

**BEFORE THE WASHINGTON
UTILITIES AND TRANSPORTATION COMMISSION**

IN THE MATTER OF THE CONTINUED)	
COSTING AND PRICING OF)	DOCKET UT-003013
UNBUNDLED NETWORK ELEMENTS)	
AND TRANSPORT AND TERMINATION)	PART B
)	

Rebuttal Testimony

of

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on behalf of

Qwest Corporation

February 7, 2001

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1 **I. IDENTIFICATION OF WITNESS**

2 **Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS, AND CURRENT**
3 **POSITION.**

4 A. My name is William E. Taylor. I am Senior Vice President of National Economic Research
5 Associates, Inc. (“NERA”), head of its Communications Practice, and head of its
6 Cambridge office located at One Main Street, Cambridge, Massachusetts 02142.

7 **Q. HAVE YOU TESTIFIED PREVIOUSLY IN THIS DOCKET?**

8 A. Yes, I filed Direct Testimony on August 4, 2000. My qualifications were presented in that
9 testimony, and my vita was attached to that testimony as Exhibit WET-2.

10 **II. PURPOSE OF TESTIMONY**

11 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

12 A. I have been asked by Qwest Corporation (“Qwest”) to respond to economic issues raised by
13 Dr. Blackmon, Mr. Argenbright, and Mr. Starkey regarding inter-carrier compensation for
14 Internet-bound traffic.

15 **III. SUMMARY OF TESTIMONY**

16 **Q. PLEASE SUMMARIZE YOUR POSITION ON INTER-CARRIER**
17 **COMPENSATION FOR INTERNET-BOUND TRAFFIC.**

18 A. My position on that issue is summarized as follows:

19 The correct economic perspective for inter-carrier compensation for Internet-bound

1 traffic is formed from the principle of cost causation. On the basis of that principle,
2 reciprocal compensation should not be paid by the originating incumbent local exchange
3 carrier (“ILEC”) for Internet-bound calls. Instead, the Internet service provider (“ISP”)
4 should compensate that carrier (and any other carrier that switches the Internet-bound call)
5 for the end-to-end cost caused by the ISP’s customer, and recover that cost directly from
6 the ISP’s customer.

7 The economic role of the ISP is not that of an end-user (of a serving competitive local
8 exchange carrier or “CLEC”) but rather that of a carrier. Therefore, like the inter-exchange
9 carrier (“IXC”) that pays carrier access charges to partially defray the cost of a long
10 distance call, the ISP should pay analogous charges to defray costs incurred by other
11 carriers on its behalf to switch an Internet-bound call. Persisting with reciprocal
12 compensation (from the ISP customer’s originating ILEC to the CLEC that ultimately
13 switches the call to the ISP) would generate an inefficient subsidy for Internet use, distort
14 the local exchange market, and generate unintended arbitrage opportunities for CLECs.
15 Such compensation induces CLECs to specialize in serving ISPs with the sole aim of
16 accumulating reciprocal compensation revenues.

17 Finally, the per-minute average incremental cost to an ILEC of carrying Internet-
18 bound traffic is likely to be less than the total element long run incremental cost
19 (“TELRIC”) used to support the interconnection rate because (1) Internet holding times are
20 longer than traditional local voice traffic holding times, (2) switching costs with one-to-one
21 concentration have higher fixed and lower variable (per-minute) components than

1 switching costs for ordinary voice traffic, and (3) Internet usage may flatten the load
2 distribution that an ILEC faces, reducing the average switching costs across peak and off-
3 peak usage. Accounting for such cost differences by deaveraging Internet-bound and
4 traditional traffic is a reasonable policy: FCC rules encourage deaveraging of UNE costs,
5 and the fact that the FCC's enhanced service provider ("ESP") exemption from carrier
6 access charges applies specifically to this class of traffic means that deaveraging its costs
7 serves a useful public purpose.

8 The bottom line in this response to economic issues raised by intervenors and the
9 Commission staff is that cost causation still leads to an inter-carrier compensation policy
10 based on access-like charges from the ISP to all LECs that jointly incur costs to carry the
11 call, but if such a mechanism is not used, then compensation should be cost-based and not
12 necessarily symmetrical.

13 **IV. INTER-CARRIER COMPENSATION SHOULD DEPEND ON ECONOMIC,**
14 **RATHER THAN JURISDICTIONAL, ANALYSIS**

15 **Q. DR. BLACKMON ASSERTS [AT PAGE 13] THAT ISPS ARE NOT**
16 **TELECOMMUNICATIONS CARRIERS BUT AGREES WITH YOU THAT**
17 **ECONOMIC, RATHER THAN JURISDICTIONAL, ANALYSIS SHOULD**
18 **DETERMINE INTER-CARRIER COMPENSATION FOR INTERNET-BOUND**
19 **CALLS. DO YOU AGREE WITH THESE CONCLUSIONS?**

20 A. I agree in part. Dr, Blackmon is correct that an economic analysis of the role of the ISP is
21 critical to understanding the economic consequences of different methods of compensating

1 the local exchange carriers (ILECs and CLECs) that carry traffic from ISP customers to the
2 ISP. I disagree, however, with his jurisdictional conclusion that ISPs are end users, not
3 carriers. From a jurisdictional perspective, my understanding of the FCC's views is that it
4 treats ESPs (of which ISPs are part) as end users only for an explicit purpose, namely for
5 not assessing access charges.

