7 And not all the reductions in access lines were due to reductions in second lines.
8 According to Forbes, in 2001 as many as three million customers decided to forgo a
9 home phone, going wireless instead.¹² According to the FCC, the number of wireless
10 subscribers in Rhode Island increased 12 percent between December 2001 and
11 December 2002 and nearly doubled since December 1999.¹³

12 Cable telephony is proliferating as well. The same Forbes article states that:

13 Still worse for the Bells than cord-cutting is losing customers to the cable
14 companies. About 1.7 million Americans now get their phone service
15 over cable lines...In the few markets where cable has been around for over
16 two years, about 20% to 25% of homes tend to sign up, say AT&T.¹⁴

17 And a report less than one year later put the number of cable telephony customers at 3
18 million as of December 2002, almost double the 1.7 million figure in 2001.¹⁵ Given
19 that the cable telephony service is generally in its infancy, these figures are likely to

¹¹ Federal Communications Commission, “8th Annual CMRS Competition Report” (rel. July 14, 2003) (“CMRS Report”).

¹² Scott Woolley, “Bad Connection,” *Forbes.com*, August 8, 2002.

¹³ FCC Local Competition Report: Status as of December 2002, Table 13.

¹⁴ *Id.*

¹⁵ Forbes.com, http://www.forbes.com/forbes/2002/0812084_pring.html. CBS MarketWatch.com, “Baby Bell Rivals Win More Local Users,” June 12, 2003

1 increase significantly in the future, thus impacting the proportion of migrations that
2 require a hot cut.

3 Q. Why is it conservative to assume that all CLECs currently utilizing UNE-P would
4 switch to UNE-L if Verizon RI's obligation to provide "mass market" local switching
5 on an unbundled basis were eliminated?

6 A. The estimate for incremental hot cuts discussed above assumed that all CLECs that
7 were previously using UNE-P will now use UNE-L, even though there are other options
8 available to the CLEC, such as providing its own switches and loops or reselling
9 Verizon RI's retail services. If CLECs choose to use these other options, there would
10 be no hot cut performed. While it is difficult to forecast exactly how the CLECs will
11 provision service in the post-UNE-P environment, it is certainly a conservative
12 assumption for purposes of estimating incremental hot cuts to assume that all UNE-Ps
13 will be provisioned through UNE-L in the future.

14 Q. How do the FCC rules relating to state-commission impairment determinations for
15 mass-market local switching affect the analysis of incremental hot cuts?

16 A. In the "nine month" proceedings authorized under the *Triennial Review Order*, non-
17 impairment determinations relating to mass-market local switching are to be made on a
18 market-area-by-market-area basis, with the precise market areas to be determined by the
19 state commission, subject to the constraint that the market area may not be the entire
20 state. Although precise market areas for purposes of the mass-market local switching
21 analysis have not yet been adopted by the Commission, ILECs may pursue local
22 switching relief only in certain discrete geographic areas of the State; and, of course, the

1 Commission may ultimately make non-impairment determinations in some market areas
2 but not others. In other words, local switching relief is only being sought at this point,
3 and therefore will only be granted, for portions of the State. This analysis of
4 incremental hot cut activity is therefore conservative in that it assumes that UNE-P
5 would become unavailable in the entire State.

6 **III. DATA ANALYSIS**

7 Q. What data were used in your forecast of the volume of incremental hot cuts?

8 A. Verizon RI data on various types of customer migrations were the primary source of
9 data used in the analysis. A description of the input data that was utilized is provided in
10 Exhibit II.

11 Q. What is the volume of incremental hot cuts that you believe Verizon RI should be
12 prepared to handle on a monthly basis if CLECs are denied access to mass-market
13 unbundled local switching?

14 A. As discussed previously in the testimony, a conservative estimate of the incremental
15 number of hot cuts and winbacks during the conversion period consists of (i) a forecast
16 of the flow of UNE-P migrations, (ii) an estimate of the winbacks from UNE-P and (iii)
17 the transactions that will result from the conversion of the embedded base. After the
18 conversion period, item (iii) goes away and the incremental hot cuts consist of items (i)
19 and (ii) only. Exhibit III provides a summary of the incremental hot cuts required over
20 the conversion period.

21 Q. Please describe how you calculated the flow of UNE-P migrations.

1 A. I began by examining the UNE-P migration data from January 2002 to the present. I
2 used March 2002—the month after the Commission approved long distance competition
3 for Verizon RI—as the beginning point of active UNE-P competition. The monthly
4 flow of UNE-P migrations prior to March 2002 was quite low.

5 Q. Do you consider the most recent level of UNE-P migration as indicative of what to
6 expect over the next few years?

7 A. No. I consider the recent levels of UNE-P migration as similar to the levels experienced
8 by a product that has reached an intermediate stage of growth of its life cycle in the
9 marketplace. When products are first introduced, there are relatively few buyers, and
10 time must pass before demand levels reflect those of a mature market in a steady state.
11 In general, the life cycle of products resembles an S-shape logit curve where initially,
12 demand is low and growing slowly, followed by a period of rapid growth. After this
13 phase, demand levels reach an asymptote, remaining relatively constant for some period
14 of time, followed possibly by a period of negative growth and decay. An examination
15 of the UNE-P migration data indicates a steep rising trend in the number of migrations.
16 There were approximately **[BEGIN VERIZON PROPRIETARY] [END VERIZON**
17 **PROPRIETARY]** UNE-P migrations in March 2002; that number reached over
18 **[BEGIN VERIZON PROPRIETARY] [END VERIZON PROPRIETARY]** by
19 September 2003, (See Exhibit IV). The increasing growth rate leads me to conclude that
20 the market is currently in the growth period of the product's life cycle and has not yet
21 reached a steady state. Thus, I would expect further increases from the current level of
22 UNE-P migrations and then a leveling to a steady state in the near future.

1 Q. Can you forecast the steady state rate of UNE-P migration?

2 A. Yes, it is possible to forecast the steady-state rate of UNE-P migration from experience
3 in other mature markets. One cannot reliably forecast this steady-state rate from current
4 data in Rhode Island because without a reference point, it is difficult to infer from data
5 in the middle of an S-shaped curve where the upper limit of the curve will be. Thus, it
6 is necessary to have some external evidence regarding the likely demand level
7 experienced in a similar but mature market to infer the height of the S curve for Verizon
8 RI. If (i) the current level of UNE-P migrations, (ii) the steady state rate of UNE-P
9 migrations and (iii) the length of time necessary for the market to reach the steady state
10 are known, the intermediate monthly UNE-P migration values can be forecasted (i.e.,
11 monthly values can be estimated from the most recent period to the date of the mature
12 market after which UNE-P migrations remain roughly constant.)

13 Q. What is a reasonable estimate of the steady state rate of UNE-P migration?

14 A. In a recent proceeding in New York on behalf of Verizon, I determined that in that
15 mature UNE-P market, one could expect monthly UNE-P migrations to average
16 approximately [BEGIN VERIZON PROPRIETARY] [END VERIZON
17 PROPRIETARY] of total retail lines. As the steady state of UNE-P migrations in the
18 Verizon New York territory was reached approximately during the 2002-2003 period, I
19 would estimate that it took about two years after long distance competition was
20 authorized and CLEC entry accelerated for the steady state to be reached in New York.
21 Of course, applying this assumption to other markets and other geographic areas entails
22 a significant approximation. The serving territories of Verizon New York and Verizon

1 RI are different in many respects, so that the steady-state rate of UNE-P migration
2 might be very different in the two states. However, I would expect the steady state rate
3 of UNE-P migration to be higher, if anything, in New York than in Rhode Island, so
4 applying this assumption would tend to over-forecast future UNE-P migration and
5 future demand for hot cuts in Rhode Island.

6 Similarly, the time from the beginning of UNE-based competition to the steady state
7 will differ across states. Since CLEC competition prior to 271 authority was at a higher
8 level in New York than in Rhode Island, I assume that UNE migrations in Verizon's
9 Rhode Island service territory will take longer to reach steady state than it did in New
10 York: approximately four years from 271 authorization to the point where UNE
11 migration becomes a constant proportion of Verizon's retail lines. Assuming UNE-P
12 competition began in the Verizon RI territories approximately in March 2002, (at the
13 approximate time of 271 authorization) I would expect migration to reach a steady state
14 at about **[BEGIN VERIZON PROPRIETARY] [END VERIZON PROPRIETARY]**
15 percent of retail lines in about March 2006. Assuming conservatively that the number
16 of retail lines remains constant during this period, this method estimates a steady state
17 of approximately **[BEGIN VERIZON PROPRIETARY] [END VERIZON**
18 **PROPRIETARY]** UNE-P migrations per month by March 2006.

19 Q. How do you determine the monthly change in UNE-P migration from the most recent
20 period available (September 2003) to March 2006?

21 A. I calculate the monthly growth rate required to grow the current level of UNE-P
22 migrations in September 2003 **[BEGIN VERIZON PROPRIETARY] [END**

1 **VERIZON PROPRIETARY]** to the steady state level of approximately **[BEGIN**
2 **VERIZON PROPRIETARY] [END VERIZON PROPRIETARY]** in March 2006.
3 This monthly growth rate is **[BEGIN VERIZON PROPRIETARY] [END**
4 **VERIZON PROPRIETARY]**. I then grow the current level of UNE-P migrations by
5 **[BEGIN VERIZON PROPRIETARY] [END VERIZON PROPRIETARY]** on a
6 monthly basis.

7 Q. Are there any additional reasons why your estimate of UNE-P migrations over the next
8 several years is likely to overestimate the actual amounts?

9 A. Yes. While it is necessary to use information from Verizon NY territories to estimate
10 the steady state in the Verizon RI territories, these two markets are different and it is
11 likely that the steady state in the two markets will differ. The demographic
12 characteristics of New York are likely to attract more competition, on average, than in
13 Verizon's Rhode Island service area, and this effect would reduce the steady-state
14 proportion of retail lines that would migrate to competitors in a given month.

15 Q. Please explain how you forecasted winbacks.

16 A. I examined the average value of winbacks from UNE-P as a proportion of total UNE-P
17 lines in service for different time periods during January 2002 to September 2003. I
18 observed that the average over the most recent twelve months has the highest winback
19 proportion. Therefore, to be conservative, I calculated the average value of winbacks
20 from UNE-P as a proportion of total UNE-P lines in service for this recent twelve-
21 month period **[BEGIN VERIZON PROPRIETARY] [END VERIZON**
22 **PROPRIETARY]** and used this figure to forecast winbacks.

1 Specifically, I assume that monthly winbacks during the conversion period and beyond
2 are proportional to the volume of incremental UNE-L lines, *i.e.*, equal to **[BEGIN**
3 **VERIZON PROPRIETARY]** **[END VERIZON PROPRIETARY]** percent of the
4 incremental UNE-L lines added as a result of the elimination of the switching element.
5 Specifically, the number of incremental UNE-Ls consists of (i) the monthly conversion
6 of the embedded base of UNE-P and (ii) the net additions to the monthly volume of
7 UNE-Ps.

8 Q. How did you forecast the embedded base?

9 A. I began with the most recent number for the embedded base, approximately **[BEGIN**
10 **VERIZON PROPRIETARY]** **[END VERIZON PROPRIETARY]** and grew the
11 embedded base by changes in UNE-P migrations, winbacks and disconnects.
12 Specifically, rather than forecast the embedded base, I calculated the embedded base in
13 a given month t as equal to the embedded base in month $t-1$, plus UNE-P migrations in
14 month t , minus winbacks from UNE-P in month t , minus disconnects in month t , see
15 Exhibit V.¹⁶ As described above, this approach is likely to be an upper bound on the
16 volume of UNE-P embedded base over the forecasted period.

17 Q. What is the volume of incremental hot cuts that Verizon RI should be prepared to
18 handle as a result of converting the embedded base?

¹⁶ For disconnects, I assume that roughly 1-2 percent of lines in service in any given month disconnect due to factors other than migration such as mobility, non-payment of service or death. Long-term demographic statistics for the U.S. show that households move on average every five years, amounting to a 20 percent annual disconnect rate for moves.

1 A. I assume that the Commission will render a decision in July 2004 so that the starting
2 point for conversion of the embedded base is July 2004. Based on my methodology for
3 growing the embedded base, I forecast the embedded base to increase from **[BEGIN**
4 **VERIZON PROPRIETARY] [END VERIZON PROPRIETARY]** in September
5 2003 to **[BEGIN VERIZON PROPRIETARY] [END VERIZON PROPRIETARY]**
6 in July 2004. I also assume that the conversion process will not begin until two months
7 after July 2004. An analysis of incremental hot cut volumes resulting from the
8 conversion of the embedded base is presented in Exhibit VI.

9 Q. How does the fact that CLECs will be able to purchase UNE-Ps for five additional
10 months after July 2004 affect your analysis?

11 A. The analysis accounts for this fact by allowing the embedded base for the first five
12 months to continue to grow by the same forecasted method mentioned above and in
13 Exhibit V. At the same time, lines are being converted beginning in month 3; therefore,
14 these converted lines are subtracted from the still growing embedded base. December
15 2004 is the last month that CLECs will be able to order UNE-Ps assuming that the
16 Commission's decision is effective as of July 2004.

17 Q. Will the embedded base also decrease due to winbacks?

18 A. Yes. During the conversion process, we assume that Verizon will continue to win back
19 customers at the historical monthly rate, as described above. Therefore, during the
20 conversion period, the embedded base is being reduced due to the conversion process
21 and due to Verizon winbacks.

1 Q. Given your forecasts for the incremental hot cuts required if the Commission finds that
2 CLECs are not impaired without access to Verizon RI's local switching unbundled
3 element, is it likely that Verizon RI will be able to hire the additional people required?

4 A. Yes, current economic conditions suggest that work force expansion would not be
5 difficult. First, a sufficient number of potential employees are clearly available.
6 Because of force reductions in the telecommunications industry over the last several
7 years, there is a large pool of experienced workers available to fill incremental staffing
8 needs. Indeed, because the qualifications for these positions are relatively modest,
9 Verizon would not be limited to hiring experienced telecommunications workers. An
10 analysis of current unemployment statistics for Rhode Island shows evidence that
11 qualified job seekers are available in numbers far exceeding those that would be
12 required by Verizon. Rhode Island State unemployment across all industry segments
13 has risen from about 21,049 in October 2000 to 23,654 in September 2003.¹⁷ Thus,
14 there are over 2600 more people seeking work today in Rhode Island than there were at
15 the end of the telecom boom in 2000.

