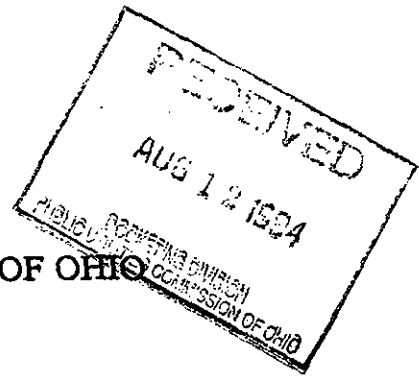


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BEFORE

THE PUBLIC UTILITIES COMMISSION OF OHIO

In the Matter of the Application of
The Ohio Bell Telephone Company
for Approval of an Alternative Form
of Regulation.

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:
:

Case No. 93-487-TP-ALT

SUPPLEMENTAL DIRECT TESTIMONY

OF

EDWIN A. ROSENBERG, Ph.D.

THE NATIONAL REGULATORY RESEARCH INSTITUTE
1080 CARMACK ROAD
COLUMBUS, OHIO 43210-1002
(614) 292-9404

1 1. Q: WHAT IS YOUR NAME?

2 A: My name is Edwin A. Rosenberg.

3
4 2. Q: HAVE YOU PREVIOUSLY FILED DIRECT TESTIMONY IN THIS
5 PROCEEDING?

6 A: I have.

7
8 3. Q: WHAT IS THE PURPOSE OF YOUR SUPPLEMENTAL DIRECT
9 TESTIMONY?

10 A: The purpose of my supplemental direct testimony is to expand, clarify, and
11 extend my direct testimony. Specifically, my supplemental direct testimony
12 amplifies my answer to the question that begins on page seven of my direct
13 testimony. That answer dealt with the relation between long-run service
14 incremental cost (LRSIC) and prices.

15
16 4. Q: WOULD YOU EXPLAIN HOW THE COMMISSION HAS DEFINED LRSIC?

17 A: In its Finding and Order in Case No. 92-1149-TP-COI (*In the Matter of the*
18 *Commission's Promulgation of Rules for Establishment of Alternative Regulation for*
19 *Large Local Exchange Companies*), the Commission (at 11-12) defined LRSIC as
20 being "... equal to the per unit cost of increasing the volume of production from
21 zero to a specified level, while holding all other product and service volumes
22 constant ..." The Commission stated (at 12) that the calculation of LRSIC
23 includes "... an appropriate proportion of the joint costs necessary and used to
24 provide a group or family of services." The Commission also stated (at 12) that
25 "... the joint cost component does not include the common overhead costs of the
26 firm ..." and that "... LRSIC studies do not include any allocation of common
27 overhead costs."

1 5. Q: YOUR DIRECT TESTIMONY AND THE *ADDENDUM* STATE THAT
2 WIDESPREAD PRICING OF COMPETITIVE SERVICES AT OR NEAR
3 LONG-RUN SERVICE INCREMENTAL COSTS IS NOT APPROPRIATE.
4 WHY DO YOU BELIEVE THIS?

5 A: LRSIC calculations do not include any portion of general corporate
6 overhead and common costs. Specifically, LRSIC for may not include any
7 component for subscriber loop plant. If simultaneous production of multiple
8 telephone services results in significant economies of scope, the sum of the
9 LRSICs of the various services will be less than the total cost of operating the
10 firm as an ongoing concern. Although LRSIC may be useful in developing an
11 absolute price floor, pricing services at or near LRSIC should be cause for some
12 concern.

13 One use of LRSIC is to determine the extent to which a service or a group
14 of services is receiving a subsidy. One test to determine whether prices are
15 "subsidy-free" uses the stand-alone cost of a service as an upper bound and the
16 total service incremental cost, which is equivalent to LRSIC as adopted by the
17 Commission, as a lower bound. Any set of prices such that no service or group of
18 services generates revenues that are more than stand-alone cost or less than
19 incremental cost is said to be subsidy-free.

20
21 6. Q: PLEASE EXPLAIN THE CONCEPTS OF STAND-ALONE COST AND
22 INCREMENTAL COST AS THEY ARE USED IN THE DISCUSSION OF
23 SUBSIDY-FREE PRICES.

24 A: The stand-alone cost of a service is the minimum cost of delivering that
25 service, by itself, to consumers. In multiproduct firms, if economies of scope are
26 present, the sum of various products' stand-alone costs will be greater than the
27 cost of simultaneous production. Both equity and market considerations lead to
28 the notion that a firm should not charge more than the stand-alone cost of a
29 service. Equity considerations indicate that it would be unfair to do so, and,
30 absent legal restrictions on entry, market forces would either give incentive to

1 another producer to offer a lower price or cause consumers to form a coalition to
2 engage in self-supply.