6 From an economic perspective, the function of the ISP is the same as that of a long
7 distance carrier or IXC: to take a call from a customer and help switch and transport the
8 call to its final destination(s). To treat an ISP as an end user—as Dr. Blackmon does [at
9 page 14]—is to deny its function. When end users call a pizza parlor, the call ends there,
10 and other, non-telecommunications, activities begin. The local carrier that terminates the
11 call to the pizza parlor completes the communications portion of the transaction. In
12 contrast, the LEC that carries an end user's call to her ISP facilitates, but does not
13 complete, the transport and routing of the end user's message. The roles that the ISP and
14 the pizza parlor play are fundamentally different from this perspective.

15 **Q. MR. ARGENBRIGHT REJECTS YOUR JURISDICTIONAL ANALYSIS AND**
16 **FINDS [AT PAGE 7] THAT “THERE IS NO JURISDICTIONAL BASIS FOR THE**
17 **COMMISSION TO CREATE A NOVEL AND DISTINCT TRAFFIC TYPE FOR**
18 **PURPOSES OF INTER-CARRIER COMPENSATION.” DO YOU ADVOCATE**
19 **THE CREATION OF A NOVEL TRAFFIC TYPE TO SUPPORT YOUR VIEW OF**
20 **INTER-CARRIER COMPENSATION?**

21 A. Not at all. My jurisdictional analysis does not introduce any new category of traffic. On the

1 contrary, it proposes to treat both forms of interstate traffic served by ILECs identically.
2 That is, inter-carrier compensation for interstate carrier access traffic and interstate Internet
3 access traffic would both be covered by the same paradigm: the access charge paradigm in
4 which the LEC that carries the call to the IXC (or, for Internet-bound traffic, the ISP)
5 collects revenue from that carrier and divides that revenue among the LECs that jointly
6 provision the call. The only distinction is that the ESP exemption means that the ISP will
7 pay local exchange rates rather than carrier access rates; however, this does not mean that
8 the paradigm of inter-carrier compensation for interstate traffic should not apply equally to
9 both interstate long distance and Internet-bound traffic.

10 **Q. DOES MR. ARGENBRIGHT’S “FUNCTIONAL” ANALYSIS [AT PAGES 8 TO 12]**
11 **HELP DETERMINE AN EFFICIENT MECHANISM FOR INTER-CARRIER**
12 **COMPENSATION FOR INTERNET-BOUND TRAFFIC?**

13 A. No. The economic function performed by an IXC or an ISP is fundamentally different from
14 that performed by an end user (such as a pizza parlor). The economic analysis in my direct
15 testimony explains why cost causation requires use of the inter-exchange paradigm for
16 inter-carrier compensation rather than the local exchange paradigm, and metaphysical
17 concepts such as where a call actually terminates play no role in that analysis.

18 **V. THE COST CAUSATION PRINCIPLE MANDATES THE USE OF THE INTER-**
19 **EXCHANGE PARADIGM FOR INTER-CARRIER COMPENSATION**

20 **Q. DR. BLACKMON STATES [AT PAGE 14] THAT “THE COST CAUSER IS THE**
21 **PERSON THAT ORIGINATED THE CALL.” DO YOU AGREE?**

1 A. Yes, Dr. Blackmon and I agree on the identity of the cost-causer. Where we disagree is that
2 I believe that the cost-causer's motives are important for determining an efficient inter-
3 carrier compensation policy, and that for long distance and Internet-bound traffic, the end
4 user is acting as a customer, respectively, of the IXC and ISP. Why that distinction is
5 important can be inferred from Dr. Blackmon's next two sentences, where he correctly
6 observes that when I place local voice calls to shops, Qwest bills me for those calls rather
7 than the shops because I am responsible for the cost of those calls.

8 What Dr. Blackmon doesn't discuss is cost-causality if my call to the shop is a long
9 distance call. In this case, Qwest does not send me a bill for the cost of the local
10 component of the call. Rather, the IXC effectively acts as my agent—the agent of the cost-
11 causer—collects my money and pays all of the LECs who incur costs to carry the local
12 portion of my call. Why is it efficient for Qwest to bill me for a local call while AT&T
13 bills me for a long distance call? In both cases, we agree that the end user should pay for
14 the costs she causes, but why have two different mechanisms for charging customers and
15 reimbursing LECs come about?

16 In my direct testimony, I pointed out that in the case of long distance calls, customers
17 make their decisions based on the service (including characteristics and price) provided by
18 the long distance carrier. LEC carrier access prices are absorbed by the IXC, and end users
19 make long distance calls without reference to local tariffs. Similarly, when an end user
20 makes a local call, she acts as a customer of the supplier of local calls, purchasing the local
21 call out of the tariff (or price list) of the ILEC or CLEC that serves her. Acting as a

1 customer of that carrier, she places local calls without reference to the terms of
2 interconnection, and local reciprocal compensation payments are absorbed by the
3 originating LEC. In both cases, the end user acts as a customer of the carrier that supplies
4 the service, determines prices and service characteristics and collects the money.