16 Second, the well-publicized meltdown in the global telecommunications industry has
17 resulted in massive layoffs and force reductions. Until recently, the *Financial Times*
18 maintained a website tracking announcements of layoffs by major communications
19 employers. According to this compendium, between July 2000 and May 2002, the

¹⁷Rhode Island Department of Labor and Training. Labor Market Information. Rhode Island Labor Force Statistics, Seasonally Unadjusted. <http://www.dlt.ri.gov/lmi/laus/state/state.htm>

1 global telecom sector cut approximately 539,000 jobs.¹⁸ In the U.S., as of May 2002,
2 Qwest, BellSouth and Verizon had announced job cuts of 13,000, 4,200 and 7,500
3 respectively. In September 2002, SBC announced a reduction of 11,000 jobs, in
4 addition to the 10,000 jobs eliminated in the first three quarters of 2002.¹⁹ AT&T's
5 announced layoffs amounted to 10,000 jobs by May 2002. Earlier this month, Verizon
6 announced a force reduction amounting to over 21,000 employees and about 10 percent
7 of its work force.

8 Third, FCC data on U.S. telephone employment also shows a dramatic reduction,
9 continuing into 2003. Based on preliminary data through March 2003, total
10 employment has fallen by about 160,000 jobs from its peak in 2001. See Exhibit VII.

11 In sum, all indications from the labor markets suggest that sufficient workers are
12 available to manage the expected additional work load from incremental hot cuts.

13 Q. Does this conclude your testimony?

14 A. Yes.

¹⁸ See <http://news.ft.com/ft/gx.cgi/ftc?pagename=View&c=Article&cid=FT3MOCS3OPC>, the FT.com Telecoms job cuts watch, last updated May 14, 2002. This figure includes telecom operators, cable operators and network equipment providers, categories that have been particularly hard hit.

¹⁹ "SBC to Cut 11,000 Jobs and Investment Due to Outmoded Regulatory Scheme and Weak Economy," SBC Press Release, September 26, 2002.

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Dr. Taylor received a B.A. *magna cum laude* in Economics from Harvard College, an M.A. in Statistics and a Ph.D. in Economics from the University of California at Berkeley. He has taught economics, statistics, and econometrics at Cornell and the Massachusetts Institute of Technology and was a post doctoral Research Fellow at the Center for Operations Research and Econometrics at the University of Louvain, Belgium.

At NERA, Dr. Taylor is a Senior Vice President, heads the Cambridge office and is Director of the Telecommunications Practice. He has worked primarily in the field of telecommunications economics on problems of state and federal regulatory reform, competition policy, terms and conditions for competitive parity in local competition, quantitative analysis of state and federal price cap and incentive regulation proposals, and antitrust problems in telecommunications markets. He has testified on telecommunications economics before numerous state regulatory authorities, the Federal Communications Commission, the Canadian Radio-Television and Telecommunications Commission, federal and state congressional committees and courts. Recently, he was chosen by the Mexican Federal Telecommunications Commission and Telmex to arbitrate the renewal of the Telmex price cap plan in Mexico. Other recent work includes studies of the competitive effects of major mergers among telecommunications firms and analyses of vertical integration and interconnection of telecommunications networks. He has appeared as a telecommunications commentator on PBS Radio and on The News Hour with Jim Lehrer.

He has published extensively in the areas of telecommunications policy related to access and in theoretical and applied econometrics. His articles have appeared in numerous telecommunications industry publications as well as *Econometrica*, the *American Economic Review*, the *International Economic Review*, the *Journal of Econometrics*, *Econometric Reviews*, the *Antitrust Law Journal*, *The Review of Industrial Organization*, and *The Encyclopedia of Statistical Sciences*. He has served as a referee for these journals (and others) and the National Science Foundation and has served as an Associate Editor of the *Journal of Econometrics*.

EDUCATION

UNIVERSITY OF CALIFORNIA, BERKELEY
Ph.D., Economics, 1974

UNIVERSITY OF CALIFORNIA, BERKELEY
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HARVARD COLLEGE
B.A., Economics, 1968
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EMPLOYMENT

- 1988- NATIONAL ECONOMIC RESEARCH ASSOCIATES, INC. (NERA)
Senior Vice President, Office Head, Telecommunications Practice Director.
- 1983-1988 BELL COMMUNICATIONS RESEARCH, INC. (Bellcore)
Division Manager, Economic Analysis, formerly Central Services Organization, formerly American Telephone and Telegraph Company: theoretical and quantitative work on problems raised by the Bell System divestiture and the implementation of access charges, including design and implementation of demand response forecasting for interstate access demand, quantification of potential bypass liability, design of optimal nonlinear price schedules for access charges and theoretical and quantitative analysis of price cap regulation of access charges.
- 1975-1983 BELL TELEPHONE LABORATORIES
Member, Technical Staff, Economics Research Center: basic research on theoretical and applied econometrics, focusing on small sample theory, panel data and simultaneous equations systems.
- Fall 1977 MASSACHUSETTS INSTITUTE OF TECHNOLOGY
Visiting Associate Professor, Department of Economics: taught graduate courses in econometrics.
- 1974-1975 CENTER FOR OPERATIONS RESEARCH AND ECONOMETRICS
Université Catholique de Louvain, Belgium.
Post Doctoral Research Associate: basic research on finite sample econometric theory and on cost function estimation.
- 1972-1975 CORNELL UNIVERSITY
Assistant Professor, Department of Economics. (On leave 1974-1975.) taught graduate and undergraduate courses on econometrics, microeconomic theory and economic principles.

MISCELLANEOUS

- 1985-1995 Associate Editor, *Journal of Econometrics*, North-Holland Publishing Company.
1990- Board of Directors, National Economic Research Associates, Inc.
1995- Board of Trustees, Treasurer, Episcopal Divinity School, Cambridge, Massachusetts.

PUBLICATIONS

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Public Utility Commission of Texas (Docket No. 8585) on behalf of Southwestern Bell Telephone Company: analysis of Texas intrastate switched access charges and bypass of switched access. Filed December 18, 1989.

Federal Communications Commission (Docket 87-313) on behalf of the United States Telephone Association: "Local Exchange Carrier Productivity Offsets for the FCC Price Cap Plan," May 3, 1990.

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State of Maine Public Utilities Commission (Docket No. 89-397) on behalf of New England Telephone & Telegraph Company: theoretical and historical analysis of incentive regulation in telecommunications, entitled "Incentive Regulation in Telecommunications," filed June 15, 1990.

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- Delaware Public Service Commission (Docket No. 89-24T) on behalf of The Diamond State Telephone Company: rebuttal testimony describing appropriate costing and pricing methods for local exchange carrier provision of contract Centrex services. Filed August 17, 1990.
- Montana Public Service Commission (Docket No. 90.8.46) on behalf of US West Communications: theoretical and historical analysis of incentive regulation plans in telecommunications. Filed October 4, 1990.
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Florida Public Service Commission (Docket No. 920385-TL) on behalf of Southern Bell Telephone and Telegraph Company: the economic relationship between depreciation rates, investment, and infrastructure development. September 3, 1992.

Maryland Public Service Commission (Case No. 8462) on behalf of The Chesapeake and Potomac Telephone Company of Maryland: competition and the appropriate regulatory treatment of Yellow Pages. Filed October 2, 1992.

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Florida Public Service Commission (Docket No. 920260-TL) on behalf of Southern Bell Telephone and Telegraph Company: economic analysis of a proposed price cap regulation plan. December 18, 1992.

Science, Technology and Energy Committee of the New Hampshire House of Representatives on behalf of New England Telephone Company, "An Economic Perspective on New Hampshire Senate Bill 77," an analysis of resale of intraLATA toll services. April 6, 1993

California Public Utilities Commission, (Docket No. I.87-11-033), on behalf of Pacific Bell, "Pacific Bell's Performance Under the New Regulatory Framework: An Economic Evaluation of the First Three Years," (with T.J. Tardiff). Filed April 8, 1993, reply testimony filed May 7, 1993.

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Vermont Public Service Board, Petition for Price Regulation Plan of New England Telephone on behalf of New England Telephone Company, Dockets 5700/5702: analysis of appropriate parameters for a price regulation plan. Filed September 30, 1993. Rebuttal testimony filed July 5, 1994.

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Testimony before the United States District Court, Eastern District of New York on behalf of Jancyn Manufacturing Corp., in *Jancyn Manufacturing Corp. v. The County of Suffolk*. Commercial damages. Depositions: September 19, 1991, November 22, 1993; Testimony and Cross-Examination: January 11, 1994.

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Maryland Public Service Commission (Case No. 8659) on behalf of Bell Atlantic - Maryland: appropriate pricing of interconnection among competing local exchange carriers. Filed

November 9, 1994.

Pennsylvania Public Utility Commission, (Docket No. I-940034) on behalf of Bell Atlantic: issues regarding proposed presubscription for intraLATA toll traffic. Filed as part of panel testimony, December 8, 1994. Reply testimony filed February 23, 1995. Surrebuttal testimony filed March 16, 1995.

State of Maine Public Utilities Commission (Docket Nos. 94-123/94-254) on behalf of New England Telephone & Telegraph Company: analysis of appropriate parameters for a price regulation plan. Filed December 13, 1994. Rebuttal testimony filed January 13, 1995.

Maryland Public Service Commission (Case No. 8584, Phase II) on behalf of Bell Atlantic - Maryland: geographically deaveraged incremental and embedded costs of service. Filed December 15, 1994. Additional direct testimony concerning efficient rate structures for interconnection pricing filed May 5, 1995. Rebuttal testimony filed June 30, 1995.

Canadian Radio-Television and Telecommunications Commission (Application of Teleglobe Canada for Review of the Regulatory Framework of Teleglobe Canada Inc.): on behalf of Teleglobe Canada, Inc., structure of a price regulation plan for the franchised supplier of overseas telecommunications services in Canada. Filed December 21, 1994.

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Canadian Radio-Television and Telecommunications Commission, Implementation of Regulatory Framework and Related Issues, Telecom Public Notices CRTC 94-52, 94-56 and 94-58, "Economic Welfare Benefits from Rate Rebalancing," on behalf of Stentor. Filed February 20, 1995.

Federal Communications Commission on behalf of Bell Atlantic Corporation, affidavit examining cost support for Asymmetric Digital Subscriber Loop (ADSL) video dialtone market trial. Filed February 21, 1995.

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Federal Communications Commission on behalf of the United States Telephone Association, study entitled "Competition in the Interstate Long-Distance Markets: Recent Evidence from AT&T Price Changes," *ex parte* filing in CC Docket No. 94-1, March 16, 1995.

Public Service Commission of West Virginia (Case No. 94-1103-T-GI) on behalf of Bell Atlantic - West Virginia: economic analysis of issues regarding proposed presubscription for intraLATA toll traffic in West Virginia, March 24, 1995.

- Kentucky Public Service Commission on behalf of South Central Bell Telephone Company, testimony concerning telecommunications productivity growth and price cap plans, April 18, 1995.
- Federal Communications Commission (CC Docket No. 79-252) on behalf of Bell Atlantic, BellSouth, SBC, and Pacific Telesis, “An Analysis of the State of Competition in Long-Distance Telephone Markets,” study attached to *ex parte* comments examining the competitiveness of interstate long-distance telephone markets, (with J. Douglas Zona), April 1995.
- California Public Utilities Commission, (U 1015 C) on behalf of Roseville Telephone Company, testimony regarding productivity measures in Roseville’s proposed new regulatory framework. Filed May 15, 1995. Rebuttal testimony filed January 12, 1996.
- Massachusetts Department of Public Utilities (Docket No. D.P.U. 94-185) on behalf of NYNEX: economic analysis of terms and conditions for efficient local competition. Filed May 19, 1995. Rebuttal testimony filed August 23, 1995.
- Affidavit to the U.S. Department of Justice on behalf of SBC Communications Inc. in *United States of America v. Western Electric Company, Inc. and American Telephone and Telegraph Company*, regarding Telefonos de Mexico’s (Telmex’s) provision of interexchange telecommunications services within the United States. Filed May 22, 1995.
- The Public Utilities Commission of Ohio (Case No. 94-1695-TP-ACE) on behalf of Cincinnati Bell Telephone Company: economic analysis of terms and conditions for efficient local competition. Filed May 24, 1995.
- Affidavit to the U.S. Department of Justice on behalf of SBC Communications Inc. in *United States of America v. Western Electric Company, Inc. and American Telephone and Telegraph Company*, regarding provision of interexchange telecommunications services to customers with independent access to interexchange carriers. Filed May 30, 1995.
- The New Jersey Board of Public Utilities (Docket No. TX94090388) on behalf of Bell Atlantic - New Jersey: economic analysis of issues regarding proposed presubscription for intraLATA toll traffic in New Jersey. Amended direct testimony filed April 17, 1995. Rebuttal Testimony filed May 31, 1995.
- Vermont Public Service Board, (Open Network Architecture Docket No. 5713) on behalf of New England Telephone Company, economic principles for local competition, interconnection and unbundling, direct testimony filed June 7, 1995. Rebuttal testimony filed July 12, 1995.
- State of Connecticut, Department of Public Utility Control, (DPUC Docket No. 95-03-01) on behalf of Southern New England Telephone Company, testimony concerning productivity growth targets in a proposed state price cap regulation plan. Filed June 19, 1995.

Federal Communications Commission (File Nos. W-P-C 7074) on behalf of Southern New England Telephone Company, affidavit supporting Section 214 applications to provide video dialtone services, July 6, 1995.

Louisiana Public Service Commission (Docket No. U-17949, Subdocket E) on behalf of South Central Bell Telephone Company, rebuttal testimony concerning productivity growth accounting and other aspects of a price regulation plan, July 24, 1995.

New York Public Service Commission (Case 94-C-0017) on behalf of New York Telephone Company, testimony regarding competition and market power in intrastate toll markets. Filed August 1, 1995.

Louisiana Public Service Commission (Docket No. U-20883, Subdocket A) on behalf of South Central Bell Telephone Company, rebuttal testimony concerning methods for measuring the cost of providing universal service, August 16, 1995.

