

51. *Proposal to the Bank of Greece on the Organization of Primary and Secondary Markets in Greek State Bills, Notes and Bonds* (1993).
52. "Liquidity and Markets," in *The New Palgrave Dictionary of Finance*, New York: 1992.
53. "Compatibility and the Creation of Shared Networks," in *Electronic Services Networks: A Business and Public Policy Challenge*, edited by Margaret Guerin-Calvert and Steven Wildman, Praeger Publishing Inc., New York: 1991.
54. *Oligopoly in Markets for Products Differentiated by their Characteristics*, Ph.D. dissertation, University of California, Berkeley, 1981.

**C. WORKING PAPERS**

55. "Market Structure in Network Industries," mimeo.
56. "Durable Goods Monopoly with Network Externalities with Application to the PC Operating Systems Market," mimeo.
57. "Raising Rivals' Costs in Complementary Goods Markets: LECs Entering into Long Distance and Microsoft Bundling Internet Explorer," Discussion Paper EC-98-03, Stern School of Business, N.Y.U.
58. "Compatibility and Market Structure for Network Goods," Discussion Paper EC-98-02, Stern School of Business, N.Y.U. (with Fredrick Flyer)
59. "The Tragic Inefficiency of M-ECPR," Discussion Paper EC-98-01, Stern School of Business, N.Y.U.
60. "Strategic Commitments and the Principle of Reciprocity in Interconnection Pricing," Discussion Paper no. EC-96-13, Stern School of Business, N.Y.U. (with Giuseppe Lopomo and Glenn Woroch).
61. "Critical Mass and Network Size with Application to the US Fax Market," Discussion Paper no. EC-95-11, Stern School of Business, N.Y.U. (with Charles Himmelberg).
62. "Monopolistic Competition with Two-Part Tariffs," Discussion Paper no. EC-95-10, Stern School of Business, N.Y.U. (with Steve Wildman).
63. "The Incentive of a Multiproduct Monopolist to Provide All Goods," Discussion Paper no. EC-95-09, Stern School of Business, N.Y.U.
64. "Principles of Interconnection: A Response to 'Regulation of Access to Vertically-Integrated Natural Monopolies'," submitted to the New Zealand Ministry of Commerce.
65. "Equilibrium Fee Schedules in a Monopolist Call Market," Discussion Paper no. EC-94-15, Stern School of Business, N.Y.U. (with Jeff Heisler).

- Speaker, Swedish Competition Authority, Stockholm, Sweden, June 3, 1999.
- Panelist, Roundtable on remedies in the Microsoft case, Progress and Freedom Foundation, March 17, 1999.
- Seminar speaker, Federal Communications Commission, Washington DC, January 7, 1999.
- Session organizer and speaker, "Network Industries," ASSA meetings, New York, January 5, 1999.
- Panelist, "The Microsoft Case," ASSA meetings, New York, January 3, 1999.
- Speaker, Law and Economics Seminar, Columbia University, "The Microsoft Case," December 7, 1998.
- Organizing Committee and speaker, First International Conference on Information and Computation Economies, Charleston, NC, October 26, 1998.
- Speaker, Telecommunications Policy Research Conference, Alexandria, Virginia, October 4, 1998.
- Session chairman, Telecommunications Policy Research Conference, Alexandria, Virginia, October 4, 1998.
- Speaker, Conference on Real Options in Telecommunications, Columbia University, October 2, 1998.
- Keynote speaker, EARIE conference, Copenhagen, August 28, 1998.
- Speaker, Summer program, Social Science Research Council, Airlee House, VA, August 8, 1998.
- Speaker, Conference on "Competition, Convergence and the Microsoft Monopoly: The Future of the Digital Marketplace," Progress and Freedom Foundation Conference, Washington DC, February 4, 1998.
- Speaker and session organizer, American Economic Association Winter Meetings, Chicago, January 4-6, 1998.
- Speaker, Telecommunications Policy Conference, organized by the Japanese Ministry of Telecommunications and the Japan-US Center of Stern, Tokyo, Japan, December 4, 1997.
- Speaker, Information Systems Seminar, Stern School of Business, November 6, 1997.
- Speaker, Conference on "Pricing and Costing a Competitive Local Telecommunications Network," organized by the American Enterprise Institute, November 4, 1997.
- Speaker, Industrial Organization Seminar, Stern School of Business, September 30, 1997.
- Speaker and session organizer, Telecommunications Policy Research Conference, Alexandria, Virginia, September 27-29, 1997.
- Speaker, Voice-on-the-Net Conference, Boston, September 25, 1997.
- Speaker, Conference on Internet Telephony, organized by the National Telecommunications Infrastructure Initiative, Washington DC, September 4, 1997.
- Speaker, Federal Communications Commission, Washington DC, September 3, 1997.
- Seminar speaker, Stanford University, August 7, 1997.
- Speaker, Workshop on Synthetic Economies, conference organized by the Institute for Defense Analyses, Washington DC, July 23-24, 1997.
- Speaker, Western Economic Association, Seattle, July 10, 1997.
- Seminar speaker, University of California, Irvine, May 5, 1997.
- Speaker, Institutional Investors, Athens, Greece, June 19, 1997.
- Seminar speaker, Stanford University, April 9, 1997.
- Speaker, Voice-on-the-Net Conference, San Francisco, April 1, 1997.
- Seminar speaker, Stanford University, March 3, 1997.
- Seminar speaker, Stanford University, February 25, 1997.
- Speaker, University of California, Berkeley, February 6, 1997.

