

Date: October 6, 2012

To: History Associates
300 North Stonecrest Ave.
Rockville, Md 20850
Atten: Anita Weber

From: Roger Salaman, previous Chief of Boulder Policy Support Division
Email: r.salaman@comcast.net
Phone: 303-499-7576
Address: 7222 Spring Drive
Boulder, Colorado 80303

Subject: Clay T. Whitehead collection

Anita Weber,

The following is a brief summary of the documentation I am transferring from my personal files after an October 2, 2012 telephone request of Margaret Whitehead, for the purpose of presentation to the Library of Congress and for other scholarly research in comemoration of the work of the Office of Telecommunications Policy, and particularly Clay T. Whitehead. It is all contained in one box. This box does not contain any classified documents.

I was chief of the Boulder Policy Support Division (BPSD) of the Office of Telecommunications of the U.S. Department of Commerce. This division was established in August 1971 with the responsibility to provide the Office of Telecommunication Policy in the Executive Office of the President with research and analysis relating to their policy development. BPSD provided this assistance until it's termination in 1986.

History of OTP Actions

Possibly the most complete summary documentation of the 101 OTP's policy actions from its origin in January 1971 to January 1976 is contained in the Blue Volume labeled "HISTORY OF OTP ACTIONS (Eger et al Visit) February 11, 1976 " which BPSD collated. From 1971 to 1974, Tom Whitehead issued the policies, and the docmentation from September of 1974 to January 1976 were issued by John Egar as Acting Director of OTP.

Commerce OT Policy Support Activities

The three White Volumes labeled "Summary of Policy Support Division Activities, Volume I though III, April 7, 1972" are complete communications with the Boulder and Washington Policy Support Divisions from 1971 through April 1972. They are organized by subject area with blue dividers and detail activities, personnel and funding and contain letters and press releases

from OTP concerning this research. The first part of Volume I lists the material contained in the three volumes and detail the beginnings of the OT and OTP relationship.

The policy areas include in these volumes are:

- Satellite Communications
- Mobile Communications
- Spectrum Policy
- Broadband Services
- Warning System
- Technology/Systems Assessment
- International Communications
- Common and Specialized Carriers
- Information Services

A separate paper "Boulder Policy Support Division Research 1971-1976" contains a comprehensive list of BPSD reports and papers during that period.

OTP Activities 1975 – 1976

A good summary of issues that OTP evaluated during its existence is contained in the report "Activities and Programs 1975 - 1976"

There were hundreds of formal and informal reports and papers prepared by the BPSD staff in response to OTP requirements. When the Boulder Policy Support Division was closed in 1986, the BPSD reports and material were sent to the Office of Telecommunication in Washington D.C. Several reports and papers that I retained are included in this submission.

U.S Department of Commerce Support for The Office of Telecommunications Policy

Roger Salaman, October 6, 2012

The Office of Telecommunication Policy Established

The "President's Task Force on Communications Policy – Final Report" by Eugene Victor Rostow in 1968 stated a strong case for a high-level evaluation of telecommunications policy. (See Appendix A). The recommendations in this report led to considerations to establish the Office of Telecommunications Policy (OTP) in the Executive Office of the President.

On February 9, 1970, President Nixon transmitted Reorganization Plan No. 1 of 1970 to the Senate and the House of Representatives. This plan, as reported in Title 5, Appendix, pages 197 through 199, establishes the Office of Telecommunications Policy in the Executive Office of the President. It transfers the assigning of frequencies to radio stations belonging to and operated by the United States to OTP. The Plan also intends to abolish the office of the Director of Telecommunications Management in the Office of Emergency Preparedness and transfer its functions to OTP. The intent is also for OTP to be assisted in its research and analysis responsibilities by agencies and departments of the Executive Branch including another new office, located in the Department of Commerce. OTP was effective April 20, 1970.

The Commerce Office of Telecommunications Established

Thus, the Assistant Secretary of Commerce for Science and Technology in 1970 established an Office of Telecommunications (OT). John Richardson was appointed director of the Commerce Office of Telecommunication, and Robert Lowe in that Office worked on the OT-OTP coordination. (See Appendix B for early years funding of OT.)

In September, 1970, Roger Salaman returned from Europe after presenting a paper in Norway on radio forecasting at the Scientific Conference on Antarctic Research. He was appointed to participate in the Commerce Science Fellowship program with assignment to the Commerce Office of Telecommunications. Robert Lowe then asked Roger to assist in developing the Department of Commerce support to OTP. Roger and Bob Lowe discussed with management consultant Peter Drucker how to manage an interdisciplinary policy research group.

From September 1970 to July 1971, Bob Lowe, Walt Hinchman, and Roger Salaman worked on establishing the OTP-Commerce relationship. Roger worked closely with Walter Hinchman of OTP, on how Commerce could best assist OTP in their mission.¹ First, it was decided that the Government frequency management function (Interagency Radio Advisory Committee, IRAC) should be carried out in a separate Frequency Management Division within the Commerce Office of Telecommunications. Second, there should be a significant policy research function in

¹ Roger had previously worked on communications and radio propagation at the Commerce Institute for Telecommunications Sciences (ITS) in Boulder where he worked with Walter Hinchman. In 1970, Walt worked with Tom Whitehead to help establish OTP.

OT to support OTP. Bob Lowe assigned Paul Polishuk to head the Washington Policy Support Division (WPSD), and Roger Salaman to establish a Policy Support Division in Boulder, Colorado (BPSD).

The Boulder Policy Support Division Established

Returning to Boulder in August 1971, Roger Salaman organized the Boulder Policy Support Division (BPSD), within the Commerce Office of Telecommunications, but separate from Boulder based OT Institute for Telecommunications Sciences (ITS)². Roger reported directly to Robert Lowe and the head of OT, John Richardson, in the Washington Commerce Office of Telecommunications.

After the previous full year working with OT and OTP in Washington, Roger began traveling to Washington, D.C from Boulder, Colorado every other week. He and the Boulder Policy Support Division staff met with OTP personnel, participated in meetings with industry, union and Government agency leaders and Congressional staffs, gave talks at policy conferences, and Universities, testified before the Congressional House and Senate Committees, helped prepare responses to telecommunication policy legislation, and coordinated Boulder PSD policy research with the needs of OTP.

Boulder Policy Support Division research in support of OTP included the areas of:

- Common Carrier Communications
- Land Mobile Communications
- Cable Television
- Broadcasting
- Government National Warning System
- Computer Communications and Privacy Issues
- Spectrum Management
- Postal Service Communications
- Intellectual Property

Boulder Policy Support Division Management

The management of the Boulder Policy Support Division was particularly important to its success. (See Appendix C) With the objective of performing policy research and analysis that reflected national ideals of freedom, Roger believed that the policy makers and researchers should work in an environment that reflected such freedom.

The distance separation from Washington was somewhat of an asset. When our staff went to meet with anyone in Washington, they always attained an audience since it was known that they would only be there a very limited time. But most important was the need to perform policy research in an interdisciplinary manner. Most organizations – in Government, industry

² Boulder Policy Support Division contracted with ITS for appropriate technical assistance.

and academia—are segregated by discipline. Monodisciplinary research would not have been productive to policy development which needs an integrated evaluation of complex issues. Economic, technical, sociological, legal, special interest, and political aspects of an issue need to be balanced in a continuum as a realistic, long-lasting policy is developed.

Because of the structure of academia, it was necessary to hire staff with a particular discipline background. However, to develop useful policies, it was necessary for the management system to allow the researchers to interact across disciplines, which is the cross-section of society in which policy is implemented. Part of this process was a “Y” oriented management approach, rather than the traditional “X” structured management. (See Appendix D) In doing this, breakthroughs in a particular approach often came from those with a background different than their academic discipline.

The emphasis of GSA on fostering an Open Space working environment allowed a diverse interaction between the staff. The staff became conversant in discussing issues from a broader perspective. When the Washington PSD staff visited Boulder PSD, they said they could not work in that environment because they needed the privacy of closing their doors when they talked with people. It took 6 months to a year before a person became completely comfortable conversing in an environment of communications freedom...and yet such freedom is the basic environment which was to encompass telecommunications policy.

Other research groups, such as from the University of Michigan and Bell Laboratories, came to Boulder to discuss how to perform interdisciplinary research.

The diversity of disciplines is reflected in the Boulder PSD hiring mix.

James Allman – Economist	James Hart – Electrical Engineer
Kathy Avila – Research assistant	Dale Hatfield – Industrial Management
Gene Ax – Electrical Engineer	Kathy Haubert – Clerk Stenographer
Leslie Berry - Mathematician	Edward Hetinger – Political philosophy/economist
Sharon Black – Telecommunications Policy Analyst	Paula Lamanía– Clerk Typist
Dorene Briels – Clerk Stenographer	Jerome Partch – Electrical Engineer
Janice Charter – Attorney	Andy Margison– Economist
John Dickerson – Political philosophy/economist	Robert McLean - Reseach Assistant
Maurine Ditmer – Clerk Stenographer	A.C. Miller – Social Science Analyst
Margarie Dolson – Secretary	Paul Millich – Political philosophy/economis
Donald Ewing – Mathematician	Steve Rosen – Research Assistant
Ben Gray – Electrical Engineer	Eric Ruderman – Research Assistant
Burgette Hart – Research assistant	Roger Salaman – Electrical Engineer, Manager of BPSD

Commerce National Telecommunications and Information Administration Established

In 1977, the National Telecommunications and Information Administration (NTIA) was established under the Assistant Secretary for Communications and Information. The Reorganization Plan No. 1 of 1977 transferred the Office of Telecommunications (OT) which already existed under the Assistant Secretary, to NTIA. It thus transferred the existing components of OT, including the functions of the Interdepartment Radio Advisory Committee (IRAC) and the Institute for Telecommunications Sciences (ITS) in Boulder, Colorado to NTIA. In addition the functions of the Office of Telecommunications Policy, including personnel, funds, property and records, were transferred to NTIA from the Executive Office of the President. The Assistant Secretary of Commerce for Communications and Information was designated to head NTIA.

Thus the Assistant Secretary, as Administrator of NTIA was now the principal advisor and spokesperson of the President and the Secretary relating to telecommunications technology, the converging technologies of telecommunications and information processing to economic development and national objectives, and improving the international relationships and understanding. Among other duties, the Assistant secretary shall set forth telecommunications policies other than the procurement and management of Federal telecommunications systems, shall administer and improve the efficiency and effectiveness of Federal use of the radio spectrum and conduct research and analysis on radio propagation and on telecommunications systems.

Boulder Policy Support Office Closed

After 16 years of policy research, the Boulder Division of the Policy Support Division was closed in 1986. Roger transferred to ITS as Special Technology Liaison and worked on policy issues with OT and OTP until he retired from the Office of Telecommunications in the Department of Commerce on January 1, 1990.

Appendices

Appendix A

**"President's Task Force on Communications Policy. Final Report",
Superintendent of Documents, U.S. Government Printing Office, Washington,
D.C., GPO 0-351-636, 508 pages, 1968.**

Abstract:

The final report of the President's Task Force on Communications Policy recommends strengthened federal powers to form public policy in telecommunications. Such planned policy would enable the private sector to reach its full capacities in the field by improving regulation when it is necessary and removing unnecessary regulation. Monopoly of telecommunications facilities should remain the exception, not the rule, so as to provide maximum consumer satisfaction and technological advancement. New powers should be given to the FCC, and a new agency should be created for formulating long-range communications policy. The report is organized around the subjects of the staff papers: the international telecommunications industry (combining of cable and satellite interests is recommended); INTELSAT; needs of less developed countries; domestic satellite use (pilot projects should precede final policy decisions); structure and regulation of the domestic carrier industry; the future of television (relaxation of restrictions, so as to allow cable TV to develop); spectrum use and management (greater flexibility); and the government's role in general.