Canadian Radio-Television and Telecommunications Commission, "Imputation Test to be Applied to Competitive Local Exchange Services," position paper on imputation for local exchange services filed in response to Telecom Public Notice CRTC 95-36 on behalf of Stentor on August 18, 1995.

US WATS v. AT&T: Retained by counsel for US WATS, a reseller of AT&T long distance services, plaintiff in an antitrust suit alleging monopolization and conspiracy in business long distance markets. Antitrust liability and damages. Confidential Report, August 22, 1995. Depositions September 30, October 1, October 12, December 3, 1995. Testimony October 18-20, 25-27, 30, 1995. Rebuttal testimony December 4, December 11, 1995.

California Public Utilities Commission, (Investigation No. I.95-05-047), on behalf of Pacific Bell, "Incentive Regulation and Competition: Issues for the 1995 Incentive Regulation Review," (with R.L. Schmalensee and T.J. Tardiff). Filed September 8, 1995, reply testimony filed September 18, 1995.

Mississippi Public Service Commission (Docket No. 95-UA-313) on behalf of BellSouth Telecommunications, Inc. d/b/a South Central Bell Telephone Company, rebuttal testimony addressing cost issues, as they pertain to price regulation raised in the direct testimony by intervenors. Filed October 13, 1995.

Mexican Secretariat of Communications and Transport on behalf of Southwestern Bell International Holdings Corporation, affidavit on interconnection regulation (with T.J. Tardiff). Filed October 18, 1995.

Affidavit to the U.S. District Court for the Eastern District of Virginia (Alexandria Division) on behalf of United States Telephone Association, *United States Telephone Association, et al., v. Federal Communications Commission, et al.*, (Civil Action No. 95-533-A) regarding the Section 214 process for local exchange companies providing cable television services. Filed October 30, 1995, (with A.E. Kahn).

Tennessee Public Service Commission (Docket No. 95-02499) on behalf of BellSouth Telecommunications, Inc. d/b/a BellSouth Telephone Company, testimony addressing the definition and measurement of the cost of supplying universal service. (Direct testimony filed October 20, 1995. Rebuttal testimony filed October 25, 1995). Additional testimony regarding economic principles underlying the creation of a competitively-neutral universal service fund: direct testimony filed October 30, 1995. Rebuttal testimony filed November 3, 1995.

Federal Communications Commission (CC Docket No. 95-145) on behalf of Bell Atlantic Corporation, affidavit examining economic issues raised in the investigation of Bell Atlantic's video dialtone tariff. Filed October 26, 1995. Supplemental Affidavit filed December 21, 1995.

New England Telephone and Telegraph Company, D/B/A NYNEX, State of Rhode Island (Docket No. 2252), testimony addressing the economic conditions under which competition in the local exchange and intraLATA markets will bring benefits to customers. Direct testimony, November 17, 1995.

Darren B. Swain, Inc. d/b/a U.S. Communications v. AT&T Corp., United States District Court for the Northern District of Texas, Dallas Division, Civil Action 394CV-1088D: Retained by counsel for U.S. Communications, a reseller of AT&T long distance services, plaintiff in an antitrust suit alleging monopolization in inbound business long distance markets. Antitrust liability and damages. Confidential Report, November 17, 1995.

Louisiana Public Service Commission (Docket No. U-20883) on behalf of South Central Bell Telephone Company, "Price Regulation and Local Competition in Louisiana," affidavit evaluating a framework for local competition and price regulation in Louisiana, November 21, 1995.

Louisiana Public Service Commission (Docket No. U-17949, Subdocket E) on behalf of South Central Bell Telephone Company, supplemental and rebuttal testimony concerning economic issues in depreciation accounting in the presence of competition and price cap regulation, November 17, 1995. Surrebuttal testimony, December 13, 1995, Further Surrebuttal testimony, January 12, 1996.

Federal Communications Commission (CC Docket No. 94-1) on behalf of the United States Telephone Association, "Economic Evaluation of Selected Issues from the Fourth Further Notice of Proposed Rulemaking in the LEC Price Cap Performance Review," Attachment C to the United States Telephone Association "Comments," filed December 18, 1995 (with T. Tardiff and C. Zarkadas). Reply Comments filed March 1, 1996.

State Corporation Commission of Virginia (Case No. PUC 950067) on behalf of Bell Atlantic - Virginia, Inc., rebuttal testimony concerning economic standards for the classification of services as competitive for regulatory purposes, January 11, 1996.

Mississippi Public Service Commission (Docket No. 95-UA-358) on behalf of BellSouth Telecommunications, Inc. d/b/a South Central Bell Telephone Company, testimony regarding universal service fund issues. Filed January 17, 1996. Rebuttal testimony filed February 28, 1996.

North Carolina Utilities Commission (Docket No. P-7, Sub 825; P-10, Sub 479) on behalf of Carolina Telephone and Telegraph Company and Central Telephone Company, direct and rebuttal testimony regarding price cap regulation for small telephone companies, February 9, 1996.

FreBon International Corp. vs. BA Corp. Civil Action, No. 94-324 (GK): Defendants' Amended Expert Disclosure Statement, regarding markets for teleconferencing services. Filed under seal February 15, 1996.

Rhode Island Public Utilities Commission (Docket No. 2370), on behalf of New England Telephone and Telegraph Company, D/B/A NYNEX: economic review and revision of the Rhode Island price cap plan. Direct testimony, February 23, 1996. Rebuttal testimony filed June 25, 1996.

Federal Communications Commission (CC Docket No. 95-185) on behalf of NYNEX, "Affidavit Concerning Interconnection Between Local Exchange Carriers and Commercial Mobile Radio Service Providers," filed March 4, 1996.

Maryland Public Service Commission (Case No. 8715), on behalf of Bell Atlantic - Maryland: rebuttal testimony on the economic criteria for the reclassification of telecommunications services. Filed March 14, 1996, surrebuttal testimony filed April 1, 1996.

Pennsylvania Public Utility Commission (Docket Nos. A-310203F0002, A-310213F0002, A-310236F0002 and A-310258F0002), on behalf of Bell Atlantic - Pennsylvania: rebuttal testimony to evaluate costing and pricing principles and cost models. Filed March 21, 1996.

Federal Communications Commission (CC Docket No. 96-45) on behalf of BellSouth Corporation, "Comments on Universal Service," (with Kenneth Gordon), analysis of proposed rules to implement the universal service requirements of the Telecommunications Act of 1996, filed April 12, 1996.

Pennsylvania Public Utility Commission (Docket No. P-00961024), on behalf of Commonwealth Telephone Company: economic appraisal of a price cap regulation proposal, Direct testimony filed April 15, 1996. Rebuttal testimony filed July 19, 1996.

- Pennsylvania Public Utility Commission (Docket No. R-00963550), on behalf of Bell Atlantic - Pennsylvania: economic consequences of rate rebalancing, Direct testimony filed April 26, 1996. Rebuttal testimony filed July 5, 1996.
- Federal Communications Commission (CC Docket No. 96-46), on behalf of Bell Atlantic, BellSouth, GTE, Lincoln, Pacific Bell and SBC Communications, Inc., ex parte affidavit on costing principles and cross-subsidization in broadband, joint-use networks, April 26, 1996.
- Federal Communications Commission (CC Docket No. 96-98) videotaped presentation on economic costs for interconnection, FCC Economic Open Forum, May 20, 1996.
- Tennessee Public Service Commission (In re: The Avoidable Costs of Providing Bundled Services for Resale by Local Exchange Telephone Companies) on behalf of BellSouth Telecommunications, Inc. (Docket No. 96-00067): economic costing and pricing principles for resold and unbundled services. May 24, 1996. Refiled with the Tennessee Regulatory Authority (Docket No. 96-00067), August 23, 1996.
- Federal Communications Commission (CC Docket No. 96-112), on behalf of the Southern New England Telephone Company: cost allocation between telephony and broadband services, Affidavit filed May 31, 1996.
- New York Public Service Commission (Case Nos. 95-C-0657, 94-C-0095, 91-C-1174) on behalf of New York Telephone Company, costing principles for resold services. Filed May 31, 1996. Costing and pricing principles for unbundled network elements. Filed June 4, 1996. Rebuttal testimony filed July 15, 1996.
- Canadian Radio-Television and Telecommunications Commission, in response to CRTC Telecom Public Notice CRTC 96-8, "Economic Aspects of Canadian Price Cap Regulation," on behalf of the Stentor companies. Filed June 10, 1996.
- Canadian Radio-Television and Telecommunications Commission, in response to CRTC Telecom Public Notice CRTC 96-8, "Economic Aspects of Price Cap Regulation for MTS NetCom Inc.," on behalf of MTS Net Com, Inc. Filed June 10, 1996.
- Federal Communications Commission (CC Docket No. 96-112), on behalf of Bell Atlantic: reply comments concerning cost allocations between telephony and broadband services, Affidavit filed June 12, 1996.
- Affidavit to the Superior Court Department of the Trial Court (Civil Action No. 95-6363F), on behalf of New England Telephone and Telegraph Company, d/b/a NYNEX: in opposition to Plaintiffs' Motion for Class Certification. Filed July 1996.
- Federal Communications Commission (CC Docket No. 96-46), on behalf of Bell Atlantic, BellSouth, GTE, Lincoln, Pacific and SBC, Declaration concerning the use of efficient component pricing in open video systems. Filed July 5, 1996.

Federal Communications Commission (CC Docket No. 96-98), on behalf of the United States Telephone Association, Affidavit concerning technical qualities of the Staff Industry Demand and Supply Simulation Model. Filed July 8, 1996; *ex parte* letters filed July 22, 1996 and July 23, 1996.

State of Connecticut, Department of Public Utility Control, (DPUC Docket No. 95-06-17) on behalf of Southern New England Telephone Company: testimony concerning economic principles of costing and cost recovery. Filed July 23, 1996.

New York Public Service Commission (Case Nos. 93-C-0451 and 91-C-1249) on behalf of New York Telephone Company, statistical issues in the calculation of damages in the provision of Mass Announcement Services: Rebuttal testimony filed July 23, 1996.

Federal Communications Commission (CC Docket No. 96-45), on behalf of BellSouth Corporation, comments concerning the use of proxy cost models for measuring the cost of universal service. Filed August 9, 1996 (with Aniruddha Banerjee).

The New Jersey Board of Public Utilities on behalf of Bell Atlantic - New Jersey: "Economic Competition in Local Exchange Markets," position paper on the economics of local exchange competition filed in connection with arbitration proceedings, August 9, 1996 (with Kenneth Gordon and Alfred E. Kahn).

Federal Communications Commission (CC Docket No. 96-149), on behalf of Bell Atlantic, Affidavit concerning safeguards for in-region supply of interexchange services by local exchange carriers. Filed August 15, 1996.

The New Jersey Board of Public Utilities (Docket No. TX95120631) on behalf of Bell Atlantic - New Jersey, incremental costs of residential basic exchange service. Filed August 15, 1996. Rebuttal testimony filed August 30, 1996.

Pennsylvania Public Utility Commission (Docket No. R-963550 C0006), on behalf of Bell Atlantic - Pennsylvania: economic consequences of rate rebalancing, Direct testimony filed August 30, 1996.

Louisiana Public Service Commission (Docket No. U-U-22020) on behalf of South Central Bell Telephone Company, testimony concerning economic principles determining wholesale prices for resold services. Filed August 30 1996. Rebuttal testimony filed September 13, 1996.

Vermont Public Service Board (Docket No. 5900) on behalf of NYNEX, testimony regarding the economic effects of the proposed merger between Bell Atlantic and NYNEX. Filed September 6, 1996.

Maine Public Utilities Commission (Docket No. 96-388) on behalf of NYNEX, testimony regarding the economic effects of the proposed merger between Bell Atlantic and NYNEX, Direct Testimony filed September 6, 1996. Rebuttal Testimony filed October 30, 1996.

Tennessee Regulatory Authority (In re: The Avoidable Costs of Providing Bundled Services for Resale by Local Exchange Telephone Companies) on behalf of BellSouth Telecommunications, Inc. (Docket No. 96-01331): economic costing and pricing principles for resold and unbundled services. Filed September 10, 1996. Rebuttal testimony filed September 20, 1996.

The New Jersey Board of Public Utilities (Docket No. TO96070519) on behalf of Bell Atlantic - New Jersey: evaluation of proxy models of the incremental cost of unbundled network elements, testimony filed September 18, 1996.

Pennsylvania Public Utility Commission (Docket No. A-310258F0002 - Interconnection Arbitration, Eastern Telelogic Corporation/Bell Atlantic) on behalf of Bell Atlantic-Pennsylvania, direct and rebuttal testimony on economic costs of interconnection and unbundled network elements, September 23, 1996.

Massachusetts Department of Public Utilities (Docket Nos. D.P.U. 96-73/74, 96-75, 96-80/81, 96-83, 96-94) on behalf of NYNEX: economic analysis of costs avoided from resale of local exchange services. Testimony filed September 27, 1996. Rebuttal Testimony filed October 16, 1996.

The New Jersey Board of Public Utilities (Docket No. TX95120631) on behalf of Bell Atlantic - New Jersey: economic analysis of the avoided costs from resale of local exchange services. Rebuttal testimony filed September 27, 1996.

New Hampshire Public Service Commission, (Docket DE 96-252) on behalf of NYNEX: economic analysis of costs avoided from resale of local exchange services. Filed October 1, 1996.

New Hampshire Public Service Commission (Docket DE 96-220) on behalf of NYNEX, testimony regarding the economic effects of the proposed merger between Bell Atlantic and NYNEX. Filed October 10, 1996.

Massachusetts Department of Public Utilities (Docket Nos. D.P.U. 96-73/74, 96-75, 96-80/81, 96-83, 96-94) on behalf of NYNEX: Arbitration of interconnection agreements under the Telecommunications Act of 1996. Filed October 11, 1996. Rebuttal Testimony filed October 30, 1996.

Federal Communications Commission (CC Docket No. 96-45), on behalf of the United States Telephone Association, "Not the Real McCoy: A Compendium of Problems with the Hatfield Model." Filed October 15, 1996

New Hampshire Public Service Commission, (Docket DE 96-252) on behalf of NYNEX: Arbitration of interconnection agreements under the Telecommunications Act of 1996. Filed October 23, 1996.