## **E. PROFESSIONAL ACTIVITIES**

- Editor, the *International Journal of Industrial Organization*.
- Editor, *European Academy for Standardization Yearbook*.
- Editor, *Netnomics*.
- Advisory Board, *Antitrust and Regulation Abstracts*, Social Science Research Network.
- Advisory Board, *Industrial Organization and Regulation Abstracts*, Social Science Research Network.
- Editor of a special issue of the *International Journal of Industrial Organization* on Network Economics.
- Chairman, *Roundtable for Electronic Commerce and Telecommunications*, an industry-sponsored interdisciplinary research and educational program at New York University's Stern School of Business.
- Referee for *The American Economic Review*, *Annales d'Economie et de Statistique*, *Econometrica*, *The Economic Journal*, *Economic Theory*, *Economica*, *The European Economic Review*, *The European Journal of Political Economy*, *International Economic Review*, *International Journal of Industrial Organization*, *The Journal of Economic Theory*, *The Journal of Economics*, *Management and Strategy*, *The Journal of Finance*, *The Journal of Industrial Economics*, *The Journal of International Economics*, *Journal of Organizational Computing*, *Journal of Political Economy*, *Journal of Regional Science*, *Kyklos*, *Marketing Science*, *Mathematical Social Sciences*, *Quarterly Journal of Economics*, *Quarterly Review of Economics and Finance*, *The Rand Journal of Economics*, *The Review of Economic Studies*, *Scandinavian Actuarial Journal*, *Regional Science and Urban Economics*, *Zeitschrift fuer Nationaloekonomie*, as well as for the National Science Foundation.
- Has made numerous presentations of current research at leading Universities and at conferences, including the Winter and Summer Meetings of the Econometric Society and the American Economic Association, the Annual Congress of the European Economic Association, the European Association for Research in Industrial Economics, the Telecommunications Policy Research Conference, and many others. Has organized the Industrial Organization and the Economic Theory Workshops at Columbia University 1982-1988. In recent years, he organizes the Industrial Organization Workshop at the Stern School of Business, N.Y.U.
- Has created a server on the Internet on *The Economics of Networks*. This server contains information on networks, working papers, and a very extensive interactive bibliography on this subject. The *Economist* magazine has rated this web site among the first 5 economics site in the world. Since its creation in March 1995, it has been visited over 1,200,000 times.
- Outside reviewer in numerous promotion and tenure cases.

## E. PROFESSIONAL ACTIVITIES

- Editor, the *International Journal of Industrial Organization*.
- Editor, *European Academy for Standardization Yearbook*.
- Editor, *Netnomics*.
- Advisory Board, *Antitrust and Regulation Abstracts*, Social Science Research Network.
- Advisory Board, *Industrial Organization and Regulation Abstracts*, Social Science Research Network.
- Editor of a special issue of the *International Journal of Industrial Organization* on Network Economics.
- Chairman, *Roundtable for Electronic Commerce and Telecommunications*, an industry-sponsored interdisciplinary research and educational program at New York University's Stern School of Business.
- Referee for *The American Economic Review*, *Annales d'Economie et de Statistique*, *Econometrica*, *The Economic Journal*, *Economic Theory*, *Economica*, *The European Economic Review*, *The European Journal of Political Economy*, *International Economic Review*, *International Journal of Industrial Organization*, *The Journal of Economic Theory*, *The Journal of Economics*, *Management and Strategy*, *The Journal of Finance*, *The Journal of Industrial Economics*, *The Journal of International Economics*, *Journal of Organizational Computing*, *Journal of Political Economy*, *Journal of Regional Science*, *Kyklos*, *Marketing Science*, *Mathematical Social Sciences*, *Quarterly Journal of Economics*, *Quarterly Review of Economics and Finance*, *The Rand Journal of Economics*, *The Review of Economic Studies*, *Scandinavian Actuarial Journal*, *Regional Science and Urban Economics*, *Zeitschrift fuer Nationaloekonomie*, as well as for the National Science Foundation.
- Has made numerous presentations of current research at leading Universities and at conferences, including the Winter and Summer Meetings of the Econometric Society and the American Economic Association, the Annual Congress of the European Economic Association, the European Association for Research in Industrial Economics, the Telecommunications Policy Research Conference, and many others. Has organized the Industrial Organization and the Economic Theory Workshops at Columbia University 1982-1988. In recent years, he organizes the Industrial Organization Workshop at the Stern School of Business, N.Y.U.
- Has created a server on the Internet on *The Economics of Networks*. This server contains information on networks, working papers, and a very extensive interactive bibliography on this subject. The *Economist* magazine has rated this web site among the first 5 economics site in the world. Since its creation in March 1995, it has been visited over 1,200,000 times.
- Outside reviewer in numerous promotion and tenure cases.