Appendix B

Personnel and Funding for the Commerce Office of Telecommunications (Approximate)

Personnel:

Organization	Fiscal Year			
	71	72	73	74
FMSD	22	21	33	48
PSD		(58)*	49	45
TAD	19	29	11	10
ITS	116	112	73	73
OH	<u>21</u>	<u>18</u>	<u>33</u>	<u>30</u>
	178	180	199	206
OA (ITS)	<u>110</u>	<u>113</u>	<u>72</u>	<u>74</u>
TOTAL	288	293	271	280

*PSD personnel obtained from other division allocations.

Fiscal Organization	Fiscal Year			
	71**	72	73	74
Organization				
FMSD	\$1.0 M	1.0	1.6	1.8
PSD	-----	1.4	1.5	1.7
TAD	.4	.6	.3	.2
ITS	<u>2.5</u>	<u>2.2</u>	<u>1.9</u>	<u>1.3</u>
	3.9	5.2	5.3	5.0
OA	<u>4.7</u>	<u>4.2</u>	<u>4.3</u>	<u>4.3</u>
TOTAL	\$8.6 M	9.4	9.6	9.3

**Annualized

Definitions:

FMSD – Frequency Management Systems Division, Washington

PSD – Policy Support Division, Washington and Boulder had about equal number of staff

TAD – Telecommunications Analysis Division, Washington

ITS – Institute For Telecommuncation Sciences, direct funding, Boulder

OA (ITS) – Institute For Telecommunications Sciences, other agency funding, Boulder

OH – Overhead

Numbers are approximate

Overhead extracted from Division allocations

Appendix C

Comparing Management Success of the Boulder and Washington Policy Support Divisions

After four years of policy research, Paul Polishuk, a senior member of the Commerce OT Policy Support Division in Washington D.C., presented a paper on Interdisciplinary Policy Research and Management at the special session on the Management of Interdisciplinary Policy Research, 141st Annual meeting of the American Association for the Advancement of Science in January 1975. He subsequently published his results in the IEEE Transactions on Engineering Management, Vol. EM-23, No. 2, May 1976.

Quoting from that article, Mr. Polishuk stated:

“Starting from a nucleus of six professionals, the organization (*PSD, Boulder and Washington*) grew to 54 over a three-year period, with one section of 20 located in Boulder, CO, the other 34 in Washington, D.C.

The Boulder operation has developed into a truly interdisciplinary group, consisting of economists, mathematicians, political scientists, engineers, marketing and lawyers working in a closely integrated fashion. They have moved into a nonterritorial environment where there are excellent internal communications, team work, enthusiasm, and esprit de corps. No formal organization exists. The separation from the client located in Washington has not affected their ability to perform. They have made extensive use of communications media, such as audio and computer conferencing, to maintain communications with the sponsor.

The Washington-based operation has been functionally organized along the lines of the Office of Telecommunications Policy. There seem to be less team work, information flow and program coordination. There is no indication that there are better relations with the client, even though they are physically closer. There has been rapid turnover in both the management and staff.”

Appendix D

Contrast of Theory Y and Theory X Management

Douglas McGregor, in “The Human Side of Enterprise” published by Penguin Business Library, London, 1960, introduced theory X and Theory Y management. X is the authoritarian approach to management that had rigid hierarchies, tight discipline and firm lines of power. Y is a more relaxed, freer approach where everyone is encouraged to participate. Management and workforce are not separated and the whole approach is more human.

HISTORY OF OTP ACTIONS

1971

January 7	POLICY ON AERONAUTICAL SATELLITE COMMUNICATIONS (FAA) (FAA)
May	Recommendations on satellite/cable mix (FCC) (see December 22, 1975)
July 8	Cabinet Cable Committee established (see January 16, 1974)
July 20	Began preparation for 1979 WARC <u>entry</u> (see May 6, 1974)
August 19	*Broadband Cable Demonstration Study announced (see May 15, 1972)
August 19	Recommended 223-225 MHz for citizen band radio (FCC) <i>NP</i> (see December 27, 1974; March 29, 1972)
September 8	Radar spectrum engineering criteria established (Agencies)
September 9	Recommend need for interference standards for video equipment (FCC)
October 5	Recommended radio deregulation pilot program (FCC) (see November 1975; October 3, 1975)
October 28	*RECOMMENDED POLICY OF OPEN ENTRY FOR DOMESTIC SATELLITES (FCC) (see March 17, 1972)
November 15	SUMMARIZED ADMINISTRATION'S VIEWS ON FCC CABLE TELEVISION PROPOSALS (Congress)
December 6	Establishment of spectrum technical standards for Federal Government (Agencies)

HISTORY OF OTP ACTIONS

1972

- January 6 Began development of national policy on computer/communications through contract study (see September 27, 1973)
- February 1 Released First Year Summary Activity Report
- February 3 Coordination and approval of Federal program on control of potentially hazardous electromagnetic radiation (Agencies) (see April 29, 1975; May 20, 1974)
- February 14 Proposed joint program on satellite communications for international civil aviation (FAA) (see January 11, 1971)
- March 17 *Released studies on Open Entry DOMSAT Policy (FCC) (see October 28, 1971)
- March 29 Recommended for a "General Public Radio Service" at 223-225 MHz for unfilled needs of a "nation on the move" (see August 29, 1971; December 27, 1974)
- April 4 ANNOUNCED CHANGES IN EMERGENCY BROADCAST SYSTEM
- April 14 *Began significant common carrier contract studies on (a) Economies of Scale, (b) Multipart Tariffs, (c) Uniform System of Accounts, and (d) Economics of Terminal Interconnection (see September 30, 1974; September 23, 1973)
- April 24 Recommended against mandated consortium of space segment applicants (proposed by FCC) (see November 25, 1974)
- April 24 Established Federal Government communications policy and planning council
- May 15 *Released Broadband Demonstration contract study (see August 8, 1971)
- June 20 50th anniversary of IRAC
- August 3 *Released contract study of "Cost Analysis of CATV Components" by Resources Management Corporation (RMC)
- November 7 Held first conference on communications policy research

HISTORY OF OTP ACTIONS

1973

- January 15 Issued new Federal Government Manual on frequency management (Agencies)
- February 26 ISSUED POLICY OBJECTIVES PAPER CONCERNING INTERNATIONAL INDUSTRY STRUCTURE
- March 19 Proposed broadening changes to Communications Satellite Act of 1962
(see April 9, 1974; November 19, 1973)
- March 21 URGED NATIONWIDE ADOPTION OF 911 EMERGENCY NUMBER (STATES)
(see December 4, 1973)
- March 21 Recommended reduction in TV reruns and prime time
(see September 20, 1974)
- May 23 *Recommended approval of AT&T DUV System, but with pre-condition to allow interconnection and resale (FCC)
(see February 25, 1975; January 24, 1974)
- June *OTP recommends an experiment of user fees for Government spectrum
- August 1 Expressed need for copyright law interpretation and sports retransmission of sports events for cable TV (Pastore)
- August 6 Expressed concern for privacy considerations in development of Federal information systems
(see April 30, 1974; May 12, 1975; October 29, 1974, September 11, 1975)
- August 17 *POLICY ON USE OF 900 MHz BAND FOR LAND MOBILE RADIO COMMUNICATIONS
- September 14 Expressed concern about blackout of home sports events from television (FCC)
- September 27 Released contract study on computer communications
(see January 6, 1972)
- October 12 Established program for coordinated planning of Government Communications (Circular 12, Agencies)

1973 (Cont'd)

- November 28 Frequency requirements established for emergency medical services (FCC)
(see January 30, 1975)
- October PROPOSAL FOR ADDITIONAL VHF TELEVISION ALLOCATION
(see May 14, 1974)
- November 19 LEGISLATION PROPOSED FOR MODIFYING COMMUNICATIONS
SATELLITE ACT OF 1962
(see March 19, 1973; April 9, 1974)
- December 4 Issued handbook on Communications for 911 Emergency
Number Communications
(see March 21, 1973)

HISTORY OF OTP ACTIONS

1974

- January 7 Policy reducing Federal funding for communications satellite applications (Agencies)
(see January 31, 1975)
- January 16 *CABINET CABLE REPORT SUBMITTED TO THE PRESIDENT
(see July 8, 1971)
- January 24 *Recommended FCC inquiry as to need for regulating value added networks (VANS)
- January 24 *Recommended FCC initiate inquiry into resale and shared use of common carrier services (FCC)
(see February 25, 1975; May 23, 1975)
- February 1 Issued draft guidelines for Federal agencies radio broadcasting "spots"
- February 11 Released study by interagency audio-visual study group
- February 25 *Recommended need for more careful evaluation of regional frequency allocation experiment (FCC)
- April 1 Recommended standard radio brevity code for public safety
- April 9 Legislation for modification of 1962 Communications Satellite Act forwarded to Congress
(see March 19, 1973; November 19, 1973)
- April 30 RECOMMENDED AGAINST PROPOSED REQUIREMENT FOR ALL RADIOS TO HAVE BOTH AM AND FM RECEPTION (Congress)
- April 30 RECOMMENDED CURTAILMENT OF FEDNET GOVERNMENT DATA NETWORK PROCUREMENT (Agencies)
(see August 6, 1973; May 12, 1975; October 29, 1974; September 11, 1975)
- May 6 Specified agenda for U. S. participation in 1979 WARC (FCC)
(see July 20, 1971)
- May 14 VHF drop-in policy confirmed (FCC)
(see October 1973)
- May 20 Released report on dangerous biological effects of electromagnetic radiation
(see April 29, 1975; February 3, 1972)

1974 (Cont'd)

- June 21 POLICY ON PROCUREMENT OF GOVERNMENT TELECOMMUNICATIONS FROM THE PRIVATE SECTOR (Circular 13, Agencies)
(see June 5, 1975)
- July 1 Recommended fuel for telecommunications be provided priority allocation by FEO
- July 2 Recommended free broadcast time for major party political candidates not be constrained by equal time rules (Congress)
- July 16 LEGISLATION FOR LONG-RANGE FUNDING OF PUBLIC BROADCASTING SUBMITTED (Congress)
(see February 11, 1975)
- July 30 *Whitehead testimony before Hart Committee urges increased competition in telecommunications industry
- September 20 Recommended experiment significantly reducing anti-siphoning rules (FCC 19554)
- September 20 Recommended repeal of prime time rules (FCC 19622)
(see March 21, 1973)
- September 23 New programs in spectrum management in response to GAO Report (Congress)
(see September 29, 1975)
- September 23 Released contract study concerning common carrier depreciation practices and uniform system of accounts (FCC)
(see September 30, 1974; April 14, 1972)
- September 30 Recommended significant modification of common carrier uniform system of accounts (FCC)
(see April 14, 1972; September 23, 1974)
- October 10 Recommended against continued extension of Government frequency for metroliner experiment (DOT)
(see October 6, 1975)
- October 22 RECOMMENDED AGAINST EXTENDING MESSAGE SWITCHING CAPABILITY IN CRIME INFORMATION COMMUNICATIONS SYSTEMS
(see May 12, 1975; August 6, 1973; April 30, 1974, September 11, 1975)

1974 (Cont'd)

- November 5 Announced National Emergency Readiness Plan for communications
- November 18 *Supports RCA Alaska Communications Plan as meeting Federal Government requirement, and requirements unique to Alaska (FCC)
- November 25 *Concern about proposal to require, rather than permit, satellite mergers and anti-competitive potential of IBM/COMSAT merger
(see April 24, 1972)
- December 27 Supported compatibility between citizen radio Class E 223-225 MHz allocation and Government operation
(see August 29, 1971; March 29, 1972)