5 When the end user dials the Internet, the obvious question we are then led to ask is
6 what carrier is supplying her service, in the sense of determining price and service
7 characteristics and collecting the money? The answer is: the ISP.

8 **Q. HOW CAN THE ISP PLAY THE SAME ROLE AS THE IXC WHEN THE END**
9 **USER PAYS LOCAL EXCHANGE RATES TO REACH THE ISP AND NOTHING**
10 **TO REACH THE IXC?**

11 A. Competition in the markets served by ISPs ensures that—to the extent possible—end users
12 behave as customers of the ISP and not of the LEC on which their calls originate. Thus,
13 ISPs compete by obtaining local numbers at their customers' locations, buying FX lines, or
14 installing 800 numbers so that the ISP controls the price the end user will pay for access to
15 the Internet.

16 **Q. DR. BLACKMON DISAGREES [AT PAGE 14] WITH YOUR ISP-IXC ANALOGY**
17 **BECAUSE, IN HIS VIEW, ISPS ARE NOT TELECOMMUNICATIONS**
18 **CARRIERS. IS THIS CRITICISM GERMANE?**

19 A. Not in my view. I believe Dr. Blackmon and I agree that economic, rather than
20 jurisdictional, analysis should determine compensation for Internet-bound calls. Here, Dr.

1 Blackmon asserts [at page 14] that the difference between the IXC and ISP regime is not
2 economic but rather that “the Internet service provider is not the originating
3 telecommunications company; rather, it is the called party.”

4 **Q. IS THIS DISTINCTION IMPORTANT IN DR. BLACKMON’S ANALYSIS?**

5 A. Yes, it is critical. Dr. Blackmon concludes [at page 15, lines 12 to 15] that if ISPs were
6 treated as carriers,

7 they would pay the originating local exchange company for the use of its loop
8 and switch, but the customer would stop paying the local exchange company.

9 Thus, if ISPs were carriers, Dr. Blackmon would treat them the same way that IXCs are
10 treated. They would pay the originating LEC something that was the functional equivalent
11 of carrier access charges, even if—to be consistent with the ESP exemption—the rate level
12 and structure were taken from the local exchange tariff.

13 Dr. Blackmon is careful to point out that the end user customer would cease paying
14 the originating LEC for her Internet-bound calls under this regime. While true, the warning
15 is, in a sense, superfluous. To the extent that the volume and cost characteristics of
16 Internet-bound traffic were not built into the price of residential basic exchange service, the
17 end user customer has not been paying the cost of such calls all along and no change would
18 be necessary.

19 Dr. Blackmon also points out that this solution for compensating the originating local
20 exchange carrier doesn’t solve the assigned problem, which, he says [at page 15, lines 15 to
21 18], is to determine how to compensate the terminating local exchange carrier. That is,

1 [i]f the law were to change and Internet service providers were to be treated like
2 long-distance companies, the WUTC would still need to determine the proper
3 compensation for the terminating carrier.

4 Fortunately, if the ISP were treated as an IXC, one could use any of the inter-carrier
5 compensation mechanisms that have been used historically when multiple LECs work
6 together to jointly provide originating or terminating carrier access service.

7 There is a subtlety here that should be noted. Neither the LEC that originates the end
8 user's Internet-bound call nor the LEC that delivers that call to an ISP actually "terminates"
9 the call to an end-user. Rather, because the ISP is not an end user, the role of the two LECs
10 should be viewed as being "co-origination." To tell them apart, we may designate the first
11 LEC as the "primary originating LEC" and the second LEC as the "secondary originating
12 LEC."

13 This is, in every respect, analogous to co-origination of long distance calls, in which
14 an independent local exchange carrier with no direct links to an IXC hands off the long
15 distance call made by its end user to a contiguous Regional Bell Operating Company
16 ("RBOC") which, in turn, "originates" the call to an IXC that has a point of presence in its
17 service area. The independent local exchange carrier may then be characterized as the
18 primary originating carrier and the RBOC as the secondary originating carrier. In general,
19 when independent local exchange carriers and RBOCs jointly provide carrier originating
20 access, the secondary originating carrier hands the call off to the IXC and bills the IXC
21 carrier access charges, which the primary and secondary originating carriers then share in
22 proportion to costs or investment or according to a meet-point billing rule.

1 **Q. HOW WOULD THIS PARADIGM WORK WHEN AN ILEC SUBSCRIBER’S ISP**
2 **TAKES SERVICE FROM A CLEC?**

3 A. The CLEC, which in this case is the secondary originating LEC, would bill the ISP, and
4 both the ILEC (the primary originating LEC) and that CLEC would share that revenue by
5 agreement, generally in proportion to the costs incurred to carry the call. Because of the
6 ESP exemption, in the ISP situation, it could be the case that the revenue received by the
7 CLEC is too small to cover the costs of both LECs. In that case, dividing the revenue in
8 proportion to costs incurred would represent a competitively neutral mechanism for funding
9 the subsidy caused by the ESP exemption. Both LECs contribute to the subsidy in
10 proportion to the costs they incur, so that neither LEC is disproportionately responsible for
11 recovering its costs from its end user. In contrast, under reciprocal compensation, the
12 primary originating LEC (actually, its customers) is entirely responsible for funding the ESP
13 subsidy, since, by assumption, the CLEC would be fully compensated for the costs it incurs.