3 The incremental cost of a service is the minimum cost of adding that
4 service to the existing product mix. Because it is the minimum additional cost
5 created by that service, the incremental cost of a service serves as a price floor.
6 Services that produce total revenues that are less than their incremental costs are
7 receiving a subsidy because the firm would be better off if those services were not
8 produced. In multiproduct firms, if economies of scope are present, the sum of
9 various services' incremental costs will be less than the total cost of simultaneous
10 production. For example, one source of economies of scope for a local exchange
11 company is the existence of an integrated local loop through which multiple
12 services can be delivered. As an example, the fact that new loops need not be
13 deployed in order to offer additional services is one source of economies of scope
14 in telephony.

15
16 7. Q: ARE THERE REASONS FOR THE COMMISSION TO BE CONCERNED
17 ABOUT THE USE OF LRSIC AS A PRICE FLOOR?

18 A: LRSIC calculations for new or competitive services may provide a
19 relatively low floor, offering little protection for competitors or for consumers of
20 monopoly services. First, although LRSIC includes some service family or group
21 shared costs, by definition it does not include any general corporate shared costs
22 such as overheads. If a firm has many service offerings, and if there is a high
23 proportion of shared cost, LRSIC may be low relative to some measure of total
24 cost. This may give a multiproduct firm considerable room to manipulate its
25 prices to keep out competitors.

26 Second, LRSIC calculations may be misleading. As defined, LRSIC is the
27 cost of moving from zero output of a service to the contemplated or current level
28 of output. As a result, if shared costs are significant, those services added last to
29 a fully deployed network may have very low calculated LRSICs, because none of
30 the common costs of deploying the network will be assigned to the added service.

1 This is especially important when LRSICs are calculated for groups of new
2 or competitive services because LRSIC does not allocate any portion of general
3 corporate shared costs or loop costs to these new or competitive services. If new
4 or competitive services are priced at or near their LRSICs, the cost of the local
5 loop may end up being recovered from pre-existing services even though new or
6 competitive services are also delivered through the local loop.

7 The Commission's discussion of LRSIC in its Finding and Order in Case
8 No. 92-1149-TP-COI recognized the problem and stated (at 12, footnote 9) that:
9 "This does not mean that all common overhead costs are to be collected from Cell
10 1 [monopoly] services."
11

12 8. Q: CAN YOU ILLUSTRATE THE COST STRUCTURE OF A MULTIPRODUCT
13 FIRM AND ITS RELATION TO LRSIC CALCULATIONS?

14 A: Yes. I have included a figure titled "General Cost Structure" and marked
15 as Rosenberg Exhibit 1. This figure offers a stylized representation of the cost
16 structure of a multiproduct firm that produces four products in two families.
17 Some of the costs, labeled "Direct Product Costs" are uniquely caused by the
18 production of individual products. Other costs are shared within a family of
19 products. Finally, there are fixed overhead costs that are shared by all products.
20 LRSIC calculations for individual products include direct product costs and each
21 product's directly traceable or identifiable portion of product family shared costs,
22 if any. LRSIC calculations do not, however, include any portion of fixed overhead
23 costs.
24

25 9. Q: ARE THERE POLICY QUESTIONS THAT RELATE TO OPTIONS FOR
26 DEALING WITH THIS PROBLEM?

27 A: The Commission has several policy questions to consider. These include:
28 the extent to which prices should be based on LRSIC; how to protect basic
29 monopoly services; and various methods of adding overheads to LRSIC.

30 For example, if the competitive process itself is valued, the Commission

1 could adopt a policy aimed at promoting entry and be reluctant to allow prices to
2 drift as low as LRSIC. Furthermore, there may be a tradeoff between static
3 efficiency and dynamic efficiency. For example, although an incumbent LEC may
4 be the most efficient current producer, competitive entry might, over time,
5 promote greater efficiency, possibly by putting pressure on the LEC to become
6 more efficient. Alternatively, if the Commission wants to encourage or promote
7 penetration of certain services, it might encourage pricing near LRSIC in order to
8 develop the market.
9

10 10.Q: HOW MIGHT BASIC MONOPOLY SERVICES BE PROTECTED?

11 A: One method of protecting basic monopoly services is to ensure that the
12 incremental cost of upgrading the network for delivery of enhanced and
13 competitive services is assigned to those services, not basic monopoly services.
14 Under this approach, any costs incurred to upgrade the network to deliver
15 anything of higher quality than voice-grade communication services would be
16 considered common to services requiring more advanced technology. The cost of
17 upgrading the network to deliver new services would not be assigned to basic
18 monopoly services such as access.
19

20 11.Q: WHAT ARE SOME OF THE OPTIONS FOR ADDING COMMON COSTS
21 TO LRSICS?