- Speaker, Swedish Competition Authority, Stockholm, Sweden, June 3, 1999.
- Panelist, Roundtable on remedies in the Microsoft case, Progress and Freedom Foundation, March 17, 1999.
- Seminar speaker, Federal Communications Commission, Washington DC, January 7, 1999.
- Session organizer and speaker, "Network Industries," ASSA meetings, New York, January 5, 1999.
- Panelist, "The Microsoft Case," ASSA meetings, New York, January 3, 1999.
- Speaker, Law and Economics Seminar, Columbia University, "The Microsoft Case," December 7, 1998.
- Organizing Committee and speaker, First International Conference on Information and Computation Economies, Charleston, NC, October 26, 1998.
- Speaker, Telecommunications Policy Research Conference, Alexandria, Virginia, October 4, 1998.
- Session chairman, Telecommunications Policy Research Conference, Alexandria, Virginia, October 4, 1998.
- Speaker, Conference on Real Options in Telecommunications, Columbia University, October 2, 1998.
- Keynote speaker, EARIE conference, Copenhagen, August 28, 1998.
- Speaker, Summer program, Social Science Research Council, Airlee House, VA, August 8, 1998.
- Speaker, Conference on "Competition, Convergence and the Microsoft Monopoly: The Future of the Digital Marketplace," Progress and Freedom Foundation Conference, Washington DC, February 4, 1998.
- Speaker and session organizer, American Economic Association Winter Meetings, Chicago, January 4-6, 1998.
- Speaker, Telecommunications Policy Conference, organized by the Japanese Ministry of Telecommunications and the Japan-US Center of Stern, Tokyo, Japan, December 4, 1997.
- Speaker, Information Systems Seminar, Stern School of Business, November 6, 1997.
- Speaker, Conference on "Pricing and Costing a Competitive Local Telecommunications Network," organized by the American Enterprise Institute, November 4, 1997.
- Speaker, Industrial Organization Seminar, Stern School of Business, September 30, 1997.
- Speaker and session organizer, Telecommunications Policy Research Conference, Alexandria, Virginia, September 27-29, 1997.
- Speaker, Voice-on-the-Net Conference, Boston, September 25, 1997.
- Speaker, Conference on Internet Telephony, organized by the National Telecommunications Infrastructure Initiative, Washington DC, September 4, 1997.
- Speaker, Federal Communications Commission, Washington DC, September 3, 1997.
- Seminar speaker, Stanford University, August 7, 1997.
- Speaker, Workshop on Synthetic Economies, conference organized by the Institute for Defense Analyses, Washington DC, July 23-24, 1997.
- Speaker, Western Economic Association, Seattle, July 10, 1997.
- Seminar speaker, University of California, Irvine, May 5, 1997.
- Speaker, Institutional Investors, Athens, Greece, June 19, 1997.
- Seminar speaker, Stanford University, April 9, 1997.
- Speaker, Voice-on-the-Net Conference, San Francisco, April 1, 1997.
- Seminar speaker, Stanford University, March 3, 1997.
- Seminar speaker, Stanford University, February 25, 1997.
- Speaker, University of California, Berkeley, February 6, 1997.