14 **Q. MR. ARGENBRIGHT DISPUTES [AT PAGES 14 TO 15] YOUR COST**
15 **CAUSATION ANALYSIS BECAUSE “IT IGNORES THE STATUS OF AN ISP AS**
16 **AN END USER AND NOT A CARRIER.” DO YOU AGREE?**

17 A. No. This reasoning is merely semantic and tells us nothing about the effects of different
18 forms of inter-carrier compensation on real customers in real markets. There are valid
19 economic reasons why long distance calls are billed by the IXC to the end user and why the
20 IXC compensates the LECs that (jointly) provide originating and terminating access to the
21 public switched network. Those same reasons explain why, for a local voice call, the LEC,

1 whose subscriber originates the call, collects the money for the call and compensates
2 whatever other carriers are involved in handling the call. Since dial-up Internet end users
3 behave as customers of the ISP—in the same sense that long distance customers behave as
4 customers of the IXC—the long distance paradigm for inter-carrier compensation applies to
5 Internet-bound traffic.

6 Mr. Argenbright claims [at page 13] that
7 the status of an ISP is no different than any other business customer who utilizes
8 telecommunications as an input in providing its goods and services to the public
9 but his logic fails to show why the status of ISPs is different from telecommunications-
10 intensive end users.

11 **Q. PLEASE EXPLAIN YOUR POINT.**

12 A. Simply claiming that an ISP is “no different than any other business customer” (implying,
13 thereby, that an ISP is an end user) does not make it so. Mr. Argenbright has the burden to
14 demonstrate not only that the ISP is an end user but also that it is not a carrier. He does
15 neither, and a careful analysis of the ISP’s function reveals why he does not, indeed, cannot.

16 The ISP is only an incidental, though important, player in the Internet user’s efforts to
17 reach the Internet site; it does not itself provide information, conversation, or other material
18 of value to that customer. Instead, the ISP merely acts as a facilitator, the provider of a
19 gateway and a path to the Internet where the real information or article of value sought by
20 the Internet user lies. This is exactly analogous to the case of a long distance call, where
21 the IXC provides no information, conversation, or material of value to the calling end-user,

1 providing instead only a gateway and a path to the called end-user. Thus, the ISP is only a
2 called party for an Internet-bound call in the same sense that an IXC would be a called
3 party for a long distance call.

4 The ISP is thus a carrier and performs all the carrier functions that are needed to get
5 the Internet-bound call from the circuit-switched network where the call originates, through
6 the packet-switched network, and to the Internet destination. This configuration could not
7 be any more different from the case where an end-user on one LEC's network calls an end-
8 user on another LEC's network.

9 **Q. PROPONENTS (LIKE MR. ARGENBRIGHT) OF RECIPROCAL**
10 **COMPENSATION FOR INTERNET-BOUND TRAFFIC OFTEN ASK WHY**
11 **RECIPROCAL COMPENSATION SHOULD APPLY WHEN CROSS-NETWORK**
12 **LOCAL CALLS ARE MADE BY END-USERS TO BUSINESS CUSTOMERS**
13 **(BROKERAGE FIRMS, FLOWER SHOPS, PIZZA PARLORS, ON-LINE BANKS,**
14 **ETC.), BUT NOT WHEN THOSE END-USERS PLACE INTERNET-BOUND**
15 **CALLS THROUGH ISPS. HOW DO YOU RESPOND?**

16 A. There is no conflict between the two situations. The obvious answer is that a brokerage
17 firm, flower shop, pizza parlor, or bank—each legitimately a called party—is an end-user,
18 but an ISP is not. Like the ISP, the pizza parlor or the bank offers its services over the
19 telephone (although, unlike the ISP, it also has non-network means for selling its services).
20 However, there are also some important differences.

21 First, the pizza parlor or the bank does not perform the carrier-like functions of an ISP

1 to provide access to some other party (such as a web server or Internet destination).

2 Rather, the pizza parlor and the bank provide internal access to their own operations, in
3 much the same way that any end-user may be said to provide “access” to himself or herself
4 when a call comes in.

5 Second, the relationship between the calling end-user (and ILEC subscriber) and the
6 pizza parlor or bank is truly reciprocal, as it is supposed to be between two end-users. The
7 pizza parlor or bank can independently call the ILEC subscriber, i.e., on a separate call
8 from that made by that subscriber to the pizza parlor or bank. An ISP, in contrast, serves
9 merely as an Internet access-granting agent to the ILEC subscriber and has no commercial
10 interest in separately returning any calls to that subscriber. In both of these respects, the
11 role of the ISP is strikingly similar to that of an IXC. Unlike the pizza parlor or bank, an
12 IXC too performs the functions of a carrier and has no commercial interest in separately
13 returning any calls to the ILEC subscriber.

14 These differences powerfully demonstrate and reinforce the point that mere
15 resemblance between cross-network local voice calls and Internet-bound calls (up to the
16 ISP) is not enough for both to merit the same compensation mechanism. Without
17 belaboring the point unnecessarily, cost causation does matter.