HISTORY OF OTP ACTIONS

- 1975
- January 13 *POLICY OF VHF WEATHER WARNING SYSTEM FOR NATIONAL EMERGENCY HOME WARNING
- January 30 Requests inclusion of new emergency medical communications standards in FCC Rules (FCC)
(see November 28, 1973)
- January 31 Organized Federal committee to evaluate satellite technology applications (Agencies)
(see January 7, 1974)
- February 3 Warning to Federal agencies concerning underwriting public television (Agencies)
- February 11 New legislation concerning public television funding submitted to Congress (Congress)
(see July 16, 1974)
- February 25 *RECOMMENDED THE OPPORTUNITY FOR RESALE AND SHARED USE OF COMMON CARRIER SERVICES (FCC)
(see January 24, 1974, May 23, 1973)
- February 1975 *OTP Paper released, "Television Distribution in Rural Areas"
- April 14 Concern expressed on inability of U. S. to present unified front in international discussions and negotiations
- April 24 *RECOMMENDED PROVIDING THE OPPORTUNITY FOR INTERCONNECTION TO THE COMMON CARRIER COMMUNICATIONS SYSTEMS (FCC 20003)
- April 29 Announced consolidated Federal research on the biological effects of electromagnetic radiation
(see February 3, 1972; May 20, 1974)
- May 12 Requested Justice Department to stop FBI from enhancing switching capability on crime information communications systems
(see October 29, 1974; August 6, 1973, April 30, 1974, September 11, 1975)
- June 5 *Initiated contract study to stimulate private sector competition in Federal communications procurement
(see July 15, 1974)

1975 (Cont'd)

- June 26 *Announced study on potential on additional services for television (see January 1976)
- July 14 Announced study of the potential impact of new technology on radio spectrum utilization
- August 28 Organized committee to analyze U. S. posture in telecommunications exports
- September 10 Announced contract study to reduce number of Government navigation systems (Agencies)
- September 11 Released contract study on legal protections of privacy (see August 6, 1973; April 30, 1974, May 12, 1975; October 29, 1974)
- September 17 Recommended against increasing FCC time for suspending tariffs to nine months (Congress)
- September 29 Initiated Government career program in spectrum management (see September 13, 1974)
- October 3 *Recommended broadening proposed experiment on relaxation of Fairness Doctrine in the top 10 radio markets (FCC) (see October 5, 1971; November 1975)
- October 6 Grant of one-month additional extension on use of Government frequency for metroliner communications experiment (see October 10, 1974)
- October 28 Concern expressed that Hawaii must be integrated into mainland communications system
- October 29 Testified at McDonald Congressional Hearing on the need for competition in parts of the common carrier system (Congress)
- November *Announced intent to draft legislation for deregulation experiment in radio (Congress) (see October 5, 1971; October 3, 1975)
- December 1 Organized advisory committee on improving Government and private sector cooperation in telecommunications R&D
- December 22 RECOMMENDED ELIMINATION OF SATELLITE/CABLE FILL MIX REQUIREMENT FOR INTERNATIONAL COMMUNICATIONS (FCC) (see May 1971)

HISTORY OF OTP ACTIONS

1976

January 15 Organization of Pacific Telecommunications Conference

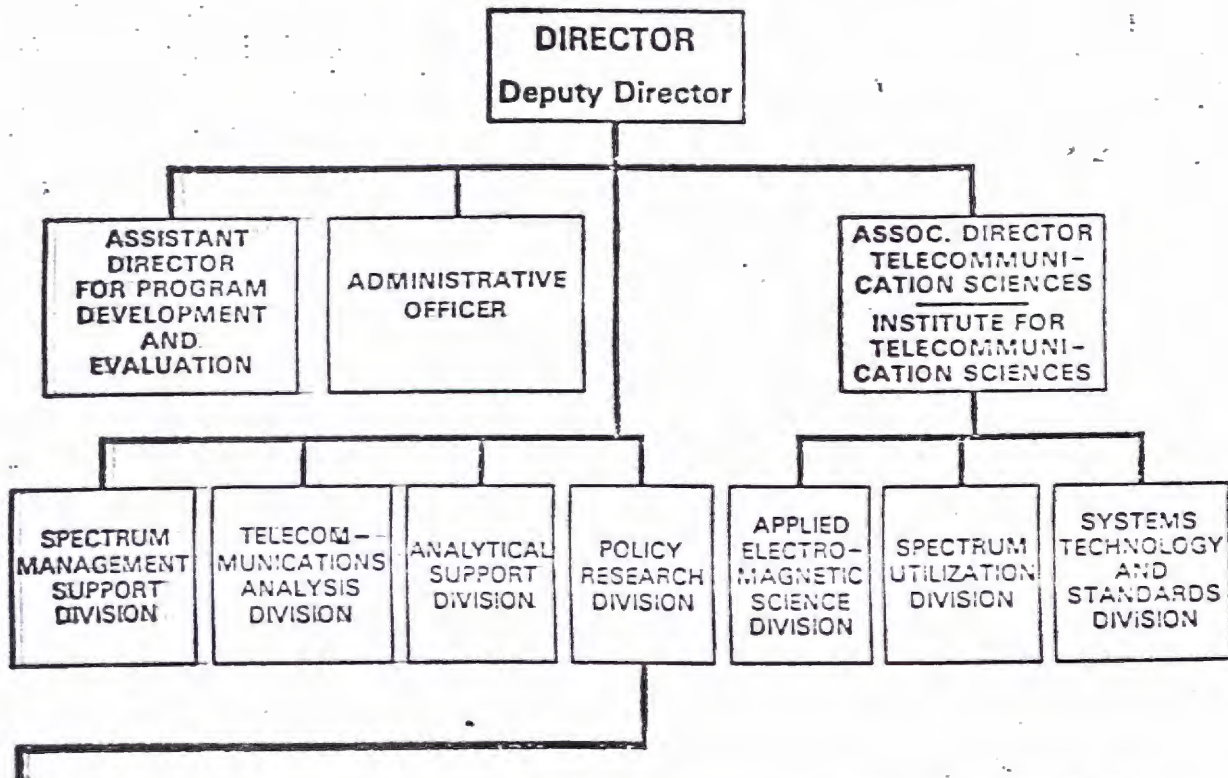
January 28 *Released DRI contract study on Add-On Services for
Television
(see June 26, 1975)

Boulder Policy Support Division Research 1971-1976

TABLE OF CONTENTS

	<u>Page</u>
ORGANIZATIONAL CHART	1
PRD SKILLS MIX	2
PRD WORKING PAPERS	
<u>Domestic Concerns:</u>	
Common Carrier	3
Mass Media	17
Spectrum	27
<u>Government Communications</u>	28
<u>International</u>	33
PRD SUPPORT OF OTP POLICIES	35
<u>Domestic Concerns:</u>	
Common Carrier	36
Mass Media	46
Spectrum	55
<u>Government Communications</u>	56
<u>International</u>	61

U.S. DEPARTMENT OF COMMERCE
Office of Telecommunications



The Policy Research Division shall, as requested by the Office of Telecommunications Policy, provide in-depth, interdisciplinary research looking toward the understanding, development, and effective implementation of present and potential national communications policies. As such, it shall:

- 1) Analyze emerging communications policy issues and assemble data and perspectives bearing on these issues;
- 2) Develop optional approaches for the resolution of the issues;
- 3) Evaluate alternatives as to their technical, economic, social, and political ramifications and as to the ease of implementation of these alternative policies;
- 4) On the basis of its analysis and evaluation, recommend a choice of alternatives to the Office of Telecommunications Policy; and
- 5) Be responsive to occasional short-term analytical, computational, data search, and data compilation tasks formulated by the Office of Telecommunications Policy.

POLICY RESEARCH DIVISION
SKILLS MIX

Professional

Economics
Engineering
Law
Mathematics
Philosophy
Political Science
Social Sciences

Research Assistance

Business
Computer Science
Economics
Education
Law
Philosophy
Science

COMMON CARRIER: LOCAL INTERCONNECTION

November 1971 Interconnection of Customer-Provided Telephone Sets
Martin B. Gray

December 1971 Electrical Hazards Associated with Customer-Provided
Terminal Equipment
Martin B. Gray

April 1972 Station Connection Costs and Procedures
Martin B. Gray

June 1972 Revenue Loss Attributable to the Time Lag Between
Service Orders and Station Connection
Martin B. Gray

August 1974 DDS Interconnection
Martin B. Gray

February 1975 Bell System Separations Methods for Independent Telephone
Companies
Russell C. Cline

April 1975 The Interconnection Studies of NARUS and NYPSC: Some
Comparisons and Conclusions
Donald R. Ewing

May 1975 Indications of Cross-Subsidy in the New York DSC
Interconnection Study
Donald R. Ewing

May 1975 Background Analysis 20003
James Alleman

June 1975 The Impact of Interconnection: The Role of Separations
Donald R. Ewing

October 1975 A Review of the Presentation by M. G. Killoch on "Alternative
Approaches... Cost of Pricing..."
Donald R. Ewing

November 1975 Some Thoughts Concerning OTP's Response to USITA's Study on
the Impact of Competition
Donald R. Ewing

COMMON CARRIER: LOCAL INSTALLATION

- January 1973 Rate Change in the Colorado Mountain States Telephone Telegraph Company
Sharon K. Black
- January 1973 Colorado PUC/Mountain Bell Increased Telephone Installation and Move Charge
Sharon K. Black
- June 1973 Capitalization vs. Expensing Installations: A Theoretical Approach
Jim Alleman
- June 1973 Impact of Colorado's Revised Telephone Installation Rates
Sharon K. Black
- July 1973 Cross-Subsidy - The Case of the Extension Phone
Jim Alleman
- December 1973 Impact of Telephone Installation Rate Changes after One Year
Sharon K. Black
- April 1974 An Analysis of the Demand for Telephone Service (A Case Study Reviewing the 1972 Installation Rate Change in the State of Colorado)
Sharon K. Black
- June 1974 An Analysis of the Impact of the 1972 Telephone Installation Rate Increase in Colorado
Sharon K. Black
- June 1975 Colorado: A Case Study in Cost-Related Installation Rates
Sharon B. Keefer and Peter V. Tryon
- September 1975 Increased Telephone Installation Rates: A Statistical Analysis of Colorado's 1972 Rate Change, with Peter V. Tryon
(same report with minor revisions sent forth in October, 1975 for OT Report Printing)
Sharon Black-Keefer

COMMON CARRIER: LOCAL ECONOMICS

May 1974 Pricing Structure of Local Telephone Service
Jim Alleman

June 1974 The Demand for Local Telephone Service
Jim Alleman

January 1975 Florida Public Service Commission Docket 73155-TP
(Telephone Company Advertising)
A. C. Miller

February 1975 Short Review of Interstate WATS
Burgette Hart

February 1975 A Brief Overview of Intrastate WATS
Burgette Hart

May 1975 Quality of Service-Existing Guarantees
Sharon B. Keefer

May 1975 The Cost of Basic (Local) Exchange Service
POLICY SENSITIVE
James H. Alleman

May 1975 Docket 18920 - Issue D
POLICY SENSITIVE
M. B. Gray, S. Black-Keefer, R. Cline

January 1976 Pricing Strategies: General Linear Formulations for
Stand Alone, Comparison and Consumer's Surplus Prices
Donald R. Ewing

January 1976 The SAI Contract: Observations and Comments
Donald R. Ewing

January 1976 Policy Analysis, Modeling and the SAI Network Analyzer
Donald R. Ewing

COMMON CARRIER: LOCAL DISTRIBUTION

January 1972

Short-Haul Telecommunications
L. E. Wood

March 1973

FCC Docket 18920--Local Distribution
Dale N. Hatfield

November 1975

Policy Implications of Multipoint Distribution Service
A. C. Miller

COMMON CARRIER: LONG-HAUL SPECIALIZED SERVICES

August 1973	Value-Added Communication Service Bob Merritt
October 1973	Value Added Networks J. Robert Merritt
April 1974	Value Added Network Services, Market Characteristics James W. Hart
April 1974	An Index to the CCSA Network Data Base Steven O. Rosen
June 1974	An Initial Look at VANS Breakeven Data James W. Hart
June 1974	Estimate of VANS Message Costs of TWX/Telex Service James W. Hart