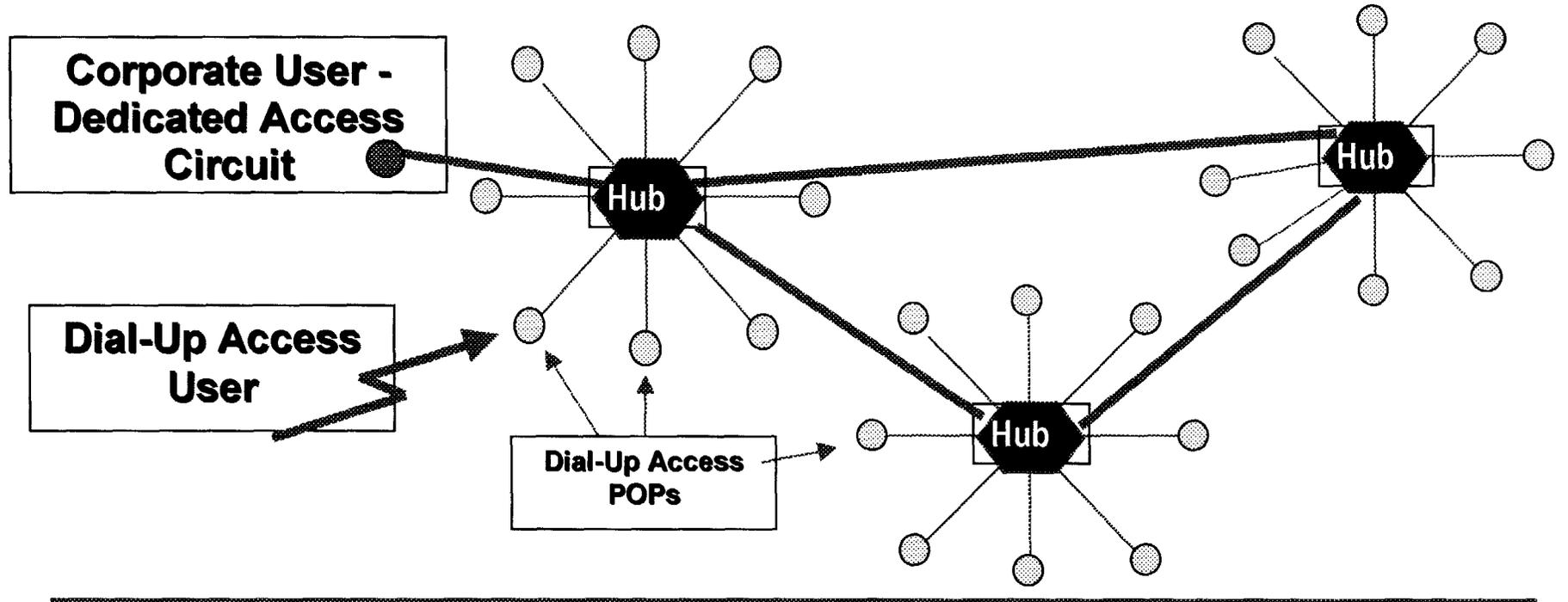
51. *Proposal to the Bank of Greece on the Organization of Primary and Secondary Markets in Greek State Bills, Notes and Bonds* (1993).
52. "Liquidity and Markets," in *The New Palgrave Dictionary of Finance*, New York: 1992.
53. "Compatibility and the Creation of Shared Networks," in *Electronic Services Networks: A Business and Public Policy Challenge*, edited by Margaret Guerin-Calvert and Steven Wildman, Praeger Publishing Inc., New York: 1991.
54. *Oligopoly in Markets for Products Differentiated by their Characteristics*, Ph.D. dissertation, University of California, Berkeley, 1981.

**C. WORKING PAPERS**

55. "Market Structure in Network Industries," mimeo.
56. "Durable Goods Monopoly with Network Externalities with Application to the PC Operating Systems Market," mimeo.
57. "Raising Rivals' Costs in Complementary Goods Markets: LECs Entering into Long Distance and Microsoft Bundling Internet Explorer," Discussion Paper EC-98-03, Stern School of Business, N.Y.U.
58. "Compatibility and Market Structure for Network Goods," Discussion Paper EC-98-02, Stern School of Business, N.Y.U. (with Fredrick Flyer)
59. "The Tragic Inefficiency of M-ECPR," Discussion Paper EC-98-01, Stern School of Business, N.Y.U.
60. "Strategic Commitments and the Principle of Reciprocity in Interconnection Pricing," Discussion Paper no. EC-96-13, Stern School of Business, N.Y.U. (with Giuseppe Lopomo and Glenn Woroch).
61. "Critical Mass and Network Size with Application to the US Fax Market," Discussion Paper no. EC-95-11, Stern School of Business, N.Y.U. (with Charles Himmelberg).
62. "Monopolistic Competition with Two-Part Tariffs," Discussion Paper no. EC-95-10, Stern School of Business, N.Y.U. (with Steve Wildman).
63. "The Incentive of a Multiproduct Monopolist to Provide All Goods," Discussion Paper no. EC-95-09, Stern School of Business, N.Y.U.
64. "Principles of Interconnection: A Response to 'Regulation of Access to Vertically-Integrated Natural Monopolies'," submitted to the New Zealand Ministry of Commerce.
65. "Equilibrium Fee Schedules in a Monopolist Call Market," Discussion Paper no. EC-94-15, Stern School of Business, N.Y.U. (with Jeff Heisler).

- Seminar speaker at the University of California, Berkeley, March 13, 1995.
- Seminar speaker at the University of California, Los Angeles, March 10, 1995.
- Speaker and member of the organizing committee at “Strategic Alliances and Interconnection,” Symposium organized by the International Telecommunications Society, University of Colorado at Boulder, January 9, 1995.

**Figure 1: Internet Backbone Network**





RECEIVED

MAR 20 2000

Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, DC 20554

FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF THE SECRETARY

In the Matter of )  
)  
Joint Application of MCI WorldCom, Inc. )  
And Sprint Corporation for Consent to )  
Transfer Control )

CC Docket No. 99-333

**DECLARATION OF THOMAS BECHLY**

March 20, 2000

## **DECLARATION OF THOMAS BECHLY**

1. My name is Thomas Bechly. I am employed by MCI WorldCom, Inc. (“MCI WorldCom”) as the Manager of Architecture for the Metropolitan Area Exchanges (MAEs) operated by MCI WorldCom. I am fully familiar with the facts and circumstances of the operation of the MAEs. I submit this declaration in connection with the application of MCI WorldCom and Sprint Corporation (“Sprint”) for approval of their proposed merger.