1 **VI. RECIPROCAL COMPENSATION AT A POSITIVE RATE CREATES SUBSIDIES,**
2 **ARBITRAGE OPPORTUNITIES AND OTHER DISTORTIONS**

3 **Q. DR. BLACKMON STATES [AT PAGE 16] THAT RECIPROCAL**
4 **COMPENSATION PAYMENTS ARE NOT A SUBSIDY TO INTERNET USE. DO**
5 **YOU AGREE?**

6 A. No. To the extent that the ESP exemption means that the ISPs' customers do not pay the
7 total service long run incremental cost ("TSLRIC") of access to the Internet, then Internet
8 access service receives a subsidy. All services priced above TSLRIC contribute to that
9 subsidy and possibly to others.

10 However, to the extent that reciprocal compensation payments exceed the costs the
11 CLECs incur to provide the service, a second form of subsidy arises. Because the ISP
12 access market (the market in which LECs compete to provide network access to ISPs) is
13 reasonably competitive, any excess of reciprocal compensation above cost will be factored
14

1 into the market price that ISPs pay CLECs for access to the public switched network.¹
2 Competition will then push that market price towards the incremental cost of network
3 access less the contribution from reciprocal compensation. At the end of the process, ISPs
4 will pay CLECs less than the TSLRIC of the network access they use, and competition for
5 ISP end user customers will ensure that end users ultimately receive that subsidy in the
6 prices they pay to ISPs for Internet access.

7 **Q. DR. BLACKMON CLAIMS [AT PAGE 16] THAT ARBITRAGE OPPORTUNITIES**
8 **WOULD DISAPPEAR IF RECIPROCAL COMPENSATION RATES WERE SET**
9 **AT COST. DO YOU AGREE?**

10 A. Yes, if the phrase “at cost” refers to the CLEC’s forward-looking incremental cost rather
11 than the ILEC’s. Unfortunately, however, for public policy purposes, the reciprocal
12 compensation price and cost for one-way Internet traffic must be exactly equal. The
13 relationship between price and cost here is knife-edge: if the reciprocal compensation rate
14 exceeds the CLEC’s cost, it will have a perverse incentive to generate sham Internet-bound
15 traffic, while if reciprocal compensation is less than the CLEC’s incremental cost, the
16 CLEC will lose money on every minute it carries. If reciprocal compensation were roughly
17

¹ Note that the market price is paid by ISPs to CLECs, not ILECs. Because the ILEC currently serves nearly all of the residential and small business customers who are dial-up Internet users, calls to ISPs served by ILECs generate almost no reciprocal compensation payments. In contrast, calls to ISPs served by CLECs almost always generate reciprocal compensation payments. Hence, when reciprocal compensation exceeds cost and becomes part of the determination of the market price that ISPs pay for access, the only relevant price is the market price that ISPs pay to CLECs.

1 reciprocal—that is, if traffic were roughly balanced—this knife-edge property would not
2 be important. As it is, it is not reasonable to suppose that a single regulated reciprocal
3 compensation rate can be set that will not give CLECs improper incentives to generate
4 or reject Internet-bound traffic.

5 **Q. DR. BLACKMON STATES [AT PAGE 17] THAT, ALL ELSE EQUAL, HIGHER**
6 **VOLUMES OF INTERNET TRAFFIC MAY LEAD TO HIGHER COSTS THAT**
7 **MUST BE RECOVERED FROM END USERS. DO YOU AGREE?**

8 A. Yes. If reciprocal compensation continues at its current rate, the incremental cost of serving
9 a residential customer who is likely to be a dial-up user of ISP services is likely to create
10 upward pressure on basic exchange rates. Dr. Blackmon qualifies his statement, citing three
11 factors: possible offsetting effects of Internet traffic on the demand for second lines, an
12 offsetting effect from higher load factors on the ILEC's network, and avoided costs when
13 the CLEC handles the call. I have concerns with each of these factors.

14 First, if residential basic exchange service (and second lines) are priced below their
15 TSLRIC, greater demand for second lines will increase, not mitigate, the upward pressure
16 on basic exchange rates. The fact that multiple lines are engineered for households does
17 not suggest that the TSLRIC of a second line is different from that of a first line: in the
18 long run, my use of a second line ties up resources that could be used by other customers.
19 Also, the degree to which inter-office investments have had to increase ever since Internet
20 usage has exploded in the past few years, cannot even begin to be captured in the cost
21 recovery process by prevailing residential basic exchange rates (for both first and second

1 lines).

2 Similarly, the idea that higher utilization rates might mitigate the cost pressure from
3 additional Internet volumes is fundamentally a short run idea. In the long run, a permanent
4 increase in peak-hour calling volumes will hasten the day on which all traffic-sensitive
5 components of the network will require relief, and moving that relief forward in time is
6 precisely the action that causes network costs to be incurred in the long run.