COMMON CARRIER: LONG-HAUL RESALE

- September 1972 Classification of Service: Identification of Existing and Potential Applications and Status at FCC of Commercial Telecommunications Brokerage Activity
Vic Toth and Barbara Widick
- September 1972 The Function of Arbitrage in the Foreign Exchange Market
Barbara Widick
- December 1972 Freight Forwarding Regulations
Barbara Widick
- October 1974 Implications of Resale of Private Line Services
Jim Alleman, C. A. Baldwin, M. B. Gray, D. Hatfield
POLICY SENSITIVE
- January 1975 Comments on AT&T Projected Shifts due to Resale/Sharing
Donald R. Ewing
- February 1975 Legal Issues of Docket 20097
Charles Baldwin
- February 1975 Economic Consideration of Questions Raised by Docket 20097
Jim Alleman

COMMON CARRIER: LONG-HAUL ECONOMICS

August 1972	Cross-Subsidization Jim Alleman
October 1972	Critique of "Interim Report: Conceptual Framework Multi-part Tariffs: Feasibility and Desirability, of Implementations" Jim Alleman
November 1972	Multi-Part Tariff James H. Alleman
February 1973	Critique of the Final Report on Multipart Tariffs by Faucett and Associates Jim Alleman
March 1973	Cross-Subsidization: A Literature Review Jim Alleman
June 1973	Comment on Economies to Scale Paper Jim Alleman
June 1973	Issues in FCC Docket 19129 Jim Alleman
July 1973	The Long Line Message Telephone Demand Model (the Array Model) A Critique Jim Alleman
October 1973	Usage Sensitive Tariff Study - An Approach Jim Alleman
November 1973	Critique of "Additive Nonhomogeneous Production Function in Telecommunications" by E. F. Sudit James H. Alleman
January 1974	Cross-Subsidy -- The Case of the HiLo Tariff Jim Alleman
February 1974	Critique of SAI Report R73-40 (Revised 2/22/74) Jim Alleman and M. B. Gray
April 1974	A Critique: AT&T Market Research Studies on Usage Sensitive Pricing Barbara Widick

COMMON CARRIER: LONG-HAUL ECONOMICS (Cont'd)

- April 1974 Further Examination of the HiLo Private Line Tariff
ADMINISTRATIVELY RESTRICTED
Dale N. Hatfield
- June 1974 An Analysis of HiLo Question 2
Dale N. Hatfield
- December 1974 Critique of "Extension of Cross-Subsidy Model: Prepared by
Systems Planning Corporation
James H. Alleman
- March 1975 Analysis of Costs per Voice Equivalent Channel per Mile-
Month for Several Commercial Microwave Systems Versus Some
of the AT&T Rates
James W. Hart
- March 1975 A Comparison of AT&T's TELPAK and Hi-Density Tariffs
Sharon K. Black
- May 1975 The Postal Service and Telecommunications
POLICY SENSITIVE
C. A. Baldwin
- August 1975 Comparison of Long-Haul Microwave and Cable Facility
Costs of AT&T Long Lines
James W. Hart
- November 1975 Some Theorems on Industry Structure in a Multiproduct Market
Donald R. Ewing
- November 1975 Calculations of Elasticities, Vectors and Matrices
associated with SPC's First Report
James H. Alleman
- November 1975 A Note on SPC Demand Function Estimation
Donald R. Ewing

MOBILE AND PERSONAL COMMUNICATIONS

- February 1972 Program Planning Summary Mobile Communications
Dale N. Hatfield
- March 1972 Land Mobile Radio--Technological Alternatives and Implications
Gene G. Ax
- March 1972 Land Mobile Radio Spectrum--Requirements and Implications,
Tulsa, Oklahoma Area
Dale N. Hatfield
- April 1972 A Look at Simulcast FM Voice Transmission
Gene G. Ax
- May 1972 Impact of Using Four Channel Sets Instead of Seven as
Initially Proposed by the Bell System for their HCMTS
Gene G. Ax
- May 1972 Basis for License Fees for Government Frequencies
Donald R. Ewing
- May 1972 A Method to Estimate Maximum Number of Cars Active in
a Specified Area Using Traffic Counts and Some
Characteristics of the Area
W. B. Ganter
- May 1972 Comments on "LMR Policy Foundation"
Jim Alleman
- June 1972 Comments on "National Policy Guidelines (Draft)"
Dale N. Hatfield and Jim Alleman
- June 1972 Message Unit vs. Block Pricing in LMR Telephone Systems
Jim Alleman
- July 1972 The Allocation of Spectrum Under FCC Docket 18262
Jim Alleman
- July 1972 Mobile Communications Issue Paper for FY74 Budget
Dale N. Hatfield
- July 1972 Determination of the Amount of Vehicular Traffic in
a Metropolitan Area
James Crary
- August 1972 Critique of "Measurement and Analysis of Some Economic
Effects of Land Mobile Radio Communications"
Jim Alleman
- August 1972 LMR Status Report
Dale N. Hatfield

MOBILE: LAND MOBILE RADIO (Cont'd)

August 1972	The Impact of a Reduced Frequency Allocation on the AT&T Cellular System Dale N. Hatfield
August 1972	Notes of the Issue of WCC Supplied Dispatched Service Dale N. Hatfield
September 1972	LMR Technological Alternatives and Implications (Revised) Gene G. Ax
September 1972	Land Mobile Radio Cost Analysis Dale N. Hatfield
September 1972	Capital Requirements for AT&T's High Capacity Cellular System Jim Alleman
October 1972	Capital Requirement of AT&T's Land Mobile Systems Jim Alleman
October 1972	Land Mobile Study (POF) Dale N. Hatfield
December 1972	Automatic Vehicle Monitoring (AVM) System Jim Alleman
December 1972	Comments on "Automatic Vehicle Monitoring (AVM) Systems for Law Enforcement Use: A Review of Current Technology" by Philip Cheilik Jim Alleman
January 1973	First Draft Policy Letter on AVM (POF) Jim Alleman
March 1973	Computational Methods for the Poission, Erlang B and Erlang C Traffic Distribution for Large Numbers of Channels Donald R. Ewing
May 1973	Measures of Spectral Efficiency in Land Mobile Radio Dale N. Hatfield
May 1973	A Simulator of Mixed Direct and Store/Forward Trunked Traffic Donald R. Ewing
May 1973	Comments on "LMR Policy Foundations" Jim Alleman

MOBILE: LAND MOBILE RADIO (Cont'd)

September 1973	Notes on Citizen Band Radio Dale N. Hatfield
December 1973	Policy Implications of the Regional Frequency Management System Dale N. Hatfield
February 1974	Policy Implications of the Regional Frequency Management System (Revised) Dale N. Hatfield
February 1974	Confidence in Channel Utilization Estimates Gene G. Ax
April 1974	National Paging System - Part of the VANS Market James W. Hart
May 1974	One-Way Paging Gene G. Ax and Dale N. Hatfield
July 1974	Docket 18262 Channel Spacing Gene G. Ax
July 1974	Pseudo Common Carriers and Related Issues Charles A. Baldwin
October 1974	Docket 18262 Channel Spacing (Update of) Gene G. Ax
May 1975	Regulated Competitive Communications Services POLICY SENSITIVE C. A. Baldwin
October 1975	One-Way Paging -- Background Paper Summarizing Final Results on this project Gene G. Ax
October 1975	Personal Communications Task James W. Hart

DOMESTIC SATELLITE

- October 1971 Domestic Satellite Orbit/Spectrum Utilization
Dale N. Hatfield
- October 1971 Domestic Satellite Orbit/Spectrum Utilization--
Supplement
Dale N. Hatfield
- December 1971 A General Analysis of Domestic Satellite Orbit/Spectrum
Utilization
Dale N. Hatfield
- August 1972 Technical and Economic Trade-Offs for the Geostationary
Orbit Communications Research
Russell B. Chadwick
- September 1972 A Computer Program for Plotting Geostationary Communications
Satellite Coverage
R. A. McLean
- October 1972 Summary of the Domestic Communication-Satellite Applications
Barbara Widick
- December 1972 Domestic Satellite Policy and its Relevance to Educational
Uses of Satellites
Dale N. Hatfield
- April 1974 Comments on RCA and Stanford Task Force Submission to
State of Alaska Suitable Ways to Provide Communication
to Bush Communities
Gene G. Ax
- June 1974 Domestic Satellite Applications and Development,
From June 19, 1972 to June 3, 1974
A. C. Miller
- September 1974 Domsat Systems Chronology: Hughes, GTE, AT&T, Comsat,
MCIL, CML, IBM/Comsat (October 1970-August 1974)
A. C. Miller
- December 1974 Domestic Satellites: The Canadian Experience with Telesat
Canada
A. C. Miller
- January 1975 GSAT/AT&T Joint Satellite Venture: Legal and Regulatory
Actions, september 30, 1974 to January 22, 1975
A. C. Miller

AWARENESS: COMMON CARRIER

March 1972	Continental Telephone Data Martin B. Gray
September 1972	Wireline Common Carrier Coverage in the United States Burgette Hart
October 1972	Contract Proposal Concerning Company Profiles Martin B. Gray
January 1973	Telephone Operating Company Data--Four Volumes Burgette A. Hart
January 1973	Catalog of Telephone Tariff Restrictions Sharon K. Black
June 1973	Telephone Tariff Restrictions Sharon K. Black
August 1973	Profiles of Telex/TWX Customers Sharon K. Black
August 1973	Second Summary of Telephone Tariff Restrictions - Private Line Tariff Sharon K. Black
November 1973	The New Direction in Telecommunications Regulations Jim Alleman
June 1974	AT&T Microwave Radio and Cable Designations J. W. Hart and W. Bolter
May 1975	A Critique of "Cost Allocation and Monopoly" with an Extension of the Discrimination Model James Alleman
December 1975	Cost Criteria for Justification of Monopoly Donald R. Ewing

BROADCAST TELEVISION

- May 1974 DRI Contract on Phase III of Broadband Communications in Rural Areas Microwave Relay Considerations
James W. Hart
- May 1974 Critique of DRI May 1974 Draft Report on Broadband Communications in Rural Areas
Martin M. Gray
- May 1974 Addendum to the Critique of the DRI May 1974 Draft Report on Broadband Communications in Rural Areas
Martin B. Gray
- November 1974 Technical and Cost Factors in Low Power Television Broadcast Transmitters and Translators
James W. Hart
- December 1974 Rural Area Translators
C. A. Baldwin
- December 1974 Television Service in Rural Areas
Barbara Widick
- December 1974 Low Power TV Transmitter Reliability Available and Case Experience of Unattended Operation
James W. Hart
- January 1975 Public Acceptance of Television as a Source of Entertainment, Education, and Information
Barbara Widick
- February 1975 Technical Considerations in Improved Sound and Add-On Signalling Systems for TV
Gene G. Ax
- January 1976 Frequency Assignments and Power Allowable for VHF/UHF Translators
James W. Hart

BROADCAST RADIO

December 1974

A Cursory Look at the Economics of Broadcasting,
Networking, and Small Stations
A. C. Miller

March 1975

License Renewal Bills of the 94th Congress
C. A. Baldwin

October 1975

A Note on Clear Channel Radio Stations
A. C. Miller

CATV: REVIEW OF CURRENT REGULATION

- August 1974 Evaluation of Current CATV Policy Subtask 1 - Review of Data Availability
Sharon Black, Patty Kellner, and Joanne Williams
- November 1974 Initial Draft of Request for Proposals Concerning Evaluation of CATV Public Policy
Jim Alleman and Patty Kellner
- January 1975 CATV Public Policy Task Description
Sharon Black, Jim Alleman, and Patty Kellner
- January 1975 A Review of Recent Developments in Copyright
Joanne Williams
- February 1975 Cable Television Regulation--A History of the Following Areas: Exclusivity, Minimum Service, Additional Service, Leapfrogging, Minimum Channel Capacity, Access Channels, Program Origination and Copyright
Patricia A. Kellner and Joanne Williams
- March 1975 Cable Television Regulation and the First Amendment
Charles A. Baldwin
- January 1976 A Summary of Selected CATV Regulations Since 1962
Joanne Williams and Patricia Kellner