Federal Communications Commission (Tracking No. 96-0221) on behalf of NYNEX and Bell Atlantic, affidavit concerning the competitive effects of the proposed NYNEX-Bell Atlantic merger. Filed October 23, 1996 (with Richard Schmalensee).

New Jersey Board of Public Utilities (Docket No. T096080621: MCI/Bell Atlantic Arbitration) on behalf of Bell Atlantic-New Jersey. Rebuttal testimony concerning the pricing of unbundled network elements, November 7, 1996.

Affidavit to the Federal Communications Commission, on behalf of SBC Communications, Inc., (Docket No. 96-149), regarding Commission's proposed rules and their impact on joint marketing. Filed November 14, 1996 (with Paul B. Vasington).

New York Public Service Commission (Case 96-C-0603) on behalf of NYNEX and Bell Atlantic, *Initial Panel Testimony*, regarding the economic effects of the proposed merger between Bell Atlantic and NYNEX. Filed November 25, 1996. *Reply Panel Testimony* filed December 12, 1996.

Alabama Public Service Commission (Docket No. 25677), on behalf of BellSouth Telecommunications, Inc., direct testimony regarding economic aspects of avoided costs of services supplied for resale. Filed November 26, 1996.

Delaware Public Utilities Commission, on behalf of Bell Atlantic - Delaware, direct testimony regarding costs and pricing of interconnection and network elements. Filed December 16, 1996. Rebuttal testimony (proprietary) filed February 11, 1997.

State Corporation Commission of Virginia, on behalf of Bell Atlantic-Virginia, (Case No. PUC960), direct testimony regarding costing and pricing of interconnection and unbundled network elements. Filed December 20, 1996. Rebuttal testimony filed June 10, 1997 (Case No. PUC970005).

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Georgia Public Service Commission (Docket No. 6863-U) on behalf of BellSouth Long Distance, Inc., direct testimony concerning benefits from BellSouth participation in long distance service markets. Filed January 3, 1997. Rebuttal testimony filed February 24, 1997.

Public Service Commission of Maryland, on behalf of Bell Atlantic-Maryland, (Case No. 8731-II), statement regarding costing and pricing of interconnection and unbundled network elements. Filed January 10, 1997. Rebuttal testimony filed April 4, 1997.

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Association, *Remarks on Proxy Cost Models*, CC Docket No. 96-45 (videotape filed in docket). Filed January 14, 1997.

Public Service Commission of the District of Columbia (Case No. 962), on behalf of Bell Atlantic - Washington, D.C., direct testimony regarding costing and pricing of interconnection and network elements. Filed January 17, 1997. Rebuttal testimony filed May 2, 1997.

Connecticut Department of Public Utilities (DPUC Docket No. 96-09-22), on behalf of the Southern New England Telephone Company. Rebuttal testimony regarding alternative models of cost. Filed January 24, 1997.

Federal Communications Commission (CC Docket No. 96-262 et. al.), statement on behalf of United States Telephone Association, "Economic Aspects of Access Reform." Filed on January 29, 1997 (with Richard Schmalensee). Rebuttal filed on February 14, 1997.

Pennsylvania Public Utility Commission, on behalf of Bell Atlantic-Pennsylvania, statement regarding costs and benefits from Bell Atlantic entry into interLATA telecommunications markets. Filed February 10, 1997. Rebuttal testimony filed March 21, 1997.

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Federal Communications Commission, on behalf of Bell Atlantic: "An Analysis of Conceptual Issues Regarding Proxy Cost Models", a response to FCC Staff Report on issues regarding Proxy Cost Models. Filed February 13, 1997.

Public Service Commission of West Virginia (Case Nos. 96-1516-T-PC, 96-1561-T-PC, 96-1009-T-PC, and 96-1533-T-T) on behalf of Bell Atlantic - West Virginia: direct testimony regarding costing and pricing of interconnection and unbundled network elements. Filed February 13, 1997. Rebuttal testimony filed February 20, 1997.

New York Public Service Commission on behalf of New York Telephone Company, "Competitive Effects of Allowing NYNEX To Provide InterLATA Services Originating In New York State," public interest analysis of NYNEX's proposed entry into in-region long distance service. Filed February 18, 1997 (with Harold Ware and Richard Schmalensee).

Public Utilities Commission of Ohio (Case No. 96-899-TP-ALT) on behalf of Cincinnati Bell Telephone Company: direct testimony regarding CBT's proposed rate rebalancing and price regulation plan. Filed February 19, 1997.

Delaware Public Utilities Commission, on behalf of Bell Atlantic - Delaware: statement regarding costs and benefits from Bell Atlantic entry into interLATA telecommunications markets. Filed February 26, 1997. Rebuttal testimony filed April 28, 1997.

- The New Jersey Board of Public Utilities on behalf of Bell Atlantic - New Jersey (Docket No. T097030166) economic analysis of costs and benefits from Bell Atlantic provision of interLATA services, statement filed March 3, 1997, reply affidavit filed May 15, 1997.
- Federal Communications Commission (CC Docket 96-262 et al.), on behalf of USTA: a report entitled, "An Analysis of the Welfare Effects of Long Distance Market Entry by an Integrated Access and Long Distance Provider", *ex parte* filed March 7, 1997 (with Richard Schmalensee, Doug Zona and Paul Hinton).
- Maryland Public Service Commission, on behalf of Bell Atlantic - Maryland: statement regarding consumer benefits from Bell Atlantic's provision of interLATA service, filed March 14, 1997.
- Louisiana Public Service Commission, on behalf of BellSouth Long Distance, Inc. (Docket No. U-22252), direct testimony regarding the probable economic benefits to consumers in Louisiana from entry by BellSouth into the interLATA long distance market. Filed March 14, 1997. Rebuttal testimony filed May 2, 1997. Supplemental testimony filed May 27, 1997.
- Federal Communications Commission (CC Docket 96-262 et al.), on behalf of the United States Telephone Association: a report entitled, "An Update of the FCC Short-Term Productivity Study (1985-1995)", *ex parte* filed March 1997.
- Public Service Commission of West Virginia on behalf of Bell Atlantic - West Virginia: economic analysis of issues regarding Bell Atlantic's entry into the interLATA long distance market. Filed March 31, 1997.
- South Carolina Public Service Commission, on behalf of BellSouth Long Distance, Inc., (Docket No. 97-101-C) : direct testimony regarding the probable economic benefits to consumers in South Carolina from entry by BellSouth into the interLATA long distance market. Filed April 1, 1997. Rebuttal testimony filed June 30, 1997.
- Public Utilities Commission of Ohio (Case No. 97-152-TP-ARB), on behalf of Cincinnati Bell Telephone Company: direct testimony regarding the application of MCI Telecommunications Corporation Petition for Arbitration Pursuant to Section 252 (b) of the Telecommunications Act of 1996. Filed April 2, 1997.
- Kentucky Public Service Commission (Administrative Case No. 96-608) on behalf of BellSouth Long Distance, Inc., testimony regarding the economic effects of BellSouth entry into interLATA services. Filed April 14, 1997. Rebuttal testimony filed April 28, 1997, supplemental rebuttal testimony filed August 15, 1997.
- Federal Communications Commission (CC Docket No. 96-149), on behalf of Bell Atlantic, BellSouth, NYNEX, Pacific Bell and SBC: affidavit concerning economic issues raised by the BOC supply of interLATA services to an affiliate. Filed April 17, 1997.
- Maine Public Utilities Commission (Docket No. 97-505) on behalf of NYNEX: direct testimony

regarding economic principles for setting prices and estimating costs for interconnection. Filed April 21, 1997. Rebuttal testimony filed October 21, 1997.

State of New York Public Service Commission (Case 94-C-0095 and 28425), on behalf of NYNEX, *Initial Panel Testimony*: direct testimony regarding InterLATA Access Charge Reform. Filed May 8, 1997. *Rebuttal Panel Testimony* filed July 8, 1997.

Federal Communications Commission (CC Docket Nos. 93-193, Phase 1, Part 2, 94-65), on behalf of Bell Atlantic: affidavit concerning allocation of earnings sharing and refunds in the local exchange carrier price cap plan. Filed May 19, 1997.

Maine Public Utilities Commission on behalf of NYNEX: affidavit regarding competitive effects of NYNEX entry into interLATA markets. Filed May 27, 1997 (with Kenneth Gordon, Richard Schmalensee and Harold Ware).

Alabama Public Service Commission, on behalf of BellSouth Long Distance, Inc., (Docket No. 25835): direct testimony regarding the probable economic benefits to consumers in Alabama from entry by BellSouth into the interLATA long distance market. Filed June 18, 1997. Rebuttal testimony filed August 8, 1997.

Pennsylvania Public Utility Commission (Docket No. I-00960066), on behalf of Bell Atlantic: direct testimony providing an economic framework for the intrastate carrier switched access rates charged by Bell Atlantic. Filed June 30, 1997. Rebuttal testimony filed July 29, 1997. Surrebuttal testimony filed August 27, 1997.

Vermont Public Service Board (Docket No. 5713), on behalf of Bell Atlantic – Vermont, direct testimony regarding economic principles for setting prices and estimating costs for interconnection. Filed July 31, 1997. Rebuttal testimony filed January 9, 1998. Surrebuttal testimony filed February 26, 1998. Supplemental rebuttal testimony filed March 4, 1998.

North Carolina Utilities Commission (Docket No. P-55, Sub1022) on behalf of BellSouth Long Distance, Inc.: direct testimony regarding the likely economic benefits to consumers in North Carolina from entry by BellSouth into the interLATA long distance market. Filed August 5, 1997. Rebuttal testimony filed September 15, 1997.

State of Connecticut, Department of Public Utility Control (Docket Nos. 95-03-01, 95-06-17 and 96-09-22), on behalf of Southern New England Telephone Company: direct testimony discussing economic principles the DPUC should use in evaluating SNET's joint and common overhead and network support expenses. Filed August 29, 1997. Rebuttal testimony filed December 17, 1998.

Alabama Public Service Commission, on behalf of BellSouth Telecommunications, Inc., (Docket No. 26029): rebuttal testimony of intervenor testimonies in BellSouth's cost and unbundled network element pricing docket in Alabama. Filed September 12, 1997.

Mississippi Public Service Commission (Docket No. 97-AD-0321), on behalf of BellSouth Long Distance, Inc., direct testimony regarding the likely economic benefits to consumers in Mississippi from entry by BellSouth into the interLATA long distance market. Filed July 1, 1997. Rebuttal testimony filed September 29, 1997.

The New Jersey Board of Public Utilities (Docket No. TX95120631) on behalf of Bell Atlantic - New Jersey: economic analysis of proposed universal service funds. Direct testimony filed September 24, 1997. Rebuttal testimony filed October 18, 1997.

State of Connecticut, Department of Public Utility Control (Docket No. 96-04-07) on behalf of Southern New England Telephone Company: direct testimony regarding economic principles guiding access charge reform. Filed October 16, 1997.

Tennessee Regulatory Authority (In re: Petition to Convene a Contested Case Proceeding to Establish "Permanent Prices" for Interconnection and Unbundled Network Elements) on behalf of BellSouth Telecommunications, Inc. (Docket No. 97-01262): rebuttal testimony regarding costing principles on which to base prices of unbundled network elements. Filed October 17, 1997.

Pennsylvania Public Utility Commission (Docket No. I-00940035), on behalf of Bell Atlantic: direct testimony regarding the relationship between access charge reform and universal service funding. Filed October 22, 1997.

Florida Public Service Commission on behalf of BellSouth, "Local Telecommunications Competition: An Evaluation of a Proposal by the Communications Staff of the Florida Public Service Commission," filed November 21, 1997 (with A. Banerjee).

South Carolina Public Service Commission (Docket No. 97-374-C), on behalf of BellSouth Telecommunications, Inc.: rebuttal testimony concerning general economic principles for the pricing and costing of interconnection and unbundled network elements. Filed November 25, 1997.

Rhode Island Public Utilities Commission, on behalf of Bell Atlantic – Rhode Island: direct testimony discussing basic economic principles regarding costs and prices of interconnection and unbundled network elements. Filed November 25, 1997.

Federal Communications Commission (File No. SCL-97-003), on behalf of ATU Long Distance: affidavit concerning the economic effects of classifying a proposed undersea cable between Alaska and the lower 48 states as a private carrier. Filed December 8, 1997.

Federal Communications Commission (CC Docket No. 80-286), on behalf of Bell Atlantic: affidavit concerning proposed reforms of jurisdictional separations. Filed December 10, 1997.

North Carolina Utilities Commission (Docket No. P-100, SUB 133d), on behalf of BellSouth Telecommunications: direct testimony on the proper economic basis for determining costs and

prices of interconnection, unbundled network elements, and operating support systems. Filed December 15, 1997. Rebuttal filed March 9, 1998.

Massachusetts Department of Public Utilities (Docket No. DTE 98-15), on behalf of Bell Atlantic – MA: direct testimony regarding the method used to determine wholesale (avoided cost) discount that applies to resold retail services. Filed January 16, 1998.

Vermont Public Service Board (Docket no. 6000), on behalf of Bell Atlantic: direct testimony examining the likely benefits from adopting a price regulation plan. Filed January 19, 1998.

Federal Communications Commission (*ex parte* CC Docket No. 96-262 et. al.), “The Need for Carrier Access Pricing Flexibility in Light of Recent Marketplace Developments: A Primer,” research paper prepared on behalf of United States Telephone Association. Filed on January 21, 1998 (with Richard Schmalensee).

Colorado Public Utilities Commission (Docket No. 97A-540T), on behalf of U S WEST: testimony concerning the economic effects of a proposed price regulation plan. Direct testimony filed January 30, 1998. Rebuttal testimony filed May 14, 1998.

California Public Utilities Commission, on behalf of Pacific Bell: Comments on the economic principles for updating Pacific Bell’s price cap plan. Filed February 2, 1998.

Massachusetts Department of Public Utilities (Docket No. D.P.U./D.T.E. 94-185-C) on behalf of Bell Atlantic: economic analysis of the usefulness of a regulatory price floor for wholesale services. Affidavit filed February 6, 1998. Reply Affidavit filed February 19, 1998.