2. To understand the operation of the MAEs requires an understanding of network access points (NAPs) and how Internet Service Providers (ISPs) reach the Internet. A NAP is a facility used by multiple ISPs as a public point for exchanging Internet traffic. ISPs may also exchange traffic using direct connection points, established by bilateral or multilateral agreement between ISPs. Establishing a centralized location where multiple providers can exchange traffic offers many advantages, including shorter lead times on provisioning capacity between ISPs, reduced costs, and fewer circuits, ports, interconnection protocols, and peering locations to manage.

3. A NAP provides ISPs with (1) collocation space, (2) connectivity to the NAP, and (3) a switching platform used for interconnection. ISPs lease rack space and cross connects from the NAP owner to collocate and link their equipment and facilities to other ISPs. A NAP itself does not provide peering, or route traffic, but rather provides access to the medium over which peering ISPs exchange traffic.

4. At present, there are approximately 40 NAPs in the United States, 41 in Europe, and 27 in Asia and the Pacific. They are owned and operated by a wide variety of companies, including Pimmit Run Research, Inc. (Neutral NAP, McLean, VA), Metromedia Fiber Networks

(Paix.Net NAP, Palo Alto, CA), One Call Communication (IndyX, Indianapolis, IN), Ameritech (Chicago NAP, Chicago, IL), Intrex Inc. (RTP-NAP, Research/Triangle Park, NC), and Colorado Internet Cooperative Association/Rocky Mountain Internet (Mountain Area eXchange MAX NAP, Denver, CO), to name a few.

5. MCI WorldCom operates a total of seven NAPs, five in the United States, and two in Europe. The three largest MCI WorldCom NAPs are in Washington, D.C. (MAE East), San Jose, California (MAE West), and Dallas, Texas (MAE Central). MCI WorldCom also operates four smaller MAEs, in Los Angeles, Houston, Paris, France, and Frankfurt, Germany. "MAE", which originally stood for "Metropolitan Area Ethernet" is simply a name given to several of the original NAPs which were created by award from the National Science Foundation in 1993. The MAEs were owned and operated by MFS Datanet, Inc., a competitive local exchange carrier (CLEC) which was acquired by the former WorldCom prior to its merger with MCI, and are still operated under the MFS name. Notably, UUNET, which is an Internet Service Provider (ISP) and a wholly owned affiliate of MCI WorldCom, does not have any management or control over the operation of the MAEs.

6. In order to participate in the MAE, an ISP must have a peering or transit relationship with one or more ISPs connected to the MAE. Peering refers to the exchange of network traffic based on a contractual agreement and technical cooperation between ISPs within the MAE, but not including the MAE itself. Inclusion in the MAE is on a first-come, first-serve basis depending upon space available and connectivity requirements. The MAEs provide a public list of customers to prospective ISP customers who are responsible for arranging or negotiating peering agreements with other ISPs in order to transfer traffic.

7. The MAEs function only as an exchange, and do not route data. Routers that connect to the MAEs are owned and operated by the individual ISP. The MAEs do not provide IP addresses, transit with any other MAE customer, guarantee membership of a particular ISP, or guarantee whether an ISP will peer. The MAEs and other NAPs are not connected to one another via dedicated links. Thus, if an ISP needs interconnection to a MAE or a NAP, it must order a circuit from its own network to the MAE or NAP.

8. The fiber that connects directly to the MAE is owned by MCI WorldCom, and an ISP can order any circuit speed it chooses that is available to connect to the MAE. Currently, the MAEs' switching equipment supports transmission speeds of DS3, OC3, and OC12. An ISP connects to the MCI WorldCom fiber at a location maintained by MCI WorldCom known as a point of presence (POP). An ISP is responsible for obtaining its own fiber link to the POP. It is the ISP's choice as to which vendor it chooses to use to provide this transport to the MCI WorldCom POP, but can include incumbent local exchange carriers (ILECs), CLECs, interexchange carriers (IXCs), utility companies, and any other entity capable of providing transport.

9. The MAEs originally were engineered with shared architectures: Fiber Distributed Data Interface (FDDI), a fiber optic local area network (LAN) operating at 100 million bits per second, and Ethernet, a copper/coax LAN operating at 10 million bits per second. As traffic over the Internet continued to increase substantially in the mid-1990s, these architectures began to experience congestion and blocking. It became apparent that the FDDI infrastructure could not be readily configured to meet increasing traffic demands. The addition of extra ports on the FDDI architecture made it increasingly unstable, which caused MCI WorldCom to have to turn away

new customers while searching for an alternative to FDDI.

10. As a result of the FDDI capacity concerns, MCI WorldCom evaluated various new technologies that could supplement or replace FDDI. It was important that this technology be acceptable to customers, and not have the growth and scale limitations found in the FDDI architecture. MCI WorldCom selected Asynchronous Transfer Mode (ATM) technology to replace FDDI. Once MCI WorldCom committed to this new architecture, the company determined that no new FDDI customers should be added, but allowed ISPs that utilized the FDDI architecture to continue to do so until they choose to upgrade to ATM.