CATV: DISTRIBUTION COSTS

February 1972

CATV Amplifiers
Richard Espeland

February 1974

Preliminary Survey of TV Program Distribution Costs
Sharon K. Black and Dick Espeland

September 1974

CATV Networking Costs
James W. Hart

November 1975

Cost of Wiring the Nation
A. C. Miller

CATV: PROGRAMMING

July 1972	Two-Way Services for Broadband John Messerschmitt
September 1973	Cable Services Study Sharon K. Black
September 1973	Broadband Software Costs Sharon K. Black
May 1974	DRI Contract on Phase III of Broadband Communications in Rural Areas Microwave Relay Considerations James W. Hart
May 1974	Critique of DRI Draft Report on Broadband Communica- tions in Rural Areas Martin B. Gray
May 1974	Addendum to the Critique of the DRI May 1974 Draft Report on Broadband Communications in Rural Areas Martin B. Gray
April 1974	Programming Public Service Channels: A Discussion of Possible Program Outlines and Associated Costs Sharon K. Black

CATV: FINANCIAL MODEL

November 1971	Sample Run Jerry Partch
June 1972	OTP Cable Television System Financial Model Program Description J. E. Partch and R. J. Fisher
April 1973	CATV Economies of Scale Steven Rosen
April 1973	Improvements in the "OTP Cable TV System Financial Model" Steven Rosen
January 1974	User's Guide to MITRE's Cable TV Financial Performance Model Nick Ourusoff and Jim Washburn
February 1974	CATV Financial and Operational Rules of Thumb Dick Espeland
May 1974	Revision of "CATV Financial and Operational Rules of Thumb" Richard H. Espeland
December 1974	A Comparison of Economic Cable Models Data Inputs A. C. Miller
January 1976	User's Guide to the Cable Financial Performance Model Ronald Richter and Dorothy Duran

CABLE DEMONSTRATION

- July 1972 The Role of the Government in the Development of Two Way
Interactive Cable--A Thought Piece
John Messerschmitt
- September 1973 BCS Demonstration Program: Preliminary Observations
POLICY SENSITIVE
M. Gray, S. Black, R. Espeland, J. Messerschmitt
- November 1973 CATV Demonstration Program Funding Precedents: Interim Finding
Steven O. Rosen
- December 1973 Funding Precedents for the Cable Demonstration Project
Barbara Widick
- February 1974 Program Outlines and Associated Costs for Six CATV Public Ser-
vice Channels on a Cable TV Demonstration Project
Sharon Black
- March 1974 Critique of Cosmos Engineers, Inc., Report on BCS
Demonstration Implementation
M. B. Gray, R. H. Espeland and E. K. Smith
- June 1974 Critique of "Broadband Communications System Demonstration
Concept"
R. H. Espeland, M. B. Gray, E. K. Smith and R. A. Richter

CATV: PAY-TV

- August 1972 A Projection of Pay Cable Programming Based on a
Study of the Magazine and Radio Industries
John Messerschmitt
- September 1972 A Note on Pay Cable Revenue
John Messerschmitt
- June 1973 Workstatement for Pay TV Contract
Jim Alleman
- January 1974 STV - Critique of SRI's Proposal
Jim Alleman
- June 1974 The Toledo Pay Television Telephone Survey -- The Methodology
Patty Kellner
- August 1974 The Methodology of the Pay Television Telephone Survey
Patricia Kellner
- September 1974 Critique of SRI Pay Study
James Alleman
- November 1974 Critique of "Assessment of Demand for Pay Television
Under Current and Alternative Regulations"
James Alleman
- December 1974 Reconditioning of the Pay TV Demand Study
James Alleman
- March 1975 Executive Summary Analysis of Consumer Demand for Pay TV
Barbara Widick
- June 1975 Analysis of the Viacode Pay TV Data
James Alleman

CATV: TUTORIAL AND THOUGHT PAPERS

- May 1972 Monopoly vs. Diversity in Cable Television
Sharon K. Black
- March 1973 Extending Personal Freedom Through Technology of Cable
John Messerschmitt
- March 1973 The Courts and Personal Freedom
John Messerschmitt
- December 1973 Vertical Integration: A Case Study of the Motion Picture
Industry
Barbara Widick
- January 1974 Vertical Divestiture
Jim Alleman
- January 1974 Corporate Divestiture of a Vertically Integrated Firm
Jim Alleman
- April 1974 The Effect of Imported Signals on the Value of Television
Time
Donald R. Ewing
- November 1975 The Effect of Changes in the Penetration of CATV Systems
on Their Rate of Return
Joanne L. Williams and Sharon Black-Keefer

AWARENESS: CATV

- February 1973 CATV Data Base--Volume I--System Statistics for 20 Largest Systems
John Messerschmitt
- March 1973 CATV Data Base--Volume III--Basic Data on Organizations Providing Subscription Television
John Messerschmitt
- July 1974 CATV Data Base: User's Guide for 1971 Form 326 Data Files
Ron Richter
- March 1975 CATV System Status: An Analysis of the Industry
Sharon Black-Keefer
- April 1975 Cable Television Systems: A Study of the FCC's 1974 Information
Sharon Black-Keefer
- September 1975 CATV System Analysis
Sharon Black-Keefer
- October 1975 Cable Television Systems: A Revised Study on the FCC's 1974 Information
Sharon Black-Keefer
- November 1975 Revised CATV System Analysis
Sharon Black-Keefer
- November 1975 Analysis of CATV Systems in FCC Market, Code 1
Sharon Black-Keefer
- November 1975 System Characteristics of CATV Operation in FCC Market, Code 2
Sharon Black-Keefer
- January 1976 FCC Market Code 3: CATV System Characteristics
Sharon Black-Keefer

LONG-TERM SPECTRUM POLICY

October 1971	Spectrum Resource Allocation Leslie A. Berry and Donald R. Ewing
January 1972	Metropolitan Spectrum Availability Study Leslie A. Berry
March 1972	Communications Value of the Geostationary Orbit Donald Ewing
July 1972	The Procedure for Obtaining a Broadcast License in the AM, FM and VHF-TV Bands Linda Kinney
August 1972	The Shadow Price of Spectrum Jim Alleman
August 1972	Spectrum Use Measures Donald R. Ewing
August 1972	FCC Fee Schedule: Principles Used in Setting Fees Leslie A. Berry
October 1972	Measures of Spectrum Use Leslie A. Berry and Donald Ewing
October 1972	Spectrum Congestion Function Quantifies Metropolitan Spectrum Availability Leslie A. Berry
November 1972	A Systems-Specific Unit of Measure of Spectrum Space Use Leslie A. Berry and Donald R. Ewing
November 1972	Slow Auction Process Steven Rosen
November 1972	Analogy of Spectrum Charges Steven Rosen
January 1973	Metrics for Spectrum-Space Usage Donald R. Ewing and Leslie A. Berry
November 1974	OT Report: Shadow Price of Electromagnetic Spectrums: A Theoretical Analysis Jim Alleman

GOVERNMENT COMMUNICATIONS

March 1973	Government Telephone Systems Donald R. Ewing
August 1973	Alternatives to the Manual Telephone Call List of the Local Weather Forecaster Donald R. Ewing
February 1974	The Federal Telecommunications System - A Statutory Viewpoint Donald R. Ewing and James W. Hart
February 1974	Background Information on the Federal Telecommunications System Donald R. Ewing, Burgette Hart, and Roger Salaman
March 1974	Multiplexing in Data Transmission Networks Jim Walker
April 1974	Equipment and Techniques in Teleprocessing R. H. Espeland
July 1974	Data Communications Tariff Summary Sharon K. Black
September 1974	Library Search Summary and Commentary Batch to Interactive Harold Heater
September 1974	A Critique of Federal Property Management Regulation 101-32.11 "Data Communications Support for ADP Systems" Donald R. Ewing
September 1974	Justification of Data Communications-Strategy for Industry Interviews Donald R. Ewing and Harold Heater
September 1974	Private Supply vs. Governmental Supply of Telecommunications Services James H. Alleman
October 1974	A Critique of Federal Management Circular 74-5 "Management, Acquisition and Utilization of Automatic Data Processing" Donald R. Ewing
November 1974	Terminal Classification C. A. Baldwin

GOVERNMENT COMMUNICATIONS (Cont'd)

- November 1974 A Compendium of Regulations Concerning Federal Use of
Data Communications
Joanne Williams
- November 1974 Estimation of Federal and Defense Data Communications Costs
Donald R. Ewing
- November 1974 Justification of Data Communications-Candidate Firms for
Interview
Donald R. Ewing and Harold Heater
- November 1974 Data Networks Analysis Bibliography
Harold Heater
- November 1974 Proposed Federal Data Networks
Harold Heater
- November 1974 Tools for Evaluation of Data Networks
Harold Heater
- November 1974 Potential Savings in Data Transmission: Some Examples
Sharon K. Black
- November 1974 Guidelines for Conversion from Batch to Interactive:
Review of Current Policy
Nick Ourusoff
- December 1974 Justification of Data Communications-Plan for Industry
Interviews
Donald R. Ewing and Harold Heater
- December 1974 Data Communications Termination Charges
Sharon Black-Keefer
- April 1975 Geographic Distribution of Competitive Data Communications
Services
Sharon B. Keefer
- April 1975 Proposed Federal Computer Communication System
Harold Heater

WARNING

December 1971 Preliminary Cost-Benefit Analysis of Home Warning System for National Disaster
Leslie A. Berry

June 1972 Weather Disaster Warning Systems
Barbara Widick

November 1972 Patent and Advertising Aspects of DIDS
Linda Kinney

January 1973 Technical Factors Concerning the Use of CATV Pilot Tones to Distribute Warning Information
R. H. Espeland

January 1973 Telephone Warning System Reassessment
Martin B. Gray

January 1973 A Benefit Cost of a Quick Reaction Weather Warning System
Jim Alleman

February 1973 DCPA Contract, DIDS Home Receiver Development
Steven Rosen

April 1973 Home Warning Receiver Cost and Distribution Considerations
Gene G. Ax and Steven Rosen

May 1973 Progress Report Plus Time/Effort Estimates for the Spoofing/Jamming Task of the Home Warning Receiver Program
Gene Ax

June 1973 Cable Penetration and its Impact on Home Warning Policies
Barbara Widick

August 1973 Susceptibility of DIDS Home Warning Receivers to Spoofing Signal
POLICY SENSITIVE
Gene G. Ax

August 1973 Draft: A White Paper on Home Warning (POF)
POLICY SENSITIVE
Steven O. Rosen

January 1974 Revision of Warning Group Report: Executive Summary
May 1973--Appendices - January 1974
Barbara Widick

January 1974 Subscriber Response Evaluation of Alternative Warning Procedure
Barbara Widick and Carlos Rozo

January 1974 Alternatives in Home Warning (POF)
Steven O. Rosen

WARNING (continued)

- | | |
|---------------|---|
| February 1974 | Criteria for the Dissemination of Warning Information
Barbara Widick |
| February 1974 | Utilization Concepts of Alternative Warning Systems
Barbara Widick |
| March 1974 | Population Coverage by VHF/FM Systems
Jim Walker |
| March 1974 | Initial Look at the 'Spoofability' of NOAA VHF/FM Alerting
Receivers
Gene G. Ax |
| March 1974 | Towards a New Policy in Home Warning
POLICY SENSITIVE
Steven O. Rosen |

