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1 **REBUTTAL TESTIMONY OF SARAH J. GOODFRIEND**

2 **ON BEHALF OF MCI**

3 **MCI/GTE ARBITRATION DOCKET**

4 **September 30, 1996**

5

6 **Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

7 A. My name is Sarah J. Goodfriend and my business address is 701 Brazos, Suite 600,

8 Austin, Texas 78701.

9

10 **Q. ARE YOU THE SAME SARAH J. GOODFRIEND WHO PRESENTED**

11 **DIRECT TESTIMONY ON BEHALF OF MCI IN THIS PROCEEDING?**

12 A. Yes, I am.

13

14 **Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?**

15 A. The purpose of my rebuttal testimony is to respond to some criticisms of the Hatfield

16 Model included in the testimony of Gregory M. Duncan and to respond to certain

17 economic propositions developed by David S. Sibley, on behalf of GTE Florida

18 Incorporated (GTE-FL). Because Dr. Duncan provides the substance of his

19 testimony in attachment Exhibit GMD-1, my citations are to numbers in his

20 attachment. I respond to Dr. Sibley's direct testimony and to portions of Exhibit No.

21 DSS-2 *An Economic Framework for Implementing the Pricing Provisions of the*

22 *Telecommunications Act of 1996 (Framework)*.

23

24 **Q. TO WHICH OF DR. DUNCAN'S CRITICISMS WILL YOU BE**

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1 **RESPONDING?**

2 A. I address criticisms based on economic principles. MCI and AT&T Witness Don J.
3 Wood responded to many of Dr. Duncan's criticisms in his rebuttal testimony in this
4 consolidated docket, filed September 24, 1996. Generally I will not address the issues
5 responded to by Mr. Wood.

6

7 **Q. IT IS "VEXING" TO DR. DUNCAN THAT THE HATFIELD MODEL IS**
8 **NOT VALIDATED OR CALIBRATED BY COMPARISON TO REAL**
9 **WORLD PHENOMENA. (AT 4) WHAT IS HIS CONCERN?**

10 A. Dr. Duncan's quarrel is with the fact that the Hatfield Model builds a network using
11 the raw inputs available to the incumbent LECs, such as price lists and engineering
12 specifications, but generally rejects the usefulness of observations of incumbent LEC
13 embedded costs. Engineering principles and judgments are expressed in the model as
14 specific, transparent model algorithms. The openness of the Hatfield Model is the
15 characteristic of the model supporting its validation.

16

17 **Q. DR. DUNCAN COMPLAINS THAT THE HATFIELD MODEL IS**
18 **"GROSSLY AT ODDS WITH HOW REAL BUSINESSES INCUR COSTS,**
19 **ESPECIALLY CAPITAL INTENSIVE FIRMS THAT EXPAND THEIR**
20 **FACILITIES BY ADDING CAPACITY IN DISCRETE MODULES." (AT 5)**
21 **WHAT IS HIS CONCERN?**

22 A. Dr. Duncan takes issue with the fact that the FCC did not impose any constraints on
23 how forward-looking network costs were to be developed other than the requirement
24 that existing wire centers be taken as given. Presumably, Dr. Duncan would be

satisfied if the FCC had simply *presumed* that GTE-FL costs are forward-looking economic costs. This could be accomplished for example, by imposing additional constraints of capital fixity, requiring ever more incumbent LEC plant or network design be "kept in place" when estimating forward-looking economic cost. Ultimately, this approach would transform a long-run TELRIC model into a short-run TESRIC model because of the magnitude of fixed investments. The FCC explicitly rejected such an embedded cost approach and rejected its implication, that entrants pay for obsolete or inefficient network design or technology.

Q. DR. DUNCAN CLAIMS THAT THE HATFIELD MODEL CREATES A CONTRADICTORY WORLD IN WHICH FULL COMPETITION AND SCALE ECONOMIES "THAT WOULD ORDINARILY DICTATE A MONOPOLY STRUCTURE" COEXIST. (AT 7) DOES THE HATFIELD MODEL RELY ON A CONTRADICTION?

A. There is no contradiction here. One of the great breakthroughs in modern economic thought has been the recognition that the existence of natural monopoly of the *facility* need not give rise to natural monopoly of the *firm*. This distinction allows a single or monopoly facility to be shared among multiple firms. For example in trucking, electricity and other industries (notably oil pipelines and deep harbor ports), institutional arrangements provide for sharing of access or use rights to natural monopoly facilities, and so facilitate competition in related markets. Shared use of monopoly facilities such as roadways and electric transmission lines facilitate competition in trucking and power generation, respectively. Because the Hatfield Model conforms to the FCC pricing guidelines and incorporates economies

associated with shared plant existing in a wholesale-only network, the Hatfield Model facilitates the introduction of a world where full competition and natural monopoly facilities may coexist.

Q. WHAT OTHER ECONOMIC CLAIMS CAN YOU DISCERN FROM DR. DUNCAN'S DISCUSSION AT 6-7?

A. Dr. Duncan reiterates claims made by incumbent LECs to the FCC. These are mentioned here and reasserted again (at 17-18) as claims that Hatfield cost of capital and depreciation are too low. I understand the claims to be: (1) It is inappropriate for the Hatfield Model to incorporate forward-looking least cost technology because competitive firms don't completely incorporate new technology owing to the risk of technological obsolescence and potential underrecovery of investment. (2) Dr. Hausman says that regulatory depreciation rates and cost of capital measures are too low for the transition to competition. Dr. Duncan does not develop these assertions, so I will not belabor a response. I note, however, that claims regarding adequacy of compensation and its relation to risk-bearing, a central thread of both (1) and (2) above have been raised and addressed in detail in pleadings before the FCC in the Interconnection Proceeding (Docket 96-98). Two documents prepared on behalf of MCI which address these claims are *Depreciation Policy in the Telecommunications Industry: Implications for Cost Recovery by the Local Exchange Carriers,* 12/95 and *Depreciation and Capital Recovery Issues: A Response to Professor Hausman*, July 24, 1996. I will respond to Dr. Duncan in greater detail when he develops his claims more fully.

