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***The Program:***  
*Who We Are & What We Do*

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● ***Program on  
Information Resources Policy  
1977-1978***

***Harvard University***

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# ***The Program:*** *Who We Are & What We Do*

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*The Harvard Program's  
Working Partners as of  
November, 1978*

Abt Associates Inc.  
Action for Children's Television  
American Can Company  
American District Telegraph Company  
American Newspaper Publishers  
Association  
American Telephone and Telegraph  
Arthur D. Little Foundation  
Auerbach Publishers Inc.  
Bell Canada  
Beneficial Management Corporation  
Boston Broadcasters Inc.  
The Boston Globe  
Burroughs Corporation  
Canada Post  
Central Telephone & Utilities Corporation  
Codex Corporation  
Common Cause  
Communications Workers of America  
Computer & Communications Industry  
Association  
Consolidated Edison Company of New  
York, Inc.  
Des Moines Register and Tribune  
Company  
Donaldson, Lufkin & Jenrette  
Doubleday and Company, Inc.  
Economics and Technology, Inc.  
Encyclopaedia Britannica  
L. M. Ericsson  
Federal Communications Commission  
Federal Reserve Bank of Boston  
Field Enterprises, Inc.  
First National Bank of Boston  
First National Bank of Chicago  
General Telephone & Electronics  
Corporation  
Hallmark Cards Inc.  
Harte-Hanks Communications, Inc.  
Honeywell, Inc.  
Household Finance Corporation  
IBM Corporation  
Information Gatekeepers, Inc.  
International Data Corporation  
International Paper Company  
International Resource Development Inc.  
International Telephone and Telegraph  
Corporation  
Iran Communications & Development  
Institute  
Lee Enterprises, Inc.  
Lockheed Missiles & Space Company, Inc.  
John and Mary R. Markle Foundation  
Marsteller, Inc.  
McGraw-Hill, Inc.  
Mead Corporation  
Meredith Corporation  
Minneapolis Star and Tribune Company  
National Aeronautics and Space Adminis-  
tration  
National Association of Letter Carriers  
National Telephone Cooperative  
Association  
The New York Times Company  
Nippon Electric Company  
Norfolk and Western Railway Company  
Oppenheimer & Company, Inc.  
Payment Systems, Inc.  
J. C. Penney Company, Inc.  
Pergamon Press Ltd.  
Pitney Bowes  
The Public Agenda Foundation  
Reader's Digest Association, Inc.  
Reuters, Ltd.  
Salomon Brothers  
Seiden & de Cuevas Inc.  
Siemens AG  
Southern Pacific Communications Company  
Stromberg-Carlson Corporation  
Systems Applications, Inc.  
Time Inc.  
Times Mirror  
Transamerica Corporation  
U.S. Department of Commerce:  
National Technical Information Service  
National Telecommunications and Infor-  
mation Administration  
United States Postal Service  
United Telecommunications, Inc.  
The Washington Post Company  
Western Union International, Inc.  