AWARENESS: FEDERAL TELECOMMUNICATIONS

- October 1972 Intra-Government Agency Funding of Telecommunications Tasks
Tom Huffaker
- July 1973 Government Functions and the Role of Telecommunications
Barbara Widick
- January 1974 Telecommunications and Energy: An Overview
Steven Rosen
- April 1974 Information Systems on Federal R&D Contracts in
Telecommunications
Donald R. Ewing
- November 1974 Preliminary Overview of Defense Telecommunications
Burgette A. Hart
- December 1974 A Manual of Telecommunications in the Federal Government
Donald R. Ewing, Barbara Widick, Burgette Hart, Rob Fleming
- April 1975 Coordination of Government Telecommunications
Donald R. Ewing

INTERNATIONAL

- December 1971 Submarine Cables and Communications Satellites:
Some Recent Developments
Sharon K. Black
- January 1972 Hawaiian (International) Question: A Brief Survey of the
Problem and the Current Pacific Communications Situation
Sharon K. Black
- May 1972 Including Hawaii in a U. S. Domsat System: The Economic
Political Impact on Intelsat
Sharon K. Black
- June 1972 Preliminary Briefing on Pacific Basin Communications
Dale N. Hatfield
- July 1972 Analysis of Pacific Basin Satellite Baseline System
Steven Rosen and Gene Ax
- October 1973 An Illustration of Remote Area Communications Satellite
Service for the Pacific Basin
Gene Ax, Steven Rosen, Dale Hatfield
- October 1973 Pacific Basin and Communications Satellite Study
Dale Hatfield, Gene Ax, Steven Rosen

INTERNATIONAL TRADE

- December 1972 The Export Potential of Cable Television Equipment,
Technology and Components in Europe
Sharon K. Black
- January 1973 The Effect of Domestic Policy Options on International
Communications and Equipment Trade
Sharon K. Black
- December 1973 The Export Potential of Cable Television Equipment,
Technology and Components in Europe
Sharon K. Black
- January 1974 Corporate Income Tax and Value Added Tax: Some Implications
in International Trade
Carlos Rozo
- August 1974 OI Report: Cable Television for Europe
Sharon K. Black
- January 1975 A Survey of Non-Tariff Trade Barriers for Microwave Radio and
Two-Way Radio Equipment
James W. Hart

PRD CONTRIBUTIONS TO OTP POLICY ACTIVITIES

The following section identifies certain OTP policy activities and the supporting analyses undertaken by PRD. The working papers listed for each effort represent the policy research which went into the development of OTP's policies.

When PRD activities are initiated, the final direction of OTP's policy is not necessarily known. Thus, PRD activity is not specifically aimed toward policy output, but in many cases the results serve as input to the FCC, such as in docket responses, or they serve as valuable background information in support of OTP's policy decisions.

This listing of working papers is intended to indicate the type of analysis and effort that supports and OTP policy response. However, these papers were not prepared exclusively for the activities listed, as many are relevant to other areas and were instrumental in uncovering other substantive policy issues.

FCC DOCKET 20003: THE ECONOMIC IMPACT OF COMPETITION

In April 1975, OTP filed on Docket 20003 with the FCC. There was close interaction between OTP (Hatfield and Homet) and PRD in developing the filing. It would be helpful to use this filing as an example of the work that goes into one of these filings and how PRD and OTP are able to participate in major issues undertaken by the FCC. In addition, it shows that the issues OTP has been working on since 1971 are relevant, valid and significant enough to become a major FCC inquiry. The preliminary work which was done by PRD served as background to OTP's submission. This work can be divided up into the areas of Terminal and Specialized Carrier Interconnection, Separation, Cross-Subsidy, and Usage Sensitive Pricing --including Installations.

Much of this work was, and is, used for more than simply responding to Docket 20003, but the docket served as a forum for some of OTP's policy considerations. It is useful to note the broad area of activities that are involved in developing OTP's filing. Sometimes we lose perspective in the final rush to release a major policy paper. The result of such an effort draws upon the backgrounds and research of many individuals. Their interaction with one another in the interdisciplinary environment at PRD is critical.

Of course, OTP could have filed in Docket 20003 without the background support indicated by the working papers, but how much depth would the filing have? Would the analysis have been as supportable?

Attached, by area, are the numerous working papers which provided background material used in Docket 20003.

PRD's Efforts Involved in Filing Docket 20003:

When it became obvious that OTP had substantive comments that it could make to the docket, we began working on specific areas and refining our work to address the particular issues raised by Docket 20003. This effort is summarized by the following working papers:

DOCKET 20003 Cont'd

"Summary of the Issues in FCC Dockets 19896, 20003, and 20097,"
G. Ax, C. A. Baldwin, S. Black, R. Gabel, M. Gray, D. Hatfield
and A. C. Miller, October 4, 1974.

"Background Analysis 20003," J. Alleman, May 1975.

"The Interconnection Studies of NARUC and NYPSD: Some Comparisons and
Conclusions," D. Ewing, April 1975.

Following the Filing:

Once the filings to Docket 20003 were completed, PRD reviewed the filings and allegations of the common carriers. Again, this was accomplished by applying work that we had done in the past and drawing upon it for this exercise.

In addition, OTP's filing indicated that we would be working on certain areas and would forward these studies to the FCC upon their completion. These studies include Cost Allocation, Telephone Infrastructure, Usage Sensitive Pricing, and Separations.

Listed below are the working papers which have been completed since the filing.

"The Cost of Basic (Local) Exchange Service," J. Alleman, May 1975.

"Comparison of Long-Haul Microwave and Cable Facility Costs of AT&T Longlines," J. Hart, August 1975.

Interim Report: "Regulation and Innovation," J. Alleman, October 1975.

"Innovation Project," J. Alleman, October 1975.

"Separations Contract with Dick Gabel," J. Alleman, November 1975.

"A Critique of 'Regulatory Policy Changes in the Future of the Independent Telephone Industry' - A Summary Report Prepared by Systems Applications Inc., for USITA October 1975," J. Alleman, November 1975.

"Installation Subsidy - 1971 Figures," J. Alleman, December 1975.

Follow-on Work:

Release of the above papers.

BACKGROUND PAPERS PRELIMINARY TO FILING FCC DOCKET 20003

Interconnect

- "Interconnection of Customer-Provided Telephone Sets," M. Gray, November 1971.
- "Electrical Hazards Associated with Customer-Provided Terminal Equipment," M. Gray, December 1971.
- "Station Connection Costs and Procedures," M. Gray, April 1972.
- "Revenue Loss Attributable to the Time Lag Between Service Orders and Station Connection," M. Gray, June 1972.
- "DDS Interconnection," M. Gray, August 6, 1974.

Usage Sensitive Pricing

- "Critique of "Interim Report: Conceptual Framework Multi-Part Tariffs: Feasibility and Desirability of Implementations," J. Alleman, October 1972.
- "Multi-Part Tariff," J. Alleman, November 1972.
- "Rate Change in the Colorado Mountain States Telephone and Telegraph Company," S. Black, January 1973.
- "Colorado PUC/Mountain Bell Increased Telephone Installation and Move Charge," S. Black
- "Impact of Colorado's Revised Telephone Installation Rates," S. Black, June 1973.
- "Critique of the Final Report on Multipart Tariffs by Faucett and Associates," J. Alleman, February 1973.
- "Usage Sensitive Tariff Study - An Approach," J. Alleman, October 1973.
- "Impact of Telephone Installation Rate Changes After One Year," S. Black, December 1973.
- "A Critique: AT&T Market Research Studies on Usage Sensitive Pricing," B. Widick, April 1974.
- "An Analysis of the Demand for Telephone Service (A Case Study Reviewing the 1972 Installation Rate Change in the State of Colorado)," S. Black, April 1974.

DOCKET 20003 Cont'd

"Pricing Structure of Local Telephone Service," J. Alleman, May 1974.

"The Demand for Local Telephone Service," J. Alleman, June 1974.

"An Analysis of the Impact of the 1972 Telephone Installation Rate Increase in Colorado," S. K. Black, June 1974.

Cross Subsidy and Separations (including Cost of Service)

"Cross-Subsidization," J. Alleman, August 1972.

"Cross-Subsidization: A Literature Review," J. Alleman, March 1973.

"Capitalization vs. Expensing Installations: A Theoretical Approach," J. Alleman, June 1973.

"Cross-Subsidy - The Case of the Extension Phone," J. Alleman, July 1973.

"Cross-Subsidy - The Case of the HiLo Tariff," J. Alleman, January 1974.

"Critique of 'Extension of Cross-Subsidy Model' Prepared by Systems Planning Corporation," J. Alleman, December 1974.

"Bell System Separations Methods for Independent Telephone Companies," R. Cline, February 1975.

"Analysis of Costs per Voice Equivalent Channel per Mile-Month for Several Commercial Microwave Systems Versus Some of the AT&T Rates," J. Hart, March 1975.

"A Comparison of AT&T's Telpac and High Density Tariffs," S. K. Black, March 24, 1975.

DOCKET 20097: RESALE AND SHARED USE

In 1973, OTP suggested a Docket of this sort to the FCC.

Preliminary reports leading to filing:

"Classification of Service; Identification of Existing and Potential Applications and Status at FCC of Commercial Telecommunications Brokerage Activity," V. Toth and B. Widick, September 1972.

"The Function of Arbitrage in the Foreign Exchange Market," B. Widick, September 1972.

"Freight Forwarding Regulations," B. Widick, December 1972.

"Value-Added Communication Service," B. Merritt, August 6, 1973.

"Value-Added Networks," J. Merritt, October 19, 1973.

"Value-Added Network Services, Market Characteristics," J. Hart, April 1974.

"National Paging System - Part of the VANS Market," J. Hart, April 1974.

When OTP decided to file in 20097, PRD activities included the following supporting papers:

"Implications of Resale of Private Line Services," J. Alleman, C. A. Baldwin, M. B. Gray, D. Hatfield, October 11, 1974.

"Comments on AT&T Projected Shifts due to Resale/Sharing," D. Ewing, January 3, 1975

"Legal Issues of Docket 20097," C. A. Baldwin, February 14, 1975

"Economic Consideration of Questions Raised by Docket 20097," J. Alleman, February 14, 1975.

"An Initial Look at VANS Breakeven Data," J. Hart, June 1974 (Filed with the FCC).

"Estimate of VANS Message Costs of TWX/Telex Service," J. Hart, June 27, 1974.

OTP Action:

Filed response to FCC Docket 20097 on February 25, 1975.

COST ALLOCATION

OTP is planning, in conjunction with the FCC and the NSF, to do extensive study on Cost Allocation.

Preliminary work leading to current effort:

"Cross-Subsidization," J. Alleman, August 1972.

"Cross-Subsidization: A Literature Review," J. Alleman, March 1973.

"Cross-Subsidy - The Case of the Extension Phone," J. Alleman, July 1973.

"The New Direction in Telecommunications Regulations," J. Alleman, November 1973.

"Cross-Subsidy - The Case of the HiLo Tariff," J. Alleman, January 1974.

"Critique of 'Extension of Cross-Subsidy Model' Prepared by Systems Planning Corporation," J. Alleman, December 26, 1974.

"Competition and Regulation," J. Alleman, February 7, 1975.

"Indications of Cross-Subsidy in the New York DSC Interconnect Study," D. Ewing, May 7, 1975.

"A Critique of 'Cost Allocation and Monopoly' with an Extension of the Discrimination Model," J. Alleman, May 12, 1975.

"A Review of the Presentation by M. G. Killoch on 'Alternative Approaches . . . Cost of Pricing . . .'" D. Ewing, October 1, 1975.

"Cost Criteria for Justification of Monopoly," December 23, 1975.

Planned Follow-on:

Aid OTP in development of the RFP for the Cost Allocation Proposal.