11. ATM is a cell-based switching technology. Overall, ATM switches are more scalable, more secure, and more efficient than the earlier generation shared infrastructure. ATM has numerous advantages over FDDI, which include:

- Decreased processing time and consumption of bandwidth.
- Cells have a single header and are a uniform 53 bytes in size.
- Eliminates the need for start and end delimiters on each cell.
- No requirement to collocate a router at the NAP.
- Greater number of ISPs aggregated over a smaller number of ports.
- Reduces the amount of hardware that must be deployed, provisioned, and managed to accommodate any given amount of traffic.
- Permanent Virtual Connections (PVCs) between providers can be completed in a matter of minutes, provided both networks have ample capacity provisioned to these exchanges (as will be discussed more fully below).
- Enables an ISP to connect on a point-to-point basis to a peer without the risk of carrying traffic from other ISPs at the NAP with whom the ISP does not peer.

12. After extensive engineering analysis and beta testing, the first ATM switches

installed in the MAEs began accepting traffic commercially in February, 1999. As customer demand at MAE East began to exceed available capacity, MCI WorldCom initiated the process of installing additional ATM switches in December, 1999. As a result of this upgrade, MAE East is presently comprised of 6 ATM switches. MAE West, which has three ATM switches, will have three additional ATM switches on line by mid-April. The latest upgrades are designed to facilitate public peering and reduce traffic congestion at those locations by increasing the number of ports and the bandwidth capacity available to ISPs. The upgrade to ATM switching has significantly increased the capacity available at the three MAEs:

MAE East had 7.6 Gbps of FDDI capacity in 1997. This was upgraded to 11.2 Gbps in 1998, with ATM technology, and further upgraded to 19.9 Gbps of ATM capacity in January, 2000. Of that 19.9 Gbps capacity, 11.4 Gbps have been sold to date.

MAE West had 4.3 Gbps of FDDI capacity in 1997. This was subsequently upgraded to 11.2 Gbps of ATM capacity in 1999. MAE West is presently undergoing an upgrade to 19.9 Gbps of ATM capacity, of which 11.8 Gbps has been sold to date.

MAE Central was upgraded to 7.5 Gbps of ATM capacity in 1999. About 2.6 Gbps of that capacity is currently used to meet existing customer demand.

13. The addition of three new ATM switches at MAE East, the increased demand for capacity from existing customers, and the addition of new customers, have temporarily depleted the surplus of electrical power into the MAE East facilities that would otherwise be allocated to power transmissions for new or existing customers. It is expected that this temporary condition will be mitigated in late April, as MAE East is configured with additional power sufficient to meet customer demand. However, the power issue has no effect on the efficiency and stability of MAE East for existing customers, or on any other MAE.

14. I understand that some comments have raised questions about latency and packet

loss at the MAEs. Latency and packet loss are statistics that ISPs monitor to evaluate the efficiency of traffic from end to end over the Internet. Latency refers to the amount of time required to transport data through a network. Packet loss refers to the number of packets (cells) that fail to reach the intended recipient. Generally, latency and packet loss cannot be measured at a NAP, given that it is only meaningful to take a measurement from end to end, that is, between the sender of the data and the recipient. Given that the ends are controlled by ISPs, there is no feasible way to measure latency at a NAP.

15. The MAE ATMs are engineered so that there is a balance between ports and trunks, to minimize the potential for packet loss. The rate of packet loss depends upon how the ISP configures its permanent virtual circuits (PVCs) within the ATM, and manages these relationships with its peering partners. It is the ISPs which can and do monitor packet loss, and have the ability to control it. For example, assume that an ISP purchases an OC3 access port with 155Mbps capability. That ISP will peer with like ISPs, and will establish an agreed-upon, guaranteed cell rate that each ISP will accept from the other. In the event that several ISPs send a large amount of traffic at the same time, it will “burst” above the OC3 capacity. Any packets sent that exceed the guaranteed cell rate are marked “discard eligible,” but are not necessarily dropped. Packets are only dropped when the ISP’s OC3 has reached full capacity. To control this, the ISP can either purchase more bandwidth, or re-balance their PVCs with their peering partners to allocate more bandwidth to partners from whom they receive more traffic than the agreed-upon, guaranteed cell rate. However, it is for the ISP to decide how to remedy any packet loss problems, and how it configures its PVCs.

I declare under the penalty of perjury that the foregoing is true and correct.

Executed March 16, 2000

  
\_\_\_\_\_  
Thomas Bechly





**MCI Telecommunications  
Corporation**

1801 Pennsylvania Avenue, NW  
Washington, DC 20006  
202 887 2551  
FAX 202 887 2676

**Mary L. Brown**  
Senior Policy Counsel  
Federal Law and Public Policy

November 5, 1999

**Mr. Lawrence E. Strickling**  
Chief, Common Carrier Bureau  
Federal Communications Commission  
445 Twelfth Street, SW  
Washington, DC 20554

Dear Larry:

MCI WorldCom is filing two responses to your October 4, 1999 letter which requested specific data on our activities in the residential market. One version contains confidential information for which we are requesting confidential treatment pursuant to the Commission's Rules. The attached version of the letter from Jonathan B. Sallet contains no confidential information and MCI WorldCom does not object to it being made available to the public if the Commission chooses to disclose it.