7 Finally, Dr. Blackmon seems to refer to avoided costs [at page 17, line 16], assuming
8 the word “cost” is the missing word between “have” and “had” on that line. If so, it is
9 important to remember that nothing in our setting of reciprocal compensation rates purports
10 to hold the ILEC harmless as the ISP moves from the ILEC to the CLEC. For example,
11 take the case of an ISP previously served by the CLEC which simply fulfills the
12 requirements to be a CLEC and declares itself to be one. The ILEC experiences no
13 reduction in cost to deliver traffic to this CLEC/ISP; in particular, it uses the identical
14 network functions before and after the ISP’s metamorphosis. Similarly, if the ISP moves
15 to a CLEC that interconnects at the ILEC’s end office (rather than at a tandem), the ILEC
16 will not save the cost of any network function. If the ISP moves to a CLEC that
17 interconnects at a tandem, it could then be argued that the ILEC will save the cost of end
18 office switching. In general, there should be no presumption that the ILEC is indifferent
19 between paying (properly set) reciprocal compensation and serving the ISP itself. There is
20 no necessary relationship between the TELRIC of the ILEC for transport and termination
21 and the cost the ILEC avoids (if any) when a CLEC serves the ISP.

1 **Q. MR. ARGENBRIGHT ASSERTS [AT PAGE 16] THAT “PAYMENT FROM**
2 **QWEST TO CLECS IN AN AMOUNT EQUAL TO THE COST IT AVOIDS BY**
3 **NOT HAVING TO PERFORM SUCH TRANSPORT AND TERMINATION**
4 **FUNCTIONS IS FINANCIALLY NEUTRAL TO QWEST.” DO YOU AGREE?**

5 A. Yes, of course. The quoted statement is circular and therefore content-free. What is not
6 true is the missing assertion that reciprocal compensation rates set using the Commission’s
7 rules approximate the cost that Qwest avoids when a CLEC serves the ISP. There is no
8 reason to suppose that Qwest’s TELRIC for transport and termination approximates the
9 costs it saves when an ISP becomes a CLEC. Under some network designs, Qwest may be
10 relieved of some portion of the switching and transport functions that it otherwise would
11 have to perform while, under other circumstances, it is clear that Qwest would incur
12 precisely the same transport and termination costs irrespective of whether the ISP were
13 classified as a CLEC.

14 **Q. DR. BLACKMON OBSERVES [AT PAGE 18] THAT SPECIALIZATION OCCURS**
15 **NATURALLY IN UNREGULATED COMPETITIVE MARKETS. DO YOU**
16 **AGREE?**

17 A. Yes. However, in regulated markets, specialization that occurs to take advantage of a
18 regulatory loophole is certainly not a natural phenomenon and generally does not serve
19 customers well. As the Massachusetts Department of Telecommunications and Energy
20 observed (and I noted in my direct testimony):

21 The unqualified payment of reciprocal compensation for ISP-bound traffic,

1 implicit in our October Order’s construing of the 1996 Act, does not promote
2 real competition in telecommunications. Rather, it enriches competitive local
3 exchange carriers, Internet service providers, and Internet users at the expense of
4 telephone customers or shareholders. This is done under the guise of what
5 purports to be competition, but is really just an unintended arbitrage opportunity
6 derived from regulations that were designed to promote real competition. A
7 loophole, in a word. ... But regulatory policy ... ought not to create such
8 loopholes or, once having recognized their effects, ought not leave them open.

9 Real competition is more than just shifting dollars from one person’s pocket to
10 another’s. And it is even more than the mere act of some customers’ choosing
11 between contending carriers. Real competition is not an outcome in itself—it is
12 a means to an end. The “end” in this case is *economic efficiency* ... Failure by
13 an economic regulatory agency to insist on true competition and economic
14 efficiency in the use of society’s resources is tantamount to countenancing and,
15 encouraging waste of those resources. Clearly, continuing to *require* payment of
16 reciprocal compensation ... is not an opportunity to promote the general welfare.
17 It is an opportunity only to promote the welfare of certain CLECs, ISPs, and
18 their customers, at the expense of Bell Atlantic’s telephone customers and
19 shareholders.²

20 I concur with Dr. Blackmon’s conclusion [at page 18, line 4] that specialization means that
21 it is very important that prices be set based on cost. However, for one-way traffic, there is
22 no room for error in setting a reciprocal compensation rate: if it is too high or too low for
23 any particular CLEC, that CLEC will face distorted incentives to carry or not carry
24 Internet-bound traffic.

25 **Q. MR. ARGENBRIGHT ASSERTS [AT PAGE 17] THAT “QWEST WOULD HAVE**
26 **THIS COMMISSION BELIEVE THAT THE ALLEGED MISMATCH [BETWEEN**

² Massachusetts Department of Telecommunications and Energy, Complaint of MCI WorldCom, Inc., Against New England Telephone and Telegraph Company d/b/a Bell Atlantic-Massachusetts for Breach of Interconnection Terms Entered Into Under Sections 251 and 252 of the Telecommunications Act of 1996, Docket No. 97-116-C, Order (“Massachusetts ISP Compensation Order”), May 1999. Emphasis added (in part) and in original (in part).

1 **LOCAL EXCHANGE REVENUES AND RECIPROCAL COMPENSATION**
2 **PAYMENTS] IS A RESULT OF CLEC ENTRY INTO THE WASHINGTON**
3 **TELECOMMUNICATIONS MARKETPLACE.” DO YOU AGREE WITH THAT**
4 **ASSERTION?**

5 A. No. In my view, the mismatch between residential local exchange revenue and reciprocal
6 compensation payments is due to the current improper compensation policy and rates which
7 give ISPs distorted incentives to locate behind CLECs to generate reciprocal compensation
8 payments. No efficient mechanism for inter-carrier compensation would permit this kind of
9 distortion to remain.