22 A: As I noted previously, the LRSICs of new services may be low because the
23 cost of the local loop, which is a major element of embedded investment, and
24 general corporate common costs are not loaded onto new services added to an
25 existing network. This is true even though the new services derive benefit from
26 the existence of that network. Therefore, it might be useful to consider various
27 options for making all services carry some of the burden of common costs. There
28 are several ways of doing this.

29 One approach bases the assignment of common costs on relative revenues
30 or other measures. Under this approach as use of competitive services grows

1 relative to basic monopoly services, their relative shares of both revenues and
2 common costs would increase. Another approach would be to base assignments
3 of shared costs on the proportion of direct costs attributed to various services.
4 Again, if usage of these services grows more rapidly than usage of monopoly
5 services, the share of common costs assigned to them would also increase.

6 As I noted previously, a service's calculated LRSIC may depend on the
7 order in which it is added to the network. In other words, a service's LRSIC
8 depends on the mix of other services already being delivered. If economies of
9 scope are significant, services added last may have very low calculated LRSICs.
10 This is because, although these services benefit from the existence of the network,
11 LRSIC assigns none of the costs of the network to the services added last. Thus,
12 conventional LRSIC calculations might be called a "last-added LRSIC."

13 One way to adjust for this would be to give each family or group of
14 services an equal opportunity of being added first, second, third, or, ultimately,
15 last. LRSICs for each family or group of services, including basic access services,
16 could be calculated under the assumption that it would be added first, second,
17 third, and, ultimately, last to a network already capable of delivering other
18 services. The resulting set of estimates of each service's LRSIC could then be
19 averaged to determine the service's "average LRSIC."

20 Each service family or group's average LRSIC would be compared with
21 that service or family group's last-added LRSIC, and the difference between the
22 two LRSICs would indicate the "average net benefit" that a service family or
23 group receives as a result of being produced simultaneously with other services.
24 Finally, the total average net benefit to all service families or groups could be
25 calculated by summing the average net benefits of all service families or groups,
26 and shared costs could be assigned to various service families or groups based on
27 the proportionate share of total average net benefit that each service family or
28 group receives.

29 Another version of the net benefit approach (sometimes called the
30 Aumann-Shapley approach) calculates the net benefit to a service family or group

1 of being produced jointly with other services instead of being produced on a
2 stand-alone basis. Thus, the net benefit accruing to a service would be calculated
3 as the difference between its last-added LRSIC and its stand-alone cost. These
4 benefits would then be summed over service families or groups to obtain total net
5 benefits, and factors for assigning common costs would be based on each service
6 family or group's proportionate share of total net benefits. In either of these last
7 two approaches, monopoly services would not be asked to contribute more than
8 their direct costs plus their assigned portion of common costs.

9
10 12.Q: HOW DOES THE USE OF LRSIC AS A PRICE FLOOR INTERACT WITH
11 THE ADOPTION OF PRICE-CAP REGULATION?

12 A: Suppose that a price-cap plan takes the following form: (1) initial price
13 levels are set for monopoly services based on current cost allocations;
14 (2) thereafter, prices for monopoly services are capped so that they can increase
15 by no more than the rate of inflation, adjusted for productivity increases,
16 exogenous factors, and service quality; (3) prices for competitive and new services
17 are flexible, with incremental cost as a floor; and (4) there is no profit-sharing
18 mechanism.

19 Under this type of price-cap regulation, prices of monopoly services
20 (access, etc.) are likely to trend upwards unless the productivity adjustment factor
21 is greater than the average rate of inflation. This type of price-cap regulation also
22 effectively freezes the current structure of cost allocations. The current structure
23 of cost allocations assigns most local network and loop costs to monopoly services,
24 which currently generate the majority of revenues.

25 Suppose further that, over time, new services are offered and that usage of
26 these services increases relative to usage of monopoly services. In other words,
27 suppose that, in the future, the telephone network will be used both more
28 extensively (a greater number of services) and more intensively (increasing use of
29 services). Note that, in this situation, LRSIC calculations will assign little or none
30 of the common costs of the local loop to new services even though they are

1 delivered through the local loop and clearly benefit from its existence. As a
2 result, a telephone company operating under this form of price-cap regulation
3 ends up with a very favorable situation: (1) a large portion of its costs (including
4 common overheads and the cost of the local loop) are covered by monopoly
5 services, whose rates track adjusted inflation; (2) it is free to charge what it wants
6 for new discretionary services that face little competition; and (3) if competition is
7 a problem, it can drop price as low as LRSIC, which includes little or none of
8 general overheads and common costs.