1 **Q. DR. DUNCAN ASSERTS THAT THE SPARE CAPACITY REPRESENTED**
2 **BY A FILL FACTOR LESS THAN 1.0 IS A *CURRENT* COST OF**
3 **PROVIDING SERVICE. (AT 12) DO YOU AGREE?**
4 A. No. I concur in MCI and AT&T Witness Don J. Wood's characterization that such
5 an approach violates principles of cost causation. To accept Dr. Duncan's position
6 is to create a cross-subsidy from current customers who pay for these facilities to
7 future customers who use these facilities. The Hatfield Model sizes the network to
8 provide local, narrowband services. Incumbent LEC investments, such as for
9 broadband services or long distance, intended for future customers should look to
10 future customers and revenues for recovery.
11
12 **Q. LASTLY, DR. DUNCAN CLAIMS THAT THE HATFIELD MODEL**
13 **VIOLATES MATHEMATICAL PROPERTIES REQUIRED OF COST**
14 **MODELS. (AT 21-22 and 27-28) ARE THESE CRITICISMS VALID?**
15 A. No. Dr. Duncan suggests that the Hatfield Model does not satisfy the property of
16 linear homogeneity in input prices. To demonstrate this he provides a table
17 purporting to show that, for a scalar increase in all prices of 10%, Hatfield Model
18 element costs do not rise by the anticipated 10%. Although as a mathematical
19 construct, scaling up all input prices by 10% is a trivial exercise, imposing this test
20 properly on the Hatfield Model is not so simple. From the information provided, it
21 is impossible to know whether the authors successfully tested for linear homogeneity.
22 I will respond to this concern based on results from a verifiably accurate test.
23 Second, Dr. Duncan suggests that the Hatfield Model violates a derivative property.
24 This criticism simply reflects the fact that in an earlier version of the model, structure

costs depended upon cable costs. As noted in the documentation, structure costs are now computed directly, so this "violation" and the related demonstration of "bias" no longer apply.

Q. WHAT IS THE RELATIONSHIP BETWEEN THE EFFICIENT COMPONENT PRICING RULE (ECPR) RATES REJECTED BY THE FCC AND DR. SIBLEY'S M-ECPR RATES ?

A. The authors of the Framework explain that any distinction between the prices depends upon the presence or absence of market alternatives. Market alternatives are defined as sources for unbundled elements excluding the incumbent LEC available to supply the entrant. If all market alternatives are assumed away, then M-ECPR rates are the same as ECPR rates. (Framework V-4)

Q. WHY DO THE AUTHORS OF THE FRAMEWORK BELIEVE THAT M-ECPR RATES WILL GENERALLY DIFFER FROM ECPR RATES?

A. The authors believe that entrants generally have port/switching, local switching and tandem switching available from market alternatives at competitive prices. They assume that port/switching services, signalling and transport can be purchased at competitive prices from third-party vendors. However, they believe there are relatively few market constraints on the incumbent LEC provision of loops. (Framework V-4)

Q. DO YOU BELIEVE THE M-ECPR APPROACH IS CONSISTENT WITH FCC PRINCIPLES?

A. No. In discussing reasonable allocation methods for forward-looking common costs, after endorsing the use of a fixed factor method, the FCC said:

> We conclude that a second reasonable allocation method would allocate only a relatively small share of common costs to critical network elements, such as the local loop and collocation, that are most difficult for entrants to replicate promptly (i.e., bottleneck facilities). Allocation of common costs on this basis ensures that the prices of network elements that are least likely to be subject to competition are not artificially inflated by a large allocation of common costs. On the other hand, certain other allocation methods would not be reasonable. For example, we conclude that an allocation methodology that relies exclusively on allocating common costs in inverse proportion to the sensitivity of demand for various network elements and services may not be used. We conclude that such an allocation could unreasonably limit the extent of entry into local exchange markets by allocating more costs to, and thus raising the prices of, the most critical bottleneck inputs, the demand for which tends to be relatively inelastic. Such an allocation of these costs would undermine the pro-competitive objectives of the 1996 Act. (Paragraph 696, footnotes omitted)

To the extent the competition envisioned by the authors is limited or virtually non-existent, the M-ECPR allocation approximates the ECPR method and violates the Act. To the extent, as the authors believe, market alternatives will be the least viable for local loops, the common cost allocation will be largest for bottleneck facilities, and

thereby violate the Act.

Q. THE FRAMEWORK, CITING AUTHOR SPULBER, ASSERTS "TECHNOLOGICAL CHANGES AND INDUSTRY DEVELOPMENTS SHOW THAT LOCAL EXCHANGES ARE LACKING IN MONOPOLY POWER." (AT II-7) DO YOU AGREE?

A. No. The authors provide no suggestion whether, for which relevant markets, and to what extent they claim that market alternatives exist. If market alternatives exist, their ability to constrain the pricing of unbundled network elements by incumbent LECs is severely limited. As *The Enduring Local Bottleneck* (1994) concluded: Competition is likely to increase for some significant components of local telecommunication service over the next five to ten years under appropriate regulatory and market conditions. However, the level and scope of competitive entry is unlikely to be sufficient to eliminate or even significantly reduce the power of the BOCs. Additional time is required for effective and sustainable local exchange competition to emerge. (Executive Summary at iii)

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes, it does.