Please let me know if you have any additional questions.

Sincerely,

A handwritten signature in cursive script that reads "Mary L. Brown". The signature is written in black ink and is positioned above the typed name.

**Mary L. Brown**

Attachment



**MCI Communications  
Corporation**

1801 Pennsylvania Avenue, NW  
Washington, DC 20006  
202 887 3351  
FAX 202 887 2446

**Jonathan B. Sallet**  
Chief Policy Counsel

November 5, 1999

Mr. Lawrence E. Strickling  
Chief, Common Carrier Bureau  
Federal Communications Commission  
445 Twelfth Street, SW  
Washington, DC 20554

Dear Larry:

Your October 4, 1999 letter requests that MCI WorldCom, Inc. (MCI WorldCom) provide follow-up information on the company's activities in the residential market in the year since we closed the merger of WorldCom, Inc. and MCI Communications, Inc. During the past year, MCI WorldCom has actively demonstrated its commitment to offering residential customers local and long distance services. This is evident by the increase in both its local and long distance mass market customer-base. Most significantly, MCI WorldCom has entered the local market in New York in the hope that the regulatory climate in New York will eventually permit full-scale commercial entry in the mass market segment. The recent merger we announced with Sprint Corporation (Sprint) will, when consummated, permit us to accelerate our entry into local voice and data services. In sum, MCI WorldCom is committed to serving residential customers and is taking the steps necessary to serve all of their needs by competing vigorously against the Bells and cable providers.

Residential long distance services

MCI WorldCom has continued to market aggressively to residential customers for long distance services. Our campaigns to attract new residential customers have resulted in a significant increase in the number of residential long distance customer we serve, relative to 1998. We attribute that success to several factors. MCI WorldCom has endeavored to offer the best combination of rate plans and promotions in the industry. Our partner programs that give customers airline miles on their frequent flyer accounts have proven a popular program to augment the low rates we offer residential customers. In addition, in August of 1999 we significantly expanded the availability of 5 cents a minute rates, moving from our popular "MCI 5 Cents Sundays" to "MCI 5 Cents Everyday."<sup>1</sup>

"MCI 5 Cents Everyday" has had an enormous impact on long distance pricing. In effect, this single product has changed the price point for residential long distance service. While claims in the press of interexchange industry "price wars" are overblown and unsupported, it is accurate to say that competition has worked in the long distance industry to bring residential rates to a new, all time low. The Commission can take much of the credit for making that possible by its

---

<sup>1</sup> This package offers consumers an evening-night and all day Sunday rate of \$.05/minute.

“MCI 5 Cents Everyday” has had an enormous impact on long distance pricing. In effect, this single product has changed the price point for residential long distance service. While claims in the press of interexchange industry “price wars” are overblown and unsupported, it is accurate to say that competition has worked in the long distance industry to bring residential rates to a new, all time low. The Commission can take much of the credit for making that possible by its decisions in recent years to lower per-minute interstate access rates.

#### Residential local services

MCI WorldCom has made substantial efforts to augment its participation in local exchange markets. At the time the merger closed, there was virtually no competition against incumbent local exchange carriers for local exchange services. The few carriers that had experimented with resale as a vehicle for offering local service had abandoned the effort due to problems with incumbent operational support systems.<sup>2</sup> Due to regulatory uncertainty,<sup>3</sup> with the exception of New York the industry has continued to reflect very little active progress in offering competitive local service to residential customers. Despite the uncertainty, over the past year the New York Public Service Commission made substantial commitments to opening the New York market, and due to regulatory decisions that made market entry conditions in New York viable, MCI WorldCom made the business commitment to pursue the New York local residential market to the extent possible. We anticipate with the Commission’s issuance of the Order based on the Supreme Court’s remand, other states will follow New York’s example in opening the local market.<sup>4</sup>

---

<sup>2</sup> MCI WorldCom announced in 1998 that it would no longer pursue the use of resale of local exchange carrier local services as an entry strategy because the economics of resale do not support viable entry. At the same time, MCI WorldCom is ramping up its use of UNE-platform as an entry vehicle where regulatory conditions permit.

<sup>3</sup> As you know, the Eighth Circuit nullified key elements of the Commission’s Local Competition Order, including mandated access to the combination of unbundled network elements. Although this was eventually overturned by the United States Supreme Court, CLECs have been hampered in their efforts to enter most local markets by the uncertainty of the Commission’s action in the UNE remand proceeding. See, Second Further Notice of Proposed Rulemaking, In the Matter of Implementation of the Local Competition Provisions in the Telecommunications Act of 1996, CC Docket No. 96-98, released April 16, 1999 (Final Order adopted September 15, 1999 but has not been released.)

<sup>4</sup> The success of the third party testing of OSS in New York in uncovering and resolving flaws in the system seems to have spurred testing in the other Bell regions. It remains to be seen if these tests will be designed and implemented as effectively as in New York.