10 **Q. DR. BLACKMON [AT PAGE 18] REJECTS BILL AND KEEP AS AN INTER-**
11 **CARRIER COMPENSATION MECHANISM UNLESS “TRAFFIC IS ROUGHLY**
12 **IN BALANCE.” DO YOU AGREE?**

13 A. Yes, but I come to the opposite conclusion from Dr. Blackmon. Because CLECs can
14 choose their customers (and effectively choose their ratio of originating to terminating
15 traffic), it is naive to treat the balance of traffic as some natural phenomenon which
16 constrains the inter-carrier compensation problem we are trying to solve. Rather, the degree
17 to which traffic is balanced will depend on the inter-carrier compensation mechanism we
18 establish. Under bill and keep, carriers will no longer seek out customers that terminate
19 large amounts of traffic, and one might expect the degree of traffic imbalance to be smaller
20 than that which we experience today under per-minute reciprocal compensation set at the
21 average cost of terminating local exchange (voice) traffic.

1 **VII. THE COST OF CARRYING INTERNET-BOUND TRAFFIC IS GENERALLY**
2 **LOWER THAN THE COST OF CARRYING LOCAL VOICE TRAFFIC**

3 **Q. MR. STARKEY ASSERTS [AT PAGES 8 TO 11] THAT BECAUSE TELRIC**
4 **CALCULATIONS ARE BASED ON THE TOTAL DEMAND FOR THE ELEMENT**
5 **IN QUESTION, IT IS (1) INCONSISTENT WITH THE FCC'S REQUIRED**
6 **METHODOLOGY, AND (2) NONSENSICAL TO DEAVERAGE COSTS AND**
7 **RATES FOR DIFFERENT TYPES OF TRAFFIC. DO YOU AGREE?**

8 A. No. When costs differ for different types of traffic, it is efficient to consider deaveraging
9 those costs and charging different users different rates. This basic economic principle does
10 not imply that it is always efficient to reflect any cost differences in rates; rather, transaction
11 costs must be taken into account as well as the ability to charge different prices for different
12 customers, different locations, or different service characteristics.

13 Mr. Starkey's assertion that TELRIC rules prohibit deaveraging costs is incorrect.

14 The FCC itself observes that unbundled loop costs should be deaveraged across geographic
15 areas to reflect differences in costs and that costs can be deaveraged across peak and off-

16

1 peak usage for switching.³

2 Mr. Starkey’s second point is equally wide of the mark. He argues [at page 10] that

3 any attempt to allocate switched usage costs more precisely by the type of
4 service or by the type of customer that will use the switch is arbitrary at best.

5 He observes correctly that it is the “engineered capacity” of the switch that requires costs to
6 be expended and that capacity is indifferent to whether the traffic derives from a pizza
7 parlor or an ISP. However, engineered capacity is not indifferent to the characteristics of
8 the traffic. An additional minute of use at the busy hour is costly because it exhausts
9 capacity and causes investment, while the same minute of use off-peak generates none of
10 those capacity costs. As explained in my direct testimony [at pages 38 to 40], an additional
11 Internet-bound minute switched at a one-to-one concentration ratio will have different fixed
12 and variable costs from an additional voice minute switched at an eight-to-one
13 concentration ratio.⁴ Under the existing rate structure (which recovers fixed call set-up and
14 all incremental costs of a call from a single per-minute rate), an additional Internet-bound
15 call of 28 minutes duration exhibits a different average “cost” or rate per minute from an
16 additional voice call of three minutes duration. In this sense it is perfectly sensible to
17 distinguish types of traffic by the costs they cause, even though, in Mr. Starkey’s words [at

³ FCC, In the Matter of Local Competition Provisions in the Telecommunications Act of 1996, CC Docket No. 96-98, First Report and Order, released August 19, 1996, ¶¶ 764-765 and 1064.

⁴ My Direct Testimony explains that while a switch is typically configured for voice traffic to handle eight end user circuits for every call path through the switch, the configuration is very different for Internet-bound traffic. ISPs that link to LECs in order to receive incoming Internet-bound traffic typically use ISDN PRI links for the purpose which have a dedicated (i.e., one-to-one) call path through the switch, thus ensuring no blockage. The cost of a dedicated facility is not variable or traffic-sensitive, whereas that of a shared facility is.

1 page 11], “they are both consuming the exact same finite capacity resources of the same
2 switch.”

3 **Q. MR. STARKEY PROPOSES TO UPDATE TRADITIONAL TRAFFIC STUDIES TO**
4 **ACCOUNT FOR LONGER INTERNET HOLD TIMES OR TO IMPLEMENT A**
5 **TWO-PART TARIFF HAVING A SEPARATE CHARGE FOR THE FIRST AND**
6 **SUBSEQUENT MINUTES OF USE. ARE THESE GOOD IDEAS?**

7 A. Generally speaking, yes. Since switching costs include separate call set-up and duration
8 components, it may be efficient to reflect those differences in a rate structure that recovers
9 the call set-up cost from the first minute and call duration costs from all minutes of use.
10 However, implementing such a rate structure does not solve all of the problems with
11 reciprocal compensation discussed above, and the declining average incremental usage cost
12 (from spreading set-up costs over longer duration) is not the only reason why per-minute
13 costs are likely to be lower for Internet-bound traffic.