OTP Action Anticipated:

Let of \$.5M contract on Cost Allocation.

VANS

On January 24, 1974 OTP recommended that the FCC review the need for regulating Value Added Networks (VANS).

Preliminary work by PRD in this area included:

"Value-Added Communication Service," Bob Merritt, August 1973.

"Value-Added Networks," J. Robert Merritt, October 1973.

Following OTP's request for an inquiry, PRD undertook the following work:

"Value-Added Network Services, Market Characteristics," James W. Hart, April 1974.

"An Initial Look at VANS Breakeven Data," James W. Hart, June 1974.

"Estimate of VANS Message Costs of TWX/Telex Service," James W. Hart, June 1974.

Interim OTP Action:

OTP recommended curtailment of FEDNET government Data Network procurement (Agencies), April 30, 1974.

DOMESTIC SATELLITE

OTP recommended an "Open Entry" Policy for Domestic Satellites on October 28, 1971.

In support of this policy, the following analysis was undertaken by PRD:

"Domestic Satellite Orbit/Spectrum Utilization," Dale N. Hatfield, October 1971

"Domestic Satellite Orbit/Spectrum Utilization--Supplement," Dale N. Hatfield, October 1971.

"Submarine Cables and Communications Satellites: A Comparison of Recent Developments," Sharon K. Black, December 1971.

"A General Analysis of Domestic Satellite Orbit/Spectrum Utilization," Dale N. Hatfield, December 1971.

OTP Action:

OTP released studies on Open Entry DOMSAT Policy on March 17, 1972.

When additional OTP action was undertaken to review the Domestic Satellite Applications, PRD assisted OTP with the following activities:

"Technical and Economic Trade-Offs for the Geostationary Orbit Communications Research," Russell B. Chadwick, August 1972.

"A Computer Program for Plotting Geostationary Communications Satellite Coverage," R. A. McLean, September 1972.

"Summary of the Domestic Communication-Satellite Applications," Barbara Widick, October 1972.

"Domestic Satellite Policy and its Relevance to Educational Uses of Satellites," Dale N. Hatfield, December 1972.

"Domestic Satellite Applications and Development, From June 19, 1972 to June 3, 1974," A. C. Miller, June 1974.

"Domsat Systems Chronology: Hughes, GTE, AT&T, Comsat, MCIL, CML, IBM/Comsat (October 1970-August 1974)," A. C. Miller, September 1974.

"Domestic Satellites: The Canadian Experience with Telesat Canada," A. C. Miller, December 1974.

LAND MOBILE RADIO

On August 1973, OTP issued a letter advising the FCC on Land Mobile Policy, Docket 18262.

Preliminary work leading to:

- "Program Planning Summary Mobile Communications," D. Hatfield, February 1972.
- "Land Mobile Radio--Technological Alternatives and Implications," G. Ax, March 1973.
- "Land Mobile Radio Spectrum--Requirements and Implications, Tulsa, Oklahoma Area," D. Hatfield, March 1972.
- "Land Mobile Study (POF)," D. Hatfield, October 1972.
- "Computational Methods for the Poission, Erlang B and Erlang C Traffic Distribution for Large Numbers of Channels," D. Ewing, March 1973.
- "Measures of Spectral Efficiency in Land Mobile Radio," D. Hatfield, May 1973.
- "A Simulator of Mixed Direct and Store/Forward Trunked Traffic," D. Ewing, May 1973.
- "Comments on 'LMR Policy Foundations,'" J. Alleman, May 1973.
- "Impact of Using Four Channel Sets Instead of Seven as Initially Proposed by the Bell System for Their HLMB," G. Ax, May 1972.
- "Basis for License Fees for Government Frequencies," D. Ewing, May 1972.
- "A Method to Estimate Maximum Number of Cars Active in a Specified Area Using Traffic Counts and Some Characteristics of the Area," W. Ganter, May 1972.
- "Comments on 'LMR Policy Foundation,'" J. Alleman, May 1972.
- "Comments on 'National Policy Guidelines (Draft),' " D. Hatfield and J. Alleman, June 1972.
- "Message Unit vs. Block Pricing in LMR Telephone Systems," D. Hatfield, June 1972.

LAND MOBILE RADIO Cont'd

- "The Allocation of Spectrum Under FCC Docket 18262," J. Alleman, July 1972.
- "Mobile Communications Issue Paper for FY74 Budget," D. Hatfield, July 1972.
- "Determination of the Amount of Vehicular Traffic in a Metropolitan Area," J. Crary, July 1972.
- "Critique of 'Measurement and Analysis of Some Economic Effects of Land Mobile Radio Communications,'" J. Alleman, August 1972.
- "LMR Status Report," D. Hatfield, August 1972.
- "The Impact of a Reduced Frequency Allocation on the AT&T Cellular System," D. Hatfield, August 1972.
- "Notes on the Issue of WCC Supplied Dispatch Service," D. Hatfield, August 1972.
- "LMR Technological Alternatives and Implications (Revised)," G. Ax, September 1972.

Follow-on to the Policy Recommendations.

- "Confidence in Channel Utilization Estimates," G. Ax, February 1974.
- "An Analysis of the Criteria for Defining High Capacity Rate Centers," D. Hatfield, Appendix - D. Ewing, July 12, 1974.
- "Docket 18262 Channel Spacing," G. Ax, July 12, 1974.
- "Pseudo Common Carriers and Related Issues," C. Baldwin, July 31, 1974.
- "Docket 18262 Channel Spacing (Update of)," G. Ax, October 29, 1974.

OTP Action: Policy letter to FCC on Docket 18262, Land Mobile Radio.

CABINET COMMITTEE REPORT ON CATV

Preliminary reports inputting to Report:

"CATV Amplifiers," Richard Espeland, February 1972.

"CATV Data Base--Volume I--Systems Statistics for 20 Largest Systems,"
John Messerschmitt, February 1973.

"Cable Services Study," Sharon K. Black, September 1973.

"Broadband Software Costs," Sharon K. Black, September 1973.

"Vertical Integration: A Case Study of the Motion Picture Industry,"
Barbara Widick, December 1973.

OTP Action:

OTP released the Cabinet Committee Report on Cable Communications
on January 16, 1974.

CABLE BILL

Reports completed by PRD developing material for the Cable Bill include:

- "Corporate Divestiture of a Vertically Integrated Firm," Jim Alleman, January 1974.
- "Preliminary Survey of TV Program Distribution Costs," Sharon K. Black, and Dick Espeland, February 1974.
- "The Effect of Imported Signals on the Value of Television Time," Donald R. Ewing, April 1974.
- "Programming Public Service Channels: A Discussion of Possible Program Outlines and Associated Costs," Sharon K. Black, April 1974.
- "CATV Data Base: User's Guide for 1971 Form 326 Data Files," Ron Richter, July 1974.
- "Evaluation of Current CATV Policy Subtask 1 - Review of Data Availability," Sharon Black, Patty Kellner, and Joanne Williams, August 1974.
- "CATV Networking Costs," James W. Hart, September 1974.
- "Initial Draft of Request for Proposals Concerning Evaluation of CATV Public Policy," Jim Alleman and Patty Kellner, November 1974.
- "A Review of Recent Developments in Copyright," Joanne Williams, January 1975.
- "CATV Public Policy Task Description," Sharon Black, Jim Alleman and Patty Kellner, January 1975.
- "CATV Data Transmission -- Regulatory Problems," C. A. Baldwin, January 1975.
- "Cable Television Regulation--A History of the Following Areas: Exclusivity, Minimum Service, Additional Service, Leapfrogging, Minimum Channel Capacity, Access channels, Program Origination and Copyright," Patricia A. Kellner and Joanne Williams, February 1975.

"CATV System Status: An Analysis of the Industry," Sharon Black-Keefer, March 1975.

"Cable Television Regulation and the First Amendment," Charles A. Baldwin, March 1975.

Reports providing specific information on current CATV industry status:

"Cable Television Systems: A Revised Study of the FCC's 1974 Information," Sharon Black-Keefer, October 1975.

"Cost of Wiring the Nation," A. C. Miller, November 1975.

"Revised CATV System Analysis," Sharon Black-Keefer, November 1975.

"CATV Briefing Book," Joanne Williams and Sharon Black-Keefer, November 1975.

"Analysis of CATV Systems in FCC Market Code 1," Sharon Black-Keefer, November 1975.

"The Effect of Changes in the Penetration of CATV Systems on Their Rate of Return," Joanne L. Williams and Sharon Black-Keefer, November 1975.

"System Characteristics of CATV Operation in FCC Market Code 2," Sharon Black-Keefer, November 1975.

"FCC Market Code 3: CATV System Characteristics," Sharon Black-Keefer, January 1976.

"A Summary of Selected CATV Regulations Since 1962," Joanne Williams and Patricia Kellner, January 1976.

Final OTP action: Final draft of the Cable Bill is being prepared by OTP.

CATV FINANCIAL MODEL

OTP developed the Financial Performance Model which will be used by those involved in CATV Public Policy Analysis.

Preliminary work leading to the development of the model:

"Sample Run," J. Partch, November 1971.

"OTP Cable Television System Financial Model Program Description," J. Partch and R. Fisher, June 1972.

"CATV Data Base--Volume I--System Statistics for 20 Largest Systems," J. Messerschmitt, February 1973.

"CATV Economies of Scale," S. Rosen, April 1973.

"Improvements in the 'OTP Cable TV System Financial Model,'" S. Rosen, April 1973.

"A Comparison of Economic Cable Models Data Inputs," A. C. Miller, December 16, 1974.

Activities Associated with the Model:

"User's Guide to MITRE's Cable TV Financial Performance Model," N. Ourusoff and J. Washburn, January 24, 1974.

"Preliminary Survey of TV Program Distribution Costs," S. Black and D. Espeland, February 1974.

"CATV Financial and Operational Rules of Thumb," D. Espeland, February 14, 1974.

"Revision of 'CATV Financial and Operational Rules of Thumb,'" R. Espeland, May 16, 1974.

"Users Guide to OTP/MITRE Model," J. Alleman, J. Washburn, R. Richter, January 1976.

Proposed Follow-on:

1. To distribute the financial model for use within government agencies and to detect any minor bugs which may remain in the program.
2. To make the financial model accessible to the general public and individuals in this area.

CATV FINANCIAL MODEL Cont'd

OTP Action Anticipated:

Demonstration of Financial Model scheduled for week of February 23, 1976. Public release of Financial Model.

BROADBAND SERVICES TO RURAL AREAS

In 1974, OTP expressed interest in evaluating the broadband needs of rural areas and the technical viability of meeting them.

PRD input in this area included:

"Technical and Cost Factors in Low Power Television Broadcast Transmitters and Translators," James W. Hart, November 1974.

"Rural Area Translators," C. A. Baldwin, December 1974.

"Television Service in Rural Areas," Barbara Widick, December 1974.

"Low Power TV Transmitter Reliability Available and Case Experience of Unattended Operation," James W. Hart, December 1974.

"A Cursory Look at the Economics of Broadcasting, Networking, and Small Stations," A. C. Miller, December 1974.

OTP Action:

OTP released DRI reports on Rural Broadband in February 1975.

Follow-on:

"Frequency Assignments and Power Allowable for VHF/UHF Translators," J. Hart, January 1976.

PAY TELEVISION

Preliminary involvement in Pay Television includes:

- "Two-Way Services for Broadband," J. Messerschmitt, July 1972.
- "A Projection of Pay Cable Programming Based on a Study of the Magazine and Radio Industries," J. Messerschmitt, August 1972.
- "A Note of Pay Cable Revenue," J. Messerschmitt, September 1972.
- "CATV Data Base--Volume III--Basic Data on Organizations Providing Subscription Television," J. Messerschmitt, March 1973.
- "Workstatement for Pay TV Contract," J. Alleman, June 1973.