9 Such a situation would not be allowed either under traditional regulation
10 or under any reasonably equitable scheme of regulation. Under more reasonable
11 schemes, as new services were offered, and their usage increased, their
12 responsibility for common costs (including the cost of providing the local network)
13 would increase. This might entail reviewing cost allocations periodically to adjust
14 for changes in relative usage.

15 Alternatively, if new services were profitable, some portion of their profits
16 might be used to lower the revenue requirement of monopoly services. In either
17 case, monopoly services would receive some of the benefit from more extensive
18 and intensive use of the network. Under a price-cap plan such as the one I have
19 just described, this would not happen, and the Commission should carefully
20 consider the consequences and alternatives.

21 That all services should contribute to the common costs of deploying the
22 local loop is not a radical idea; traditional fully distributed cost studies would
23 clearly do this. In addition, the notion that if a service uses the local loop it
24 should contribute to its deployment and upkeep does not seem radical. At a
25 minimum, cost allocations could be reviewed periodically to ensure that monopoly
26 services are not contributing more than a fair share to common costs.

27
28 13.Q: DOES THIS CONCLUDE YOUR SUPPLEMENTAL DIRECT TESTIMONY?

29 A: Yes, it does.



CERTIFICATE OF SERVICE

I hereby certify that a true copy of the foregoing Prepared Testimony submitted on behalf of the Public Utilities Commission of Ohio was served by regular, U.S. mail, postage prepaid or hand delivered to the parties of record on this 12th day of August, 1994.



ANN E. HENKENER
Assistant Attorney General

PARTIES OF RECORD:

Michael Mulcahy
Ameritech Ohio
45 Erieview Plaza, Room 1400
Cleveland, OH 44114

Barry Cohen
Associate Consumers' Counsel
Office of the Consumers' Counsel
77 South High Street, 15th Floor
Columbus, OH 43266-0550

Judith B. Sanders
Bell, Royer & Sanders Co., LPA
33 South Grant Avenue
Columbus, OH 43215-3927

Robin P. Charleston
AT&T Communications of Ohio, Inc.
227 West Monroe Street, 6th Floor
Chicago, IL 60606

Douglas W. Trabaris
MCI
205 N. Michigan Avenue, Suite 3200
Chicago, IL 60601

Mary Hull
Sprint Communications Co., L.P.
8140 Ward Parkway, 5E
Kansas City, MO 64114

William M. Ondrey Gruber
City of Cleveland
601 Lakeside Avenue, Room 106
Cleveland, OH 44114

Gregory Dunn
Crabbe, Brown, Jones, Potts & Schmidt
500 S. Front Street, Suite 1200
Columbus, OH 43215

Maureen Grady
Hahn Loeser & Parks
431 E. Broad Street, Suite 200
Columbus, OH 43215

Janine Migden
Hahn Loeser & Parks
431 E. Broad Street, Suite 1200
Columbus, OH 43215

William S. Newcomb, Jr.
Vorys, Sater, Seymour & Pease
52 East Gay Street
P. O. Box 1008
Columbus, OH 43216-1008

Bruce J. Weston
AARP
169 West Hubbard Avenue
Columbus, OH 43215-1439

Joseph Meissner
Legal Aid Society of Cleveland
1223 West Sixth Street
Cleveland, OH 44113

Karin Rilley
Education Section
Office of the Attorney General
30 East Broad Street, 15th Floor
Columbus, OH 43266-0410

Ellis Jacobs
Dayton Legal Aide
333 West 1st Street, Suite 500
Dayton, OH 45402

Samuel C. Randazzo
Emens, Kegler, Brown, Hill & Ritter
65 East State Street, Suite 1800
Columbus, OH 43215

Sally W. Bloomfield
Bricker & Eckler
100 South Third Street
Columbus, OH 43215

Dennis K. Muncy
Meyer, Copel, Hirschfield, Muncy,
Jahn & Aldeen
Athenaeum Building
306 W. Church Street, P.O. Box 6750
Champaign, IL 61826-6750

Cecil O. Simpson, Jr.
Office of The Judge Advocate General
Department of the Army
901 North Stuart Street
Arlington, VA 22203-1837

Daniel Malkoff
Dept. of Administrative Services
30 East Broad Street
Columbus, OH 43215

Sheldon Taft
Vorys, Sater, Seymour and Pease
52 East Gay Street
P. O. Box 1008
Columbus, OH 43216-1008

Clyde Kurlander
Teleport
Three First National Plaza
Chicago, IL 60602

Kerry Bruce
City of Toledo
Dept. of Public Utilities
One Government Center, Suite 1520
Toledo, OH 43604

William A. Adams
Arter & Hadden
10 West Broad Street
Columbus, OH 43215