Pennsylvania Public Utility Commission (Docket No. P-00971307), on behalf of Bell Atlantic: direct testimony concerning the classification of Bell Atlantic’s business services in Pennsylvania as competitive and the calculation of an imputation price floor for those services. Filed February 11, 1998. Rebuttal filed February 18, 1998.

Alabama Public Service Commission (Docket No. 25980), on behalf of BellSouth Telecommunications: rebuttal testimony regarding revenue benchmarks and other matters in universal service funding. Filed February 13, 1998.

North Carolina Utilities Commission (Docket No. P-100, SUB 133g), on behalf of BellSouth Telecommunications: direct testimony on appropriate economic principles for sizing the state universal service fund. Filed February 16, 1998. Rebuttal filed April 13, 1998.

Mississippi Public Service Commission (Docket No. 98-AD-035), on behalf of BellSouth Telecommunications: direct testimony regarding universal service funding and price benchmark issues. Filed February 23, 1998, rebuttal testimony filed March 6, 1998.

State of Connecticut, Department of Public Utility Control (Docket No. 98-02-33), on behalf of Southern New England Telephone Company: direct testimony regarding reclassification of

custom calling services as emerging competitive. Filed February 27, 1998.

Federal Communications Commission, *In the Matter of Applications of WorldCom, Inc. and MCI Communications Corporation for Transfer of Control of MCI Communications Corporation to WorldCom, Inc.* (CC Docket No. 97-211), affidavit on behalf of GTE Corporation analyzing the likely economic effects of the proposed acquisition of MCI by WorldCom, (with R. Schmalensee), March 13, 1998, reply affidavit filed May 26, 1998.

Mississippi Public Service Commission (Docket No. 97-AD-544), on behalf of BellSouth Telecommunications: rebuttal testimony regarding economic issues of costing and pricing unbundled network elements. Filed March 13, 1998.

New Hampshire Public Service Commission (Docket No. 97-171, Phase II), on behalf of Bell Atlantic – New Hampshire: direct testimony discussing the basic economic principles regarding costs and prices of interconnection and unbundled network elements, filed March 13, 1998. Rebuttal filed April 17, 1998.

State of New York Public Service Commission (Cases 95-C-0657, 94-C-0095, 91-C-1174 and 96-C-0036), on behalf of Bell Atlantic, *Panel Testimony of Bell Atlantic – New York on Costs and Rates for Miscellaneous Phase 3 Services*: panel testimony regarding statistical sampling issues in cost studies for non-recurring charges. Filed March 18, 1998. Rebuttal filed June 3, 1998.

Federal Communications Commission, *In the Matter of Customer Impact of New Access Charges* (CC Docket Nos. 96-262 and 96-45), affidavit on behalf of the United States Telephone Association analyzing long distance price reductions stemming from recent access charge reductions. Filed March 18, 1998.

Federal Communications Commission, *In the Matter of MCI Telecommunications Corp. Petition for Prescription of Tariffs Implementing Access Charge Reform* (CCB/CPD 98-12), affidavit on behalf of Bell Atlantic analyzing economic issues in MCI's petition for changes in the level and structure of interstate access charges. Filed March 18, 1998.

Subcommittee on Communications of the Senate Committee on Commerce, Science and Transportation, *Statement* and oral testimony regarding long distance competition and Section 271 of the Telecommunications Act of 1996. Filed March 25, 1998.

Tennessee Regulatory Authority (Docket No. 97-00888), on behalf of BellSouth Telecommunications, Inc.: direct testimony regarding appropriate economic principles for sizing the state universal service fund, Filed April 3, 1998. Rebuttal filed April 9, 1998.

Massachusetts Department of Telecommunications and Energy (D.P.U. 96-3/74, 96-75, 96-80/81, 96-83, & 96-94), on behalf of Bell Atlantic – Massachusetts: rebuttal testimony discussing the types of costs for OSSs, filed April 29, 1998.

Connecticut Department of Public Utility Control, on behalf of SBC Communications Inc. and

Southern New England Telecommunications Corporation: direct testimony regarding the SBC-SNET merger, filed June 1, 1998.

California Public Utilities Commission, on behalf of Pacific Bell: reply comments regarding proposed changes to the price cap plan, filed June 19, 1998.

The New Jersey Board of Public Utilities (BPU Docket No. TO97100808, OAL Docket No. PUCOT 11326-97N) on behalf of Bell Atlantic - New Jersey: economic analysis of imputation rules for long distance services. Direct testimony filed July 8, 1998, rebuttal testimony filed September 18, 1998.

Federal Communications Commission, Merger of SBC Communications Inc. and Ameritech Corporation, comments on behalf of SBC and Ameritech analyzing the likely effects of the proposed merger on competition. (with R. Schmalensee) Filed July 21, 1998, reply affidavit filed November 11, 1998.

Massachusetts Department of Telecommunications and Energy (Docket No. 85-15, Phase III, Part 1), on behalf of Bell Atlantic – Massachusetts: rebuttal testimony discussing appropriate forward-looking technology for costing network elements, filed August 31, 1998.

Florida Public Service Commission (Docket No. 980696-TP) on behalf of BellSouth Telecommunications, Inc.: rebuttal testimony regarding measurements of cost for sizing a universal service fund, filed September 2, 1998.

Massachusetts Department of Telecommunications and Energy (Docket No. 98-15, Phase II), on behalf of Bell Atlantic – Massachusetts: rebuttal testimony concerning the avoided costs of resold services, filed September 8, 1998.

Rhode Island Public Utilities Commission (Docket No. 2681), on behalf of Bell Atlantic-Rhode Island: rebuttal testimony regarding costs for OSSs, filed September 18, 1998.

Florida Public Service Commission (Docket No. 980000-SP) on behalf of BellSouth Telecommunications, Inc.: “Costing and Pricing Principles for Determining Fair and Reasonable Rates Under Competition,” economic principles for pricing local exchange services, filed September 24, 1998.

Massachusetts Department of Telecommunications and Energy (Docket No. 98-67), on behalf of Bell Atlantic-Massachusetts: direct testimony regarding regulatory rules/economic principles pertaining to exogenous adjustment factors in Bell Atlantic’s price cap formula, filed September 25, 1998.

Federal Communications Commission, *In the Matter of United States Telephone Association Petition for Rulemaking—1998 Biennial Regulatory Review*, “Economic Standards for the Biennial Review of Interstate Telecommunications Regulation,” economic rationale for regulatory simplification, Attachment to the Petition for Rulemaking of the United States Telephone

Association, filed September 30, 1998 (with Robert W. Hahn).

Michigan Public Service Commission (Case No. U-11756), on behalf of Ameritech Michigan: direct testimony regarding efficient prices for services supplied to independent phone payers, filed October 9, 1998.

Pennsylvania Public Utility Commission (Docket No. P-00981410), on behalf of The United Telephone Company of Pennsylvania: direct testimony regarding role of productivity offset in a price cap plan, filed October 16, 1998. Rebuttal testimony filed February 4, 1999.

Federal Communications Commission, (CC Docket No. 96-262), “AT&T, MCI, and Sprint Failed to Pass Through the 1998 Interstate Access Charge Reductions to Consumers,” study of long distance pricing, filed *ex parte* on behalf of the United States Telephone Association, October 16, 1998 (with P.S. Brandon)

Nebraska Public Service Commission, on behalf of US WEST, (Application No. C-1628), economic analysis of local exchange and exchange access pricing, direct testimony filed October 20, 1998; reply testimony filed November 20, 1998.

Massachusetts Department of Telecommunications and Energy (Docket No. 98-85), on behalf of Bell Atlantic-Massachusetts: direct testimony regarding efficiency changes from intraLATA presubscription, filed October 20, 1998.

Federal Communications Commission, (CC Docket No. 96-262), “Assessment of AT&T’s Study of Access Charge Pass-Through,” study of long distance pricing, filed *ex parte* on behalf of the United States Telephone Association, October 22, 1998 (with P.S. Brandon)

Federal Communications Commission, (CC Docket Nos. 96-262, 94-1, 97-250 and RM 9210), “Access Reform Again: Market-Based Regulation, Pricing Flexibility and the Universal Service Fund,” Attachment A to the Comments of the United States Telephone Association, filed October 26, 1998; “Productivity and Pricing Flexibility: Reply Comments,” Attachment A to the Reply Comments of the United States Telephone Association, filed November 9, 1998.

Vermont Public Service Board (Docket No. 6077), on behalf of Bell Atlantic-Vermont: rebuttal testimony regarding application of imputation standard, filed November 4, 1998.

Florida Public Service Commission (Docket No. 980000-SP) on behalf of BellSouth Telecommunications, Inc.: “Determining Fair and Reasonable Rates Under Competition: Response to Major Themes at the FPSC Workshop,” economic principles for pricing local exchange services, filed November 13, 1998.

Maryland Public Service Commission (Case No. 8786), on behalf of Bell Atlantic - Maryland: rebuttal testimony regarding economic principles underlying costs and prices for non-recurring services and access to operations support systems. Filed November 16, 1998.

Federal Communications Commission, (CC Docket No. 98-137), Affidavit on behalf of the United States Telephone Association, Review of Depreciation Requirements for Incumbent Local Exchange Carriers, November 23, 1998. (with A. Banerjee).

South Carolina Public Service Commission (Docket No. 97-124-C), on behalf of BellSouth Telecommunications, Inc.: rebuttal testimony concerning economic principles for pricing interconnection services supplied to payphone providers. Filed December 7, 1998.

Rhode Island Public Utilities Commission (Docket No. 2681), on behalf of Bell Atlantic: rebuttal testimony regarding entry into the local services telecommunications market. Filed January 15, 1999.

Pennsylvania Public Utility Commission, on behalf of Bell Atlantic-Pennsylvania: A report entitled "Promises Fulfilled; Bell Atlantic-Pennsylvania's Infrastructure Development." Filed January 15, 1999 (with Charles J. Zarkadas, Agustin J. Ros, and Jaime C. d'Almeida).

Federal Communications Commission (Docket No. 99-24), affidavit on behalf of Bell Atlantic: economic requirements for regulatory forbearance for special access services. Filed January 20, 1999 (with Karl McDermott). Reply affidavit responding to claims that Bell Atlantic retains market power in the provision of special access filed April 8, 1999.

Alaskan Public Utilities Commission, (Docket Nos. U-98-140/141/142 and U-98-173/174), testimony regarding the economic effects on competition of the acquisitions of Telephone Utilities of Alaska, Telephone Utilities of the Northland, Inc., and PTI Communications of Alaska by ALEC Acquisition Sub Corporation and of Anchorage Telephone Utility and ATU Long Distance, Inc. by Alaska Communications Systems, Inc. Filed February 2, 1999. Rebuttal testimony filed March 24, 1999.

Comisión Federal de Telecomunicaciones de México ("Cofetel"), "Economic Parameter Values in the Telmex Price Cap Plan," arbitrator's report on behalf of COFETEL and Telmex regarding the renewal of the price cap plan for Telmex, February 15, 1999.

Washington Public Utilities Commission (Docket No. UT-990300), on behalf of US WEST, regarding US WEST's interconnection arbitration with AirTouch Paging in Washington. Direct testimony filed February 24, 1999; rebuttal testimony filed March 8, 1999.

The New Jersey Board of Public Utilities (OAL DOCKET Nos. PUCOT 11269-97N, PUCOT 11357-97N, PUCOT 01186-94N AND PUCOT 09917-98N) on behalf of Bell Atlantic - New Jersey: economic issues regarding alleged subsidization of payphone services. Rebuttal testimony filed March 8, 1999; surrebuttal testimony filed June 21, 1999.

Colorado Public Utilities Commission (Docket No. 99A-001T), on behalf of US WEST, regarding US WEST's interconnection arbitration with AirTouch Paging in Colorado. Rebuttal testimony filed March 15, 1999.

Massachusetts Department of Telecommunications and Energy (Docket No. D.T.E. 97-116-B), on behalf of Bell Atlantic-Massachusetts, affidavit regarding consequences for economic efficiency of different intercarrier compensation rules for ISP-bound traffic. Filed March 29, 1999.

Kentucky Public Service Commission (Docket No. 98-292), on behalf of Cincinnati Bell Telephone Company, direct testimony regarding proposed price regulation plan containing earnings sharing requirements. Filed April 5, 1999.

New Hampshire Public Utilities Commission (Docket No. 99-018), on behalf of Bell Atlantic, direct testimony regarding the use of Total Element Long Run Incremental Cost (TELRIC) methodology as the basis for prices in special contracts. Filed April 7, 1999. Rebuttal testimony filed April 23, 1999.

Pennsylvania Public Utility Commission (Docket Nos. A-310200F0002, A-311350F0002, A-310222F0002, A-310291F0003), on behalf of Bell Atlantic Corporation and GTE Corporation, rebuttal testimony regarding economic issues raised in the proposed merger of Bell Atlantic and GTE. Filed April 22, 1999.

Wyoming Public Service Commission (Docket No. 70000-TR-99), on behalf of US West Communications, direct testimony evaluating proposed prices of non-competitive US West services with regards to cost, pricing, competition, & regulation. Filed April 26, 1999.

Vermont Public Service Board (Docket No. 6167), on behalf of Bell Atlantic, rebuttal testimony regarding reduction of access charges & pricing of new services. Filed May 20, 1999. Supplemental testimony filed May 27, 1999.

State Corporation Commission of Virginia *In re: Joint Petition of Bell Atlantic Corporation and GTE Corporation for approval of agreement and plan of merger*, economic effects of the proposed merger of Bell Atlantic and GTE. Filed May 28, 1999, rebuttal testimony filed October 8, 1999.

Connecticut Department of Public Utility Control (Docket No. 95-06-17RE02), on behalf of The Southern New England Telephone Company, rebuttal testimony regarding local competition and reseller market. Filed June 8, 1999.

Ohio Public Utility Commission (Docket No. 98-1398-TP-AMT), on behalf of Bell Atlantic and GTE, rebuttal testimony concerning economic effects of the proposed merger of Bell Atlantic and GTE. Filed June 16, 1999, substitute rebuttal testimony filed October 12, 1999.

Connecticut Department of Public Utilities (Docket No. 99-03-17), on behalf of The Southern New England Telephone Company, rebuttal testimony regarding market power and termination liabilities in contracts. Filed June 18, 1999.