14 **Q. MR. STARKEY ASSERTS [AT PAGE 16] THAT UNDER ONE-TO-ONE**
15 **CONCENTRATION, ISDN-PRI LINES “USE THE SWITCH’S TRAFFIC**
16 **SENSITIVE ELEMENTS...AND DO GENERATE TRAFFIC SENSITIVE COSTS.”**
17 **DO YOU AGREE?**

18 A. No. While it is true that many of the switch resources that this traffic uses exhaust with
19 peak period usage, engineering a switch for one-to-one concentration transforms those
20 resources into capacity which does not exhaust irrespective of the offered load. When a

1 customer sends additional usage to the switch under these circumstances, there is no
2 additional capacity required to serve the demand. Hence, although non-blocking switching
3 is a higher grade of service that is generally more costly to provide and which commands a
4 premium in the market, the costs which increase when usage increases are necessarily
5 smaller.

6 **Q. DOES THE FACT THAT ONE-TO-ONE CONCENTRATION MAY BE USED TO**
7 **SERVE OTHER TYPES OF CUSTOMERS MEAN THAT “THE COSTS**
8 **ASSOCIATED WITH ACCOMMODATING END-USER TRUNKING AT LOW**
9 **LEVELS OF CONCENTRATION...SHOULD ALREADY BE INCORPORATED IN**
10 **THE STUDIES” AS CLAIMED BY MR. STARKEY [AT PAGE 23]?**

11 A. Not satisfactorily. Like the issue of longer holding times, it is possible to reflect cost
12 differences for Internet-bound traffic more accurately in an average across all types of
13 traffic. However, because costs for this type of traffic differ significantly from the costs for
14 local voice traffic—and because the ESP exemption applies to this type of traffic as
15 opposed to ordinary voice traffic and constrains cost recovery—it is important for policy
16 and economic efficiency to deaverage costs and calculate the costs of transport and
17 termination for this traffic separately.

18 **Q. MR. STARKEY OPINES THAT BECAUSE CLECS SPECIALIZE IN SERVING**
19 **ONE TYPE OF CUSTOMER, THE LOAD DISTRIBUTION THEY FACE IS MORE**
20 **PEAKED THAN THAT FACING ILECS WHO SERVE A VARIETY OF**

1 **CUSTOMERS. IS THIS A REASONABLE CONJECTURE?**

2 A. No. In the first place, a CLEC that specializes in serving ISPs in reality serves the ISP's
3 customers, and the calling habits of these dial-up Internet users may well be more varied
4 than those of the ILEC's traditional voice customers. The fact that Internet traffic is
5 generated by residential and business customers and includes both voice and data calls
6 suggests that the daily load distribution of a CLEC specializing in ISP traffic may be flatter
7 than a traditional ILEC's load distribution, in the sense of having a smaller proportion of
8 calls during the peak hour.

9 Second, Mr. Starkey has shifted the unit of analysis in his argument. Our task was to
10 calculate the ILEC's incremental cost of serving Internet-bound traffic, not the cost of a
11 CLEC specializing in serving ISPs. For an ILEC, the cost in question is the cost of adding
12 Internet traffic to its load of traditional local exchange and long distance traffic, and the
13 incremental cost of Internet traffic depends in part on the effect of superimposing the
14 Internet load distribution with the load distribution for traditional traffic. If adding Internet
15 traffic to the switch results in a less peaked load distribution, then the average incremental
16 cost to the ILEC of carrying this traffic will be smaller than that of carrying traditional
17 traffic.

18 Of course, since the problem here is a rate structure (constant charge per minute of
19 use) that doesn't correspond to the cost structure (much higher costs for traffic at the peak),
20 there is an alternative solution. Like a two-part tariff to correct for set-up and duration
21 costs, implementing peak load pricing would mitigate this problem. However, in

1 calculating costs to determine rates under the current rate structure, differences between
2 Internet and traditional call characteristics such as holding time and peakedness of the load
3 distribution should be reflected in measures of average incremental cost.

4 **Q. MR. STARKEY ASSERTS [AT PAGES 36 TO 37] THAT THE CLEC SHOULD BE**
5 **ALLOWED TO ASSESS A RATE EQUAL TO THE END OFFICE SWITCHING,**
6 **TANDEM SWITCHING AND TRANSPORT RATES ASSESSED BY THE ILEC**
7 **WHEN TERMINATING TRAFFIC DELIVERED TO THE TANDEM SWITCH. IS**
8 **THERE ANY ECONOMIC BASIS FOR THAT ASSERTION?**

9 A. No. Mr. Starkey's discussion mainly addresses the application of FCC rules. At pages 41
10 to 42, he does argue that symmetric rates should be paid because the CLEC provides a
11 similar function when it terminates traffic originated by the ILEC's customers. However,
12 given the imbalance of dial-up Internet-bound traffic due to CLEC specialization in serving
13 ISPs, this reason for symmetric rates has little applicability in the real world. More to the
14 point is the observation that whenever the reciprocal compensation rate received by the
15 CLEC exceeds its cost of handling the traffic, the CLEC faces distorted incentives to seek
16 out ISP customers and generate additional terminating traffic.

17 **Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

18 A. Yes.