Today, while we have only a tiny fraction of residential customers relative to Bell Atlantic, MCI WorldCom is Bell Atlantic's largest residential local competitor in New York State. Beginning in December 1998, MCI WorldCom began offering residential service through unbundled network element platform (UNE-platform). This offering became available statewide only two months later, in February 1999. Just last month, MCI WorldCom initiated marketing efforts in New York to supplement the telemarketing efforts that have been used to date. At present, over 160,000 local customers throughout New York State have been provisioned to MCI WorldCom. For those New York local customers, the savings have been significant -- up to 18 percent relative to Bell Atlantic rates. Our basic rate plan allows consumers to save 5 percent on local line fees, usage and features alone.

While we remain concerned that Bell Atlantic has not finished the job required of it pursuant to section 271 of the Telecommunications Act, we are hopeful that the resolutions reached in New York thus far, and the regulators' continuing attention to remaining issues, will allow us to participate in the New York market for local residential services at commercial volumes sometime in the near future.

MCI WorldCom is actively involved in various state proceedings around the country with the intention of participating in additional states during 2000 as regulatory conditions permit. As in New York, we believe our local entry is contingent on the availability of UNE- platform, including a technologically sound and third party tested OSS, and prices that make it financially viable to enter the market. If prices and OSS permit, UNE-platform allows MCI WorldCom to enter the local residential market with greater speed and ubiquity. It also allows us to offer more innovative products and savings to our customers than resale.

But in addition to merely entering the local markets, MCI WorldCom intends to be a aggressive competitor and provider of advanced services. Although we sold our pre-merger MCI Internet business to Cable & Wireless at the time of the merger, MCI WorldCom has since reinitiated an Internet access offering to qualified customers, and does business as an Internet Service Provider.<sup>5</sup> While we are disappointed that the Commission has elected to pursue certain unbundling policies that will limit our ability to take advantage of incumbent local exchange carrier provided x.DSL offerings, MCI WorldCom continues to seek means to offer high speed advanced services to residential customers. During 1999, we announced and completed our acquisition of CAI Wireless, Inc., one of the largest MMDS providers. Other MMDS transactions remain pending. Our recent announcement of the merger of MCI WorldCom and Sprint reflects our continued commitment to offering broadband residential services by enabling us to combine the MMDS properties that both carriers have to create a wireless broadband footprint in most areas of the country. The Sprint merger will allow us to combine the MMDS assets of MCI WorldCom and Sprint, with the prospect of offering a national wireless broadband

---

<sup>5</sup> Our current offerings are fully consistent with the terms of sale to Cable & Wireless, as approved by the Commission last year.

product to residential customers.

In addition, MCI WorldCom intends to eventually support residential and small business customers through its own network facilities. MCI WorldCom's extensive investment demonstrates its intention to build a large residential local service customer-base, as this is the only way for the company to recoup its development costs.<sup>6</sup> But this will take a significant amount of time and resources, particularly for mass markets.

#### Service "packages" for residential customers

A strong local presence is critical to MCI WorldCom's success in maintaining a residential market base. Many residential customers prefer telecommunications purchasing arrangements that allow them to deal with one provider. MCI WorldCom believes that our ability to offer packages of services to customers will be an important part, although not an exclusive means, of offering telecommunications services to residential customers.

The nature of the service packages to be offered to residential customers will evolve over time, as we learn more about these offerings and determine what customers want. In New York State, MCI WorldCom offers a package of local and long distance services that allow consumers to realize greater savings when they obtain local and long distance service from us. "MCI Complete Advantage" and "MCI Advantage 100",<sup>7</sup> offer local customers an additional 20 percent off their long distance rate, as well as other discounts on features.<sup>8</sup>

With respect to wireless offerings, at the time of the merger MCI WorldCom participated in the wireless market as a reseller of two-way offerings. MCI WorldCom has grown its resale base. In 1998, MCI WorldCom had 400,000 wireless resale subscribers. The current number is greater and continues to increase.

Our participation in the wireless market is in the process of significant change. During 1999, we completed a merger with SkyTel, Inc. SkyTel is one of the country's premier paging providers, offering an array of two-way and advanced paging products. In addition, MCI WorldCom has announced its merger with Sprint. Sprint has constructed a nationwide, state-of-the-art PCS network to support its two-way wireless services business. Due to the difficulties in

---

<sup>6</sup> See, Joint Declaration of John G. Donoghue and Ronald McMurtrie on Behalf of MCI WorldCom, p 3, footnote 1, filed in CC Docket No. 99-295.

<sup>7</sup> Customer who chose MCI WorldCom for local can get "MCI Everyday Plus" featuring day rates of \$.07/minute as well as the \$.05/minute evening-night rate for their long distance service .

<sup>8</sup> The additional discounts can save customers up to \$60 a year.

MCI WorldCom's substantial growth in long distance, its commitment to pursuing local competition through UNE-platform in New York and elsewhere, and its acquisition of MMDS properties, SkyTel, as well as its pending application with Sprint, add up to the following -- MCI WorldCom has demonstrated its firm commitment to serving residential customers.

Please let me know if you have any additional questions.

Sincerely,

*Jonathan B. Sallet*  
(J.B.S.)  
Jonathan B. Sallet

cc: Michelle Carey  
Audrey Wright