Kentucky Public Service Commission (Docket No. 99-296), on behalf of GTE & Bell Atlantic, direct testimony on the effects of the Bell Atlantic-GTE merger on competition in Kentucky and on the

benchmarking abilities of regulators. Filed July 9, 1999, rebuttal testimony filed August 20, 1999.

North Carolina Utilities Commission, *In re: Petition for Arbitration of ITC^DELTA COM Communications, Inc., with BellSouth Telecommunications, Inc., Pursuant to the Telecommunications Act of 1996*, (Docket No. P-500, Sub 10), testimony regarding economic interconnection issues, filed July 9, 1999.

Massachusetts Department of Telecommunications & Energy (Docket No. 94-185-E), on behalf of Bell Atlantic, rebuttal testimony re: inclusion of overhead costs in the calculation of price floors for BA-MA services. Filed July 26, 1999.

North Carolina Utilities Commission, *In the Matter of Bell South Telecommunications, Inc., Complainant vs. US LEC of North Carolina, Respondent*, (Docket No. P-561, Sub 10), rebuttal testimony regarding economic efficiency and reciprocal compensation. Filed July 30, 1999.

Public Service Commission of South Carolina, *In re: Petition for Arbitration of ITC^DELTA COM Communications, Inc., with BellSouth Telecommunications, Inc., Pursuant to the Telecommunications Act of 1996*, (Docket No 1999-259-C), on behalf of BellSouth Telecommunications, testimony regarding economic interconnection issues. Filed August 25, 1999.

Louisiana Public Service Commission (Docket No. U-24206), on behalf of BellSouth Telecommunications, direct testimony regarding intercarrier compensation for Internet-bound traffic. Filed September 3, 1999, rebuttal filed September 17, 1999.

Florida Public Service Commission (Docket No. 990750-TP), on behalf of BellSouth Telecommunications, rebuttal testimony regarding intercarrier compensation for Internet-bound traffic, filed September 13, 1999.

Federal Communications Commission, *In the Matter of Application by Bell Atlantic New York for Authorization Under Section 271 of the Communications Act to Provide In-Region, InterLATA Service in the State of New York* (CC Docket No. 99-295), Declaration on behalf of Bell Atlantic analyzing public interest issues in connection with Bell Atlantic long distance entry in New York. Filed September 29, 1999.

New Mexico Public Regulation Commission (Case No. 3131), On behalf of U S WEST Communications, direct testimony regarding intercarrier compensation for Internet-bound traffic, filed October 14, 1999. Rebuttal testimony filed October 18, 1999.

Alabama Public Service Commission (Docket No. 27091), on behalf of BellSouth Telecommunications, rebuttal testimony regarding intercarrier compensation for Internet-bound traffic, filed October 14, 1999.

Tennessee Regulatory Authority (Docket No. 99-00430), on behalf of BellSouth

Telecommunications, direct testimony regarding intercarrier compensation for Internet-bound traffic in Arbitration with ITC-DeltaCom, filed October 15, 1999. Rebuttal testimony filed October 25, 1999.

Tennessee Regulatory Authority (Docket No. 99-00377), on behalf of BellSouth Telecommunications, direct testimony regarding intercarrier compensation for Internet-bound traffic in Arbitration with ICG Telecom Group, filed October 15, 1999. Rebuttal testimony filed October 25, 1999.

Mississippi Public Service Commission (Docket No. 99-AD-421), on behalf of BellSouth Telecommunications, direct testimony regarding intercarrier compensation for Internet-bound traffic, filed October 20, 1999. Rebuttal testimony filed November 12, 1999.

Kentucky Public Service Commission (Docket No. 99-218), on behalf of BellSouth Telecommunications, direct testimony regarding intercarrier compensation for Internet-bound traffic, filed October 21, 1999. Rebuttal testimony filed November 19, 1999.

Rhode Island Public Utilities Commission (Docket No. 2681), on behalf of Bell Atlantic Rhode Island, direct testimony regarding incremental costs and switched access rates. Filed October 22, 1999.

Georgia Public Service Commission (Docket No. 10767-U), on behalf of BellSouth Telecommunications, rebuttal testimony regarding intercarrier compensation for Internet-bound traffic, filed October 25, 1999.

Federal Communications Commission (Docket No. 96-262), on behalf of United States Telephone Association, comments regarding rate structures for the local switching service category of the traffic-sensitive basket and common line basket, filed October 29, 1999. Reply comments filed November 29, 1999.

Oregon Public Utility Commission (ARB 154) on behalf of US WEST Communications, direct testimony regarding intercarrier compensation for ISP-bound traffic, November 1, 1999, rebuttal testimony filed November 5, 1999.

Federal Communications Commission (Docket No. 99-68), “An Economic and Policy Analysis of Efficient Intercarrier Compensation Mechanisms for Internet-Bound Traffic,” on behalf of U S WEST Communications, *ex parte* analysis of intercarrier compensation plans for ISP-bound traffic, November 12, 1999 (with A. Banerjee and A. Ros). Reply Comments: “Efficient Intercarrier Compensation for Internet-Bound Traffic,” (with A. Banerjee), October 23, 2000.

Georgia Public Service Commission (Docket No. 10854-U), on behalf of BellSouth Telecommunications, direct testimony regarding intercarrier compensation for Internet-bound traffic, filed November 15, 1999, rebuttal testimony filed November 22, 1999.

Idaho Public Utilities Commission (Case No. GST-T-99-1), on behalf of US West Communications,

Inc., direct testimony regarding intercarrier compensation for ISP-bound traffic, November 22, 1999, rebuttal testimony filed December 2, 1999.

New Mexico Public Regulation Commission (Utility Case No. 3147), on behalf of US West Communications, Inc., direct testimony regarding efficient pricing and policies towards investment and new service implementation, filed December 6, 1999, rebuttal testimony filed December 28, 1999.

Colorado Public Utilities Commission (Docket No. 99A-407T), on behalf of US West Communications, Inc., rebuttal testimony regarding the effects of the proposed Qwest-US West merger on economic welfare, filed December 7, 1999.

New Mexico Public Regulation Commission, on behalf of US West Communications, Inc., direct testimony regarding pricing flexible and alternatives to rate of return regulation, filed December 10, 1999.

Iowa Utilities Board, on behalf of US West Inc. & Qwest Communications Intl, Inc., rebuttal testimony regarding public interest effects of the proposed merger, filed December 23, 1999.

Federal Communications Commission (Docket Nos. 94-1, 96-26), comments on behalf of the United States Telecom Association regarding the proposed reprscription of the productivity offset in the FCC's price cap plan, January 7, 2000. Reply comments filed January 24, 2000, Ex parte presentation filed May 5, 2000.

Minnesota Public Utilities Commission (Docket No. P3009, 3052, 5096, 421, 3017/PA-99-1192), on behalf of US WEST Communications, Inc., rebuttal affidavit regarding the effects of the proposed Qwest-US West merger on economic welfare. Filed January 14, 2000.

New York Public Service Commission, (Case 98-C-1357), on behalf of Bell Atlantic-New York, Panel Testimony on costs for wholesale services, filed February 7, 2000. Panel Rebuttal Testimony filed October 19, 2000.

Washington Utilities and Transportation Commission (Docket No. UT-991358), on behalf of US West Communications, Inc., rebuttal testimony regarding the effects of the proposed Qwest-US West merger on economic welfare. Filed February 22, 2000.

Montana Public Service Commission (Docket No. D99.8.200), on behalf of US West Communications, Inc., rebuttal testimony regarding the effects of the proposed Qwest-US West merger on economic welfare. Filed February 22, 2000.

Utah Public Service Commission (Docket No. 99-049-41), on behalf of US West Communications, Inc., rebuttal testimony regarding the effects of the proposed Qwest-US West merger on economic welfare. Filed February 28, 2000.

Texas Public Utility Commission (Docket No. 21982), on behalf of Southwestern Bell Telephone

Company, direct testimony regarding CLEC's rate for transport and termination of ISP-bound traffic. Filed March 13, 2000. Rebuttal testimony filed March 31, 2000.

Arizona Corporation Commission (Docket Nos. T-02432B-00-0026, T-01051B-00-0026), on behalf of US WEST Communications, Inc., direct testimony regarding intercarrier compensation for Internet-bound traffic in arbitration with Sprint. Filed March 27, 2000, rebuttal testimony filed April 3, 2000

Colorado Public Utilities Commission (Docket No. 00B-011T), on behalf of US West Communications, Inc., direct testimony regarding intercarrier compensation for Internet-bound traffic in arbitration with Sprint. Filed March 28, 2000.

Minnesota Public Utilities Commission (Docket No. P3009, 3052, 5096, 421, 3017/PA-99-1192), direct testimony regarding the effects of the proposed Qwest-US West merger on economic welfare. Filed March 29, 2000.

Arizona Corporation Commission (Docket No. T-01051B-99-0497), on behalf of US West Communications, Inc., rebuttal testimony regarding economic issues arising in the proposed merger between U S WEST and Qwest. Filed April 3, 2000.

Wyoming Public Service Commission (Docket Nos. 74142-TA-99-16, 70000-TA-99-503, 74037-TA-99-8, 70034-TA-99-4, 74089-TA-99-9, 74029-TA-99-43, 74337-TA-99-2, Record No. 5134), on behalf of US West Communications, rebuttal testimony regarding economic issues arising in the proposed merger between U S WEST and Qwest. Filed April 4, 2000.

Pennsylvania Public Utility Commission (Docket No. A-310630F0002), on behalf of Bell Atlantic, direct testimony regarding the measurement of economic costs of ISP-bound traffic and economic issues concerning intercarrier compensation for such traffic. Filed April 14, 2000. Rebuttal testimony filed April 21, 2000.

Delaware Public Service Commission (PSC Docket No. 00-205), on behalf of Bell Atlantic-Delaware, direct testimony regarding intercarrier compensation for Internet-bound traffic in arbitration with Focal Communications Group. Filed April 25, 2000.

Virginia State Corporation Commission, (Case No. PUC000079) on behalf of Bell Atlantic-Virginia, direct testimony regarding intercarrier compensation for Internet-bound traffic in arbitration with Focal Communications Group. Filed April 25, 2000.

Washington Utilities and Transportation Commission (Docket No. UT-003006), on behalf of US West Communications, Inc., direct testimony regarding intercarrier compensation for internet-bound traffic in arbitration with Sprint. Filed April 26, 2000. Rebuttal testimony filed May 10, 2000. Surrebuttal testimony filed May 26, 2000.

The New Jersey Board of Public Utilities (Docket No. TO 00031063), on behalf of Bell Atlantic-New Jersey, direct testimony regarding the measurement of economic costs of ISP-bound traffic

and economic issues concerning intercarrier compensation for such traffic in arbitration with Focal Communications Group. Filed April 28, 2000. Rebuttal testimony filed May 5, 2000.

The New Jersey Board of Public Utilities (Docket No. TO 99120934), on behalf of Bell Atlantic-New Jersey, direct testimony regarding reclassification of services as competitive. Filed May 18, 2000. Rebuttal testimony filed September 8, 2000. Surrebuttal testimony filed October 13, 2000.

New Mexico Public Regulation Commission (Case No. 3008), On behalf of U S WEST Communications, rebuttal testimony regarding local exchange rate levels and structure, filed May 19, 2000.

North Dakota Public Service Commission, (Case No. PU-314-99-119) on behalf of US WEST Communications, rebuttal testimony regarding allocation of loop costs to telecommunications services, filed May 30, 2000.

Virginia State Corporation Commission, (Case No. PUC 000003) on behalf of Bell Atlantic-Virginia, direct testimony regarding efficient pricing of carrier access charges. Filed May 30, 2000.

Federal Communications Commission, *In the Matter of Reciprocal Compensation for CMRS Providers* (CC Docket Nos. 96-98, 95-185, WT Docket No. 97-207), “Reciprocal Compensation for CMRS Providers,” on behalf of United States Telecom Association, reply comments regarding interconnection with CMRS providers, June 13, 2000 (with Charles Jackson).

Colorado Public Utilities Commission (Docket No. 00B-103T), on behalf of US West Communications, Inc., rebuttal testimony regarding intercarrier compensation for Internet-bound traffic in arbitration with ICG. Filed June 19, 2000.

Georgia Public Service Commission (Docket No. 7892-U), on behalf of BellSouth Telecommunications, rebuttal testimony regarding implementation of service quality standards, filed June 27, 2000.

Louisiana Public Service Commission (Docket No. U-22632) on behalf of BellSouth Telecommunications, rebuttal testimony concerning payphone access services, July 17, 2000.

Federal Communications Commission, *In the Matter the Remand of the Commission’s Reciprocal Compensation Declaratory Ruling by the U.S. Court of Appeals for the D.C. Circuit* (CC Docket Nos. 96-98, 99-68), on behalf of Verizon, declaration regarding intercarrier compensation for Internet-bound traffic, filed July 21, 2000. Reply declaration filed August 4, 2000.

Montana Department of Public Service Regulation (Docket No. D2000.6.89), on behalf of US West Communications, Inc., direct testimony regarding efficient intercarrier compensation for Internet-bound traffic. Filed July 24, 2000. Rebuttal testimony filed February 7, 2001.

The New Jersey Board of Public Utilities (Docket No. TO00060356), on behalf of Bell Atlantic-New

Jersey, affidavit regarding the measurement of economic costs for unbundled network elements. Filed July 28, 2000.

Washington Transportation and Utilities Commission, *In the Matter of the Continued Costing and Pricing of Unbundled Network Elements and Transport and Termination*, Docket UT-003013, Part B. Direct testimony regarding intercarrier compensation for Internet-bound traffic. Filed August 4, 2000. Rebuttal testimony filed February 7, 2001.

New Mexico Public Regulation Commission (Case No. 3225), on behalf of Qwest Corporation, direct testimony regarding the subsidy in existing telephone rates. Filed August 18, 2000. Rebuttal testimony filed September 13, 2000. Reply Testimony filed on September 27, 2000.

Arizona Corporation Commission (Docket No. T-01051B-99-105), on behalf of Qwest Corporation., rebuttal testimony regarding rate design. Filed August 21, 2000. Rejoinder testimony filed September 1, 2000.