Support of OTP's major effort, Stanford Research Institute Contract on Pay TV, included:

- "STV - Critique of SRI's Proposal," J. Alleman, September 1973.
- "The Methodology of the Pay television Telephone Survey," P. Kellner, August 13, 1974.
- "Critique of Final Pay Cable Draft," J. Alleman, September 26, 1974.
- "Critique of 'Assessment of Demand for Pay Television Under Current and Alternative Regulations,'" J. Alleman, November 4, 1974.
- "Initial Draft of Request for Proposals Concerning Evaluation of CATV Public Policy," J. Alleman and P. Kellner, November 19, 1974.
- "Reconditioning of the Pay TV Demand Study," J. Alleman, December 9, 1974.
- "Executive Summary Analysis of Consumer Demand for Pay TV," B. Widick, March 6, 1975.
- "Analysis of the Viacode Pay TV Data," J. Alleman, June 6, 1975.

Follow-on: Release of SRI's report and accompanying policy recommendations.

OTP Action Anticipated:

Release of "Analysis of Consumer Demand for Pay Television," with letter of policy recommendation to the FCC.

ADD-ON SERVICES FOR TV
(Multi-Channel Sound)

In December 1974 OTP requested research on the viability of add-on services for TV.

PRD work in this area included:

"Public Acceptance of Television as a Source of Entertainment, Education, and Information," Barbara Widick, January 1975.

"Technical Considerations in Improved Sound and Add-On Signalling Systems for TV," Gene G. Ax, February 1975.

OTP Action:

OTP announced a study on "Potential of Additional Services for Television," June 26, 1975.

RADIO DEREGULATION

OTP recommended a Radio Deregulation Pilot Program to the FCC on October 5, 1971.

PRD work in this area included:

"Clear Channel Radio Station," A. C. Miller, October 1975.

"License Renewal Bills of the 94th Congress," C. A. Baldwin, March 1975.

OTP Action:

1. OTP recommended to the FCC that the proposed experiment on the relaxation of the Fairness Doctrine in the Top 10 radio markets be expanded, October 3, 1975.
2. OTP announced its intent to draft legislation for a deregulation experiment in radio, November 5, 1975.

LONG-TERM SPECTRUM

In June 1972, OTP was considering ways in which economics could be introduced into the allocation of the spectrum for the government's use. Some of the early working papers completed by PRD are listed below:

"Metropolitan Spectrum Availability Study," Leslie A. Berry,
January 1972.

"Value of the Geostationary Orbit," Donald R. Ewing, March 1972.

"FCC Fee Schedule: Principles Used in Setting Fees," Leslie A. Berry, August 1972.

"Technical and Economic Trade-Offs for the Geostationary Orbit Communications Resource," Russell B. Chadwick and Dwight S. Irwin, OT Report 73-8.

"Basis for License Fees for Government Frequencies," Donald R. Ewing, May 1972.

By August 1972 a "Spectrum Economics Working Group" was formed to investigate the problem of introducing economic considerations into the federal frequency allocation and assignment process. Don Ewing and Les Berry were members of this working group at OTP.

In June 1973 OTP recommended to GAO and to OMB that an experiment be made in a government radar band and that usage fees be used as the economic factor in the revised procedure. The experiment was to cover several years. Boulder's input to this recommendation included:

"Metrics for Spectrum-Space Usage," Donald R. Ewing and Leslie A. Berry, OT Report 73-24, November 1973.

"Shadow Price of Electromagnetic Spectrum: A Theoretical Analysis," James Alleman, OT Report 74- , November 1974.

"Slow Auction Process for Spectrum Allocation," Steven Rosen, November 1972.

INCREASED EFFICIENCY IN GOVERNMENT COMMUNICATIONS

On April 24, 1972, OTP established a Federal Government Communications Policy and Planning Council. As input to this Council, PRD undertook the following work:

"Intra-Government Agency Funding of Telecommunications Tasks," Tom Huffaker, October 1972.

"Government Telephone Systems," Donald R. Ewing, March 1973.

"Government Functions and the Role of Telecommunications," Barbara Widick, July 1973.

"The Federal Telecommunications System - A Statutory Viewpoint," Donald R. Ewing and James W. Hart, February 1974.

"Background Information on the Federal Telecommunications System," Donald R. Ewing, Burgette Hart, and Roger Salaman, February 1974.

"A Manual of Telecommunications in the Federal Government," Donald R. Ewing, Barbara Widick, Burgette Hart and Rob Fleming, December 1974.

As a result of the Council's activity, OTP released two important circulars to Federal agencies. These were:

1. Circular 12, released October 12, 1973 in which OTP established a program for coordinated planning of government communication, and
2. Circular 13, released June 21, 1974, in which OTP announced a policy to encourage procurement of government telecommunications from the private sector.

From March 1974 through April 1975, all of PRD's activity in the Government Efficiency area was assisting OTP collect the information necessary to evaluate the agency responses from these two circulars. PRD's work included:

"Multiplexing in Data Transmission Networks," Jim Walker, March 1974.

"Equipment and Techniques in Teleprocessing," R. H. Espeland, April 1974.

"Information Systems on Federal R&D Contracts in Telecommunications," Donald R. Ewing, April 1974.

INCREASED EFFICIENCY IN GOVERNMENT COMMUNICATIONS Cont'd

- "Data Communications Tariff Summary," Sharon K. Black, July 1974.
- "Library Search Summary and Commentary Batch to Interactive," Harold Heater, September 1974.
- "A Critique of Federal Property Management Regulation 101-32.11 'Data Communications Support for ADP Systems,'" Donald R. Ewing, September 1974.
- "Justification of Data Communications-Strategy for Industry Interviews," Donald R. Ewing and Harold Heater, September 1974.
- "Private Supply vs. Governmental Supply of Telecommunications Services," James H. Alleman, September 1974.
- "A Critique of Federal Management Circular 74-5 'Management, Acquisition and Utilization of Automatic Data Processing,'" Donald R. Ewing, October 1974.
- "Terminal Classification," C. A. Baldwin, November 1974.
- "Preliminary Overview of Defense Telecommunications," Burgette A. Hart, November 1974.
- "A Compendium of Regulations Concerning Federal Use of Data Communications," Joanne Williams, November 1974.
- "Estimation of Federal and Defense Data Communications Costs," Donald R. Ewing, November 1974.
- "Justification of Data Communications-Candidate Firms for Interview," Donald R. Ewing and Harold Heater, November 1974.
- "Data Networks Analysis Bibliography," Harold Heater, November 1974.
- "Proposed Federal Data Networks," Harold Heater, November 1974.
- "Tools for Evaluation of Data Networks," Harold Heater, November 1974.
- "Potential Savings in Data Transmission: Some Examples," Sharon K. Black, November 1974.
- "Guidelines for Conversion from Batch to Interactive: Review of Current Policy," Nick Ourusoff, November 1974.
- "Justification of Data Communications-Plan for Industry Interviews," Donald R. Ewing and Harold Heater, December 1974.

INCREASED EFFICIENCY IN GOVERNMENT COMMUNICATIONS Cont'd

"Data Communications Termination Charges," Sharon Black-Keefer,
December 1974.

"Geographic Distribution of Competitive Data Communications Services,"
Sharon Black-Keefer, April 1975.

"Proposed Federal Computer Communication System," Harold Heater,
April 1975.

"Coordination of Government Telecommunications," Donald R. Ewing,
April 1975.

NATIONAL EMERGENCY HOME WARNING SYSTEM

OTP initiated the need for an Emergency Home Warning System in October 1971.

Work undertaken by PRD in this area included:

"Preliminary Cost-Benefit Analysis of Home Warning System for National Disaster," Leslie A. Berry, December 1971.

"Weather Disaster Warning System," Barbara Widick, June 1972.

"Patent and Advertising Aspects of DIDS," Linda Kinney, November 1973.

"Technical Factors Concerning the Use of CATV Pilot Tones to Distribute Warning Information," R. H. Espeland, January 1973.

"Telephone Warning System Reassessment," Martin B. Gray, January 1973.

"A Benefit Cost of a Quick Reaction Weather Warning System," Jim Alleman, January 1973.

"DCPA Contract, DIDS Home Receiver Development," Steve Rosen, February 1973.

"Home Warning Receiver Cost and Distribution Considerations," Gene G. Ax and Steven Rosen, April 1973.

"Progress Report Plus Time/Effort Estimates for the Spoofing/Jamming Task of the Home Warning Receiver Program," Gene Ax, May 1973.

"The Feasibility of Using CATV Systems as a Distribution Auxiliary to DIDS," Dick Espeland, May 1973.

"Cable Penetration and its Impact on Home Warning Policies," Barbara Widick, June 1973.

"Susceptibility of DIDS Home Warning Receivers to Spoofing Signals," Gene G. Ax, August 1973. POLICY SENSITIVE

"Alternatives to the Manual Telephone Call List of the Local Weather Forecaster," Donald R. Ewing, August 1973.

Draft: "A White Paper on Home Warning (POF)," Steven O. Rosen, August 1973. POLICY SENSITIVE

"Revision of Warning Group Report: Executive Summary, May 1973; Appendices, January 1974," Barbara Widick, January 1974.

"Subscriber Response Evaluation of Alternative Warning Procedures," Barbara Widick and Carlos Roza, January 1974.

NATIONAL EMERGENCY HOME WARNING SYSTEM Cont'd

"Alternatives in Home Warning (POF)," Steven O. Rosen, January 1974.

"Criteria for the Dissemination of Warning Information," Barbara Widick, February 1974.

"Utilization Concepts of Alternative Warning Systems," Barbara Widick, February 1974.

"Population Coverage by VHF/FM Systems," Jim Walker, March 1974.

"Initial Look at the 'Spoofability' of NOAA VHF/FM Alerting Receivers," Gene G. Ax, March 1974.

"Towards a New Policy in Home Warning," Steven O. Rosen, March 1974.
POLICY SENSITIVE

OTP Action:

OTP announced its policy on VHF Weather Warning System for National Emergency Home Warning, January 13, 1975.

INTERNATIONAL TRADE

On February 26, 1973, OTP issued a policy objectives paper concerning the International Industry Structure.

Preliminary papers in this area completed by PRD include:

"The Export Potential of Cable Television Equipment, Technology and Components in Europe," Sharon K. Black, December 1972.

"The Effect of Domestic Policy Options on International Communications and Equipment Trade," Sharon K. Black, January 1973.

As the issues were defined, the following work was undertaken by PRD:

"Corporate Income Tax and Value Added Tax: Some Implications in International Trade," Carlos Roza, January 1974.

OT Report: "Cable Television for Europe," Sharon K. Black, August 1974.

"A Survey of Non-Tariff Trade Barriers for Microwave Radio and Two-Way Radio Equipment," James W. Hart, January 1975.

Recent OTP Action:

OTP organized a committee to analyze U.S. posture in Telecommunications exports, August 28, 1975.

PACIFIC BASIN SATELLITE

OTP requested information on Pacific Basin Communication Satellite needs.

Preliminary reports completed by PRD investigating Pacific Basin needs:

"Hawaiian (International) Question: A Brief Survey of the Problem and the Current Pacific Communications Situation," Sharon K. Black, January 1972.

"Including Hawaii in a U.S. Domsat System: The Economic/Political Impact on Intelsat," Sharon K. Black, May 1972.

"Preliminary Briefing on Pacific Basin Communications," Dale N. Hatfield, June 1972.

"Analysis of Pacific Basin Satellite Study," Dale Hatfield, Gene Ax, Steve Rosen, August 1972.

"An Illustration of Remote Area Communications Satellite Service for the Pacific Basin," Gene Ax, Steven Rosen, Dale Hatfield, October 1973.

"Comments on RCA and Stanford Task Force Submission to State of Alaska Suitable Ways to Provide Communication to Bush Communities," Gene G. Ax, April 1974.