Federal Communications Commission, *In the Matter of Application by Verizon New England Inc., et al. for Authorization to Provide In-Region, InterLATA Services in Massachusetts*, on behalf of Verizon New England, Appendix A, declaration regarding competition in Massachusetts and the public interest benefits of interLATA entry, September 19, 2000, Reply Declaration filed November 3, 2000. Supplemental Reply Declaration filed February 28, 2001.

Nebraska Public Service Commission, *In the Matter of the Petition of Sprint Communications Company L.P. for Arbitration of Interconnection Rates, Terms, Conditions, and Related Arrangements with U S WEST Communications, Inc. N/K/A Qwest Corporation*, (Docket No. C-2328), Direct testimony regarding intercarrier compensation for Internet-bound traffic filed September 25, 2000. Rebuttal testimony filed October 4, 2000.

Washington Transportation and Utilities Commission, *In the Matter of the Petition of Qwest Corporation for Competitive Classification of Business Services in Specified Wire Centers*, Docket No. UT-000883. Rebuttal testimony regarding economic criteria for classification of services as competitive. Filed October 6, 2000.

Tennessee Regulatory Authority, (Docket No. 97-00409), on behalf of BellSouth Telecommunications: rebuttal testimony regarding efficient pricing for pay telephone services. Filed October 6, 2000.

Arizona Corporation Commission, *In the Matter of Investigation into Qwest Corporation's Compliance with Certain Wholesale Pricing Requirements for Unbundled Network Elements and Resale Discounts*, Docket No. T-00000A-00-0194. Direct testimony regarding intercarrier compensation for Internet-bound traffic. Filed October 11, 2000.

New Mexico Public Regulation Commission (Case No. 3300), on behalf of Valor Telecommunications of New Mexico, LLC, rebuttal testimony regarding the subsidy in existing telephone rates. Filed October 19, 2000.

Montana Department of Public Service Regulation (Docket No. D2000.8.124), on behalf of US West Communications, Inc., direct testimony in arbitration with TouchAmerica regarding efficient intercarrier compensation for Internet-bound traffic. Filed October 20, 2000. Rebuttal filed December 20, 2000.

Pennsylvania Public Utility Commission (Docket No. P-00981449), on behalf of Verizon North, testimony regarding parameters in a Chapter 30 price cap plan. Filed October 31, 2000. Rebuttal testimony filed February 20, 2001.

Connecticut Department of Public Utilities (Docket No. 00-07-17), on behalf of The Southern New England Telephone Company, testimony regarding local competition and pricing. Filed November 21, 2000.

United States District Court, District of Nevada (Case No. CV-S-99-1796-KJD(RJJ) on behalf of Broadwing Communications Services, Inc., affidavit regarding damages from alleged misuse of trade secret information. Filed December 28, 2000.

Arizona Corporation Commission (Docket Nos. T-03654A-00-0882, T-01051B-00-0882), on behalf of Qwest Corporation, direct testimony regarding intercarrier compensation for internet-bound traffic. Filed January 8, 2001.

Pennsylvania Public Utility Commission, (Docket No. M-00001435) on behalf of Verizon-Pennsylvania, Inc.: affidavit regarding the public interest benefits of Verizon entry into interLATA services. Filed January 8, 2001.

Maine Public Utilities Commission (Docket No. 99-851) on behalf of Verizon: direct testimony regarding the review of Maine's alternative regulation plan. Filed January 8, 2001. Rebuttal testimony filed February 16, 2001.

Florida Public Service Commission (Docket No. 000075-TP) on behalf BellSouth Telecommunications, Inc.: rebuttal testimony regarding intercarrier compensation for Internet-bound traffic, filed January 10, 2001.

Canadian Radio-Television and Telecommunications Commission, in response to CRTC Telecom Public Notice CRTC 2000-108, "MTS Communications Inc., Recovery of 2000 and 2001 Income Tax Expense" on behalf of MTS Communications, Inc. Oral panel testimony, January 11, 2001.

Colorado Public Utilities Commission (Docket No. 00B-601T), on behalf of Qwest. Rebuttal testimony regarding intercarrier compensation for internet-bound traffic in arbitration with Level 3. Filed January 16, 2001.

Utah Public Service Commission (Docket No. 00-999-05), on behalf of Qwest Corporation: direct testimony regarding intercarrier compensation for Internet-bound traffic. Filed February 2, 2001.

Rebuttal testimony filed March 9, 2001.

The New Jersey Board of Public Utilities (Docket No. TO01020095), on behalf of Verizon-New Jersey, panel testimony regarding subsidies and measurement of economic cost. Filed February 15, 2001. Rebuttal filed June 15, 2001.

The New Jersey Board of Public Utilities (Docket No. TO01020095), on behalf of Verizon-New Jersey, panel testimony regarding reclassification of business services as competitive. Filed February 15, 2001. Rebuttal filed June 15, 2001.

The New Jersey Board of Public Utilities (Docket No. TO01020095), on behalf of Verizon-New Jersey, panel testimony regarding parameters in an incentive regulation plan. Filed February 15, 2001. Rebuttal filed June 15, 2001. Supplemental rebuttal filed September 25, 2001.

Arizona Corporation Commission (Docket No. T-00000A-00-0194, Phase 2), on behalf of Qwest Corporation, direct testimony regarding intercarrier compensation for Internet-bound traffic. Filed March 15, 2001.

Florida Public Service Commission (Docket No. 000121-TP) on behalf BellSouth Telecommunications, Inc.: direct testimony regarding properties of a service quality performance assurance plan. Filed March 1, 2001. Rebuttal filed March 21, 2001. Rebuttal in Phase II filed April 19, 2001.

Before the Public Service Commission of Maryland (Case No. 8745), direct testimony on behalf of Verizon Maryland Inc. regarding efficient pricing of carrier access charges. Filed March 23, 2001. Rebuttal filed May 21, 2001. Surrebuttal filed June 11, 2001.

Before the Massachusetts Department of Telecommunications and Energy, testimony on behalf of Verizon New England Inc. d/b/a/ Verizon Massachusetts, regarding benefits of alternative regulation in Massachusetts since adoption of price cap plan.. Filed April 12, 2001. Rebuttal testimony filed September 21, 2001. Reply filed November 14, 2001.

Florida Public Service Commission (Docket No. 000075-TP) on behalf BellSouth Telecommunications, Inc., rebuttal testimony regarding efficient intercarrier compensation, filed April 12, 2001.

On behalf of Verizon New England Inc., D/B/A/ Verizon Massachusetts (Docket D.T.E. 01-20), direct testimony regarding cost concepts and pricing principles for UNEs, filed May 4, 2001. Rebuttal testimony filed December 17, 2001.

New York Public Service Commission, (Case 00-C-1945), on behalf of Verizon-New York, Panel Testimony on price regulation, filed May 15, 2001.

New York Public Service Commission, (Case 00-C-1945), on behalf of Verizon-New York, Panel Testimony on the New York competitive marketplace, filed May 15, 2001.

- North Carolina Utilities Commission (Docket No. P-100, SUB 133k), on behalf of BellSouth Telecommunications: rebuttal testimony regarding properties of a service quality performance assurance plan. Filed May 21, 2001.
- Federal Communications Commission, *In the Matter of Application by Verizon New England Inc., et al. for Authorization to Provide In-Region, InterLATA Services in Connecticut*, on behalf of Verizon New England, Appendix A, declaration regarding competition in Connecticut and the public interest benefits of interLATA entry, May 24, 2001.
- Before the Public Service Commission of Maryland (Case No. 8879), direct testimony on behalf of Verizon Maryland Inc. regarding costing principles for network elements. Filed May 25, 2001. Rebuttal testimony filed September 5, 2001. Surrebuttal testimony filed October 15, 2001.
- Canadian Radio-Television and Telecommunications Commission (Public Notice CRTC 2001-37) on behalf of Aliant Telecom Inc., Bell Canada, MTS Communications Inc., and Saskatchewan Telecommunications: "Price Cap Review and Related Issues," filed May 31, 2001. Rebuttal evidence filed September 20, 2001.
- Alabama Public Service Commission (Docket No. 25835), on behalf of BellSouth Telecommunications, Inc., economic aspects of service quality penalty plans. Rebuttal testimony filed June 19, 2001.
- Federal Communications Commission, *In the Matter of Application by Verizon Pennsylvania Inc., et al. for Authorization to Provide In-Region, InterLATA Services in Pennsylvania*, on behalf of Verizon Pennsylvania, Appendix A, declaration regarding competition in Pennsylvania and the public interest benefits of interLATA entry, June 21, 2001.
- Louisiana Public Service Commission (Docket No. U-22252, Subdocket E), on behalf of BellSouth Telecommunications, economic properties of service quality penalty plans. Reply affidavit filed June 25, 2001.
- American Arbitration Association, New York, MCI WorldCom Communications Inc v. Electronic Data Systems, Corporation, Expert Report on prices and incentives in a disputed contract filed June 25, 2001. Supplemental Expert Report filed July 13, 2001.
- South Carolina Public Service Commission (Docket No. 2001-209-C), on behalf of BellSouth Telecommunications, Inc.: economic aspects of BellSouth's application to provide long distance services in South Carolina. Rebuttal testimony filed July 16, 2001.
- Public Service Commission of the District of Columbia (Case No. 962), on behalf of Bell Atlantic - Washington, D.C., direct testimony regarding costing and pricing of interconnection and network elements. Filed July 16, 2001. Rebuttal testimony filed January 11, 2002.
- Alabama Public Service Commission (Docket No. 25835), on behalf of BellSouth Telecommunications, Inc., economic aspects of structural separations. Surrebuttal testimony

filed July 24, 2001.

Kentucky Public Service Commission (Docket No. 2001-105), on behalf of BellSouth Telecommunications, Inc.: local competition in Kentucky and BellSouth's performance measurements plan to support its application for interLATA authority. Rebuttal testimony filed July 30, 2001. Surrebuttal testimony filed September 10, 2001.

Mississippi Public Service Commission (Docket No. 97-AD-321), on behalf of BellSouth Telecommunications, Inc.: local competition in Mississippi and BellSouth's performance measurements plan to support its application for interLATA authority. Rebuttal testimony filed August 2, 2001.

Alabama Public Service Commission (Docket Nos. 15957 and 27989), on behalf of BellSouth Telecommunications, Inc.: economic support for promotional offerings. Direct testimony filed August 3, 2001, rebuttal testimony filed August 13, 2001. Additional rebuttal testimony filed August 17, 2001.

Tennessee Regulatory Authority, (Docket No. 01-00193), on behalf of BellSouth Telecommunications: rebuttal testimony regarding performance measurements and self-effectuating penalties. Filed August 10, 2001.

Florida Public Service Commission (Docket No. 960786-TL) on behalf BellSouth Telecommunications, Inc.: surrebuttal testimony regarding the state of local competition in Florida, filed August 20, 2001.

Utah Public Service Commission on behalf of Qwest Corporation, direct testimony regarding productivity offsets in a price cap plan. Filed October 5, 2001. Rebuttal testimony filed November 22, 2001.

North Carolina Utilities Commission (Docket No. P-55, SUB 1022), on behalf of BellSouth Telecommunications: rebuttal testimony regarding status of local competition in North Carolina. Filed October 8, 2001.

New York Public Service Commission (Case 01-C-0767), on behalf of Verizon-New York, panel testimony regarding incremental costs and pricing of mobile interconnection services. Filed October 31, 2001.

Federal Communications Commission (CC Docket No. 01-92), on behalf of BellSouth Corporation: Reply Declaration (with Aniruddha Banerjee) on a unified regime of inter-carrier compensation (calling party's network pays or bill and keep?). Filed November 5, 2001.

CPR Institute for Dispute Resolution Arbitral Tribunal, Rebuttal Affidavit in Arbitrations III and IV between BellSouth Telecommunications and Supra Telecommunications & Information Systems. Filed November 5, 2001.

Federal Communications Commission (CC Docket No. 01-277), on behalf of BellSouth Corporation:

Reply Affidavit on BellSouth's application for interLATA authority in Georgia and Louisiana. Filed November 13, 2001.

Minnesota Public Utilities Commission (PUC Docket No. P-421/C1-01-1372, OAH Docket No. 7-2500-14487-2) on behalf of Qwest Corporation, economic aspects of separate affiliate requirements, affidavit filed December 28, 2001, Surrebuttal Affidavit filed January 16, 2002.

New York Public Service Commission, (Case 00-C-1945), economic issues in renewing the New York incentive regulation plan, (panel testimony), filed February 11, 2002.

Federal Communications Commission (CC Docket Nos. 99-273, 92-105, 92-237), on behalf of BellSouth Corporation, Qwest Communications International, Inc., SBC Communications, Inc., and Verizon Telephone Companies: Affidavit: "Competition and Regulation for Directory Assistance Services" (with Harold Ware) regarding incremental costs and benefits from 411 presubscription. Filed April 1, 2002.

Before the Public Utilities Commission of the State of California on behalf of California American Water Company, RWE AG, Thames Water Aqua Holding GmbH, Thames Water Plc and Apollo Acquisition Company, economic support regarding the merger between American Water Company and Thames Water, direct testimony filed May 17, 2002, rebuttal testimony filed July 15, 2002.

Before the Commerce Commission of New Zealand on behalf of New Zealand Telecom, "Review of CostQuest Associates' Benchmarking Survey" En banc hearings May 13-17, 2002.

Rhode Island Public Utilities Commission (Docket No. 2681), on behalf of Verizon Rhode Island, direct testimony regarding incremental costs and switched access rates, filed May 1, 2002.

Rhode Island Public Utilities Commission (Docket No. 3179), on behalf of Verizon Rhode Island, direct testimony regarding alternative regulation, filed July 1, 2002.

Federal Communications Commission (CC Docket Nos. 01-338, 96-98, 98-47), on behalf of BellSouth Corporation: Reply Declaration (with Aniruddha Banerjee, Charles Zarkadas and Agustin Ros) regarding unbundling obligations of local exchange carriers. Filed July 17, 2002.

United States Bankruptcy Court, Northern District of Illinois, Eastern Division Telesphere Liquidating Trust vs. Francesco Galesi, Adv. Proc. Nos. 95 A 1051 & 99 A 131: expert opinion regarding the condition of alternative operator service provider and 900 service markets. Report filed August 23, 2002.

Massachusetts Department of Telecommunications and Energy (D.T.E. 01-31, Phase II (Track B)), on behalf of Verizon Massachusetts, regarding benefits of alternative regulation. Filed August 28, 2002. Rebuttal testimony filed September 18, 2002.

Maryland Public Service Commission (Case No. 8927), on behalf of Verizon Maryland, rebuttal

testimony regarding complaint by CloseCall America alleging anti-competitive tying of Verizon's residential and small business local service with voice messaging and high-speed Internet access, filed September 24, 2002. Supplemental rebuttal testimony filed Mrach3, 2003. Surrebuttal testimony filed April 11, 2003.

Federal Communications Commission (CC Docket Nos. 01-338, 96-98, 98-47), on behalf of BellSouth Corporation, ex parte on local switching as a UNE, October 4, 2002.

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Circuit Court For Prince George's County, Maryland. Case No: CAL 99-21004, Jacqueline Dotson, et al. v. Bell Atlantic – Maryland, Inc. and Maryland Public Service Commission, affidavit on behalf of Bell Atlantic Maryland regarding late payment fees. Filed October 14, 2002.

State of Rhode Island And Providence Plantations Public Utilities Commission (Docket Nos. 3179 and 3445), on behalf of Verizon Rhode Island, regarding alternative regulation. Filed July 1, 2002 (Docket No. 3179). Rebuttal testimony filed October 22, 2002 (Docket No. 3445).

United States District Court for the District of Columbia, (MDL No. 1285, Misc. No 99-0197 (TFH)), Declaration regarding statistical issues in measuring damages from price fixing in the vitamin industry, filed October 31, 2002. Reply Declaration filed January 15, 2003.

Florida Public Service Commission (Docket Nos. 020119-TP and 020578-TP), on behalf of BellSouth Telecommunications, Inc., regarding competitive promotional offerings. Direct testimony filed October 23, 2002, rebuttal filed November 25, 2002.

Affidavit on Behalf of Bell Atlantic-Maryland, Inc., Case No. CAL 99-21004 in connection with a late payment overcharge. Filed October 15, 2002.

Georgia Public Service Commission (Docket No. 11901-U) on behalf of BellSouth Telecommunications, Inc., regarding the provision of DSL service to competitors' voice customers. Rebuttal testimony filed November 8, 2002.

Federal Communications Commission (RM No. 10593) on behalf of BellSouth Corporation, Qwest Corporation, SBC Communications, Inc., and Verizon, regarding pricing flexibility for interstate special access services (with A.E. Kahn), filed December 2, 2002.

Comisión Federal de Telecomunicaciones de México, on behalf of the Commission, "Telmex's 2003-2006 Price Cap Tariff Proposal," expert report regarding the renewal of the price cap plan for Telmex, (with A. Ros, G. Martinez and A. Banerjee), filed December 13, 2002.

Florida Public Service Commission (Docket No. 020507-TP) on behalf of BellSouth Telecommunications, Inc., regarding bundling of basic and non-basic services. Rebuttal testimony filed December 23, 2002.

American Arbitration Association, on behalf of Verizon – New York, direct testimony regarding events in telecommunications markets affecting employment. February 2003.

Pennsylvania Public Utility Commission, (Docket No. P-00032020), on behalf of Commonwealth Telephone Company. Affidavit regarding exogenous events in price cap plans. Filed February 3, 2003.

Pennsylvania Public Utility Commission, (Docket No. P-00930715F0002), on behalf of Verizon – Pennsylvania. Rebuttal testimony regarding broadband development and productivity growth in the context of a price cap plan. Filed February 4, 2003.

Before the Commerce Commission of New Zealand on behalf of New Zealand Telecom, “The Wholesale Discount” En banc hearings February 10, 2003.

New Jersey Board of Public Utilities (Docket No. TT97120889), on behalf of Verizon – New Jersey, updated rebuttal testimony (with Michael Falkiewicz) regarding reclassification of directory assistance services as competitive, filed February 13, 2003.

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Public Service Commission of South Carolina, Docket No. 2001-209-C on behalf of BellSouth Telecommunications, Inc.. Direct testimony regarding statistical issues in performance penalty plans, filed March 5, 2003.

Washington Utilities and Transportation Commission (Docket No. UT-02-11-20), on behalf of Qwest, rebuttal testimony regarding economic aspects of the sale of Qwest Dex (Yellow Pages). Filed April 17, 2003.

Maine Public Utilities Commission (Docket No. 99-851), on behalf of Verizon- Maine, affidavit regarding economics of price cap regulation. Filed April 29, 2003.

New Hampshire Public Utilities Commission (Docket No. DT 02-111) on behalf of Verizon – New Hampshire, rebuttal testimony regarding private line pricing. Filed May 2, 2003.

U.S. District Court, Southern District of Florida (Case No. 99-1706), on behalf of BellSouth Telecommunications, Confidential Reply Affidavit (“Economic Assessment of Damages”). Filed April 25, 2003.

New Hampshire Public Utilities Commission (Docket No. DT 02-165) on behalf of Verizon – New Hampshire, rebuttal testimony regarding Yellow Pages revenue imputation. Rebuttal Testimony

filed June 4, 2003 Surrebuttal testimony filed November 10, 2003.

United States District Court, Eastern District of Louisiana, Civil Action No. 02-0481: *Dwayne P. Smith, Trustee v. Lucent Technologies, Inc.*, on behalf of Lucent Technologies, Inc., damage calculation from alleged equipment failure. Expert Report filed June 16, 2003.

American Arbitration Association (Case No: 50-T-180-00458-02), *Global Crossing USA, Inc. v. Softbank Corp.*, on behalf of Softbank Corp., damage calculations regarding undersea optical fiber capacity. Direct and Supplemental direct testimonies filed July 2003.

Montana Public Service Commission (Docket No. D2002.12.153) on behalf of Qwest Long Distance Corp.: rebuttal testimony regarding alleged anticompetitive practices in long distance services. Filed July 18, 2003.

Public Service Commission of South Carolina, Docket Nos. 2002-367-C and 2002-408-C on behalf of BellSouth Telecommunications, Inc.. Economic interpretation of “abuse of market position” and “inflation-based index” in legislation. Direct testimony filed July 23, 2003, Responsive testimony filed July 30, 2003.

Pennsylvania Public Utility Commission on behalf of Verizon-PA Inc. and Verizon North Inc., surrebuttal testimony (proprietary) to support Verizon-PA rate rebalancing plan. Filed August 4, 2003.

Florida Public Service Commission (Docket No. 030869-TL), on behalf of BellSouth Telecommunications, Inc., regarding rate rebalancing in the Florida Statutes. Direct testimony filed August 27, 2003.

New York Public Service Commission, (Case 02-C-1425), on behalf of Verizon New York, forecasts of incremental hot cut demand (panel testimony), filed October 24, 2003.

Wisconsin Public Service Commission, (Docket No. 6720-TI-173) on behalf of SBC Wisconsin, economic analysis of competition for small business customers. Filed October 31, 2003.

California Public Utility Commission (Case No. 95-04-043/I.95-04-044) on behalf of Verizon California, Inc, forecast of incremental hot cut demand, filed November 7, 2003.

November, 2003

EXHIBIT WET-I

MCI Bundled Offering

THE Neighborhood
built by mci

Where local and long distance come together.

Say hello to unlimited local and long distance.

Over **20000000** have joined. How about you?
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Add HiSpeed Internet Service to any plan for only \$35 a month!

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Unlimited calls. One low price.

With The Neighborhood, you can call anyone in the country, talk as long as you want, call as many times as you want, for one low monthly price. And now The Neighborhood offers unlimited DSL with HiSpeed Internet Service (where available). Sign up today and get 50% off your first month.†

With Neighborhood Complete get the following for one monthly price, starting at \$49.99 in most states.

- ✚ Unlimited long distance calls
- ✚ Unlimited local toll calls
- ✚ Unlimited local calls
- ✚ One company, one bill
- ✚ Call Waiting, Caller ID, Speed Dial and 3-Way Calling
- ✚ Personal Voicemail & Message Center

▷ [See an expanded list of features and benefits](#)

Looking for a different calling plan? Enter your phone number below to see the other great plans The Neighborhood has to offer.

Find The Neighborhood plan that works for you.

Enter your home phone number below to check availability and pricing for The Neighborhood.

() - [FIND YOUR PLAN](#)

Where is The Neighborhood available?
Features, pricing and availability vary by state. Your phone number is only used to check availability and pricing for The Neighborhood. We do not use this information for any other purpose.

† For new customers only. 50% off applies to monthly fee for primary line only.

Additional Network Access Charge of \$6.50 per month for the first line, Federal Universal Service fee, in-state fees, and taxes apply.

Unlimited calling is for residential voice service only. [Click here](#) for details.

[Privacy Policy](#) | [Legal Notices](#) | [Service Agreement & Rate Schedule](#)

AT&T Bundled Offering

[AT&T CONSUMER HOME](#)



SEARCH



New York Local Service

Here's A Quick Comparison Of The Plans Available To You

Service Availability
Local service is available in your area.
* Line 1

Check another number

AT&T Local Service

- [Compare All Plans](#)
- [Promotions](#)
- [Billing Options](#)
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Calling Plan	AT&T One Rate USASM 8	AT&T Local Service⁺	AT&T Expanded Local Service⁵
Local Service			
Price/Month	\$54.95/mth	\$19.95/mth	\$24.95/mth
Minutes Included	Unlimited local calling from home	Unlimited local calling from home	Unlimited local and regional toll calling from home
Included Features	* none	* none	* none
Additional Feature Choices	Your choice of 4 features	3-Feature Package for additional \$12.50/mth	3-Feature Package for additional \$12.50/mth
Long Distance			
Long Distance Options	<ul style="list-style-type: none"> • Unlimited long distance calling from home 	Your choice of the following: [†] <ul style="list-style-type: none"> • AT&T Local One Rate Plus PlanSM (\$3.95/mth) • AT&T Unlimited Plan^B (\$19.95/mth) • AT&T One Rate@ 10¢ Plan (no monthly plan fee) +	Your choice of the following: [†] <ul style="list-style-type: none"> • AT&T Local One Rate Plus PlanSM (\$3.95/mth) • AT&T Unlimited Plan^B (\$19.95/mth) • AT&T One Rate@ 10¢ Plan (no monthly plan fee) +
International Calling			
International Calling Options	* not available online	AT&T AnyHour International Savings Advantage [†] (\$3.95/mth)	AT&T AnyHour International Savings Advantage [†] (\$3.95/mth)

The packages above also come with your choice of the following for an additional monthly fee:

- * Voicemail⁵
- * Voicemail - Spanish⁵
- * AT&T Complete Maintenance PlanSM ²
- * Inside Wire Maintenance Plan⁹
- * AT&T Telephone Protection Plan¹¹
- * No Maintenance Plan
- * Caller ID with Anonymous Call Rejection[†]
- * Caller ID with Name with Anonymous Call Rejection⁸
- * Call Waiting ID with Anonymous Call Rejection[†]
- * Anonymous Call Rejection with Call Return and Repeat Dialing⁵
- * Anonymous Call Rejection w/Repeat Dialing⁸
- * Call Waiting
- * Speed Dial 8
- * Speed Dial 30
- * Call Forwarding - Variable
- * Call Return
- * Caller ID Block (per line)
- * Repeat Dialing
- * Three-Way Calling
- * Call Block - 10-10-XXX Restriction
- * Call Block - Collect Calls
- * Call Block - Third Party Billing
- * Call Block - Third Party & Collect
- * Directory Listing - Standard

Source: <http://www.shop.att.com/plancomparison/>

Sprint Bundled Offering

Sprint Complete SenseSM Product Overview

Sprint Complete Sense Unlimited with PCS

- Unlimited local and local toll calling
- Unlimited LD (domestic state-to-state calling, does not include International)
- Calling features: Voicemail, Call Waiting, Caller ID, Call Forwarding, Notify Me, Three-Way calling and Speed Dial 8
- Unlimited nationwide PCS for \$130 + Sprint Complete Sense residential monthly recurring charge
- Sprint Complete Sense residential has three unlimited price points that can be combined with the \$130 unlimited PCS plan, depending on the state:
 - o \$49.99 + \$130= \$179.99
 - o \$55.99 + \$130= \$185.99
 - o \$59.99 + \$130= \$189.99

Sprint Complete Sense 50

- Unlimited local calling
- 50 block of time (7-cents per minute after 50; in-state, and domestic state-to-state calling standard International fees apply)
- Calling features: Call Waiting, Caller ID, Three-Way calling and Speed Dial 8
- Voicemail can be added for \$5.99 per month
 - o \$34.99
 - o \$39.99
 - o \$44.99

*Sprint PCS customers who prefer to stay on their existing plan will receive a five percent discount when they subscribe to Sprint Complete Sense Unlimited.

	SCS Unlimited with PCS Unlimited	SCS Unlimited Unlimited	SCS 250 Unlimited	SCS 50 Unlimited
Local/ Local Toll Long Distance	Unlimited	Unlimited	Unlimited	Unlimited
Wireless	Unlimited	5% discount	5% discount	N/A
Voicemail	Included	Included	\$5.99/mo	\$5.99/mo
Monthly Price	\$179.99- 189.99	\$49.99-59.99	\$44.99-54.99	\$34.99- 44.99

Source: http://www3.sprint.com/PR/PressKits/Attachments/135_1107.pdf

EXHIBIT WET-II

DESCRIPTION OF DATA USED

1. Verizon RI access lines in service for the period January 2000 to September 2003
 - a. Data includes Retail, Resale and UNE-P lines reported as systems (not VGEs) on a located basis.
 - b. Data excludes Digital/Hicap lines such as ISDN PRI and Cyber DS1
2. RI UNE-P migration orders and line counts from January 2002 to September 2003
 - a. UNE-P Migration data represents all conversions to UNE-P (from all sources) for the specific time period.
 - b. Data was obtained from the Request Manager confirmation file.
 - c. Includes all LSRs confirmed either manually or via flow through.
3. RI VZ UNE-P to Retail winback lines from January 2000 to September 2003
 - a. Data includes the line counts from Winback orders for customers coming back to Verizon Retail service from a CLEC.
 - b. Winback Orders are processed through the SOP system and are defined as C (Change Party) orders. Partial winbacks are not captured
 - c. Line counts are based on completed orders.

EXHIBIT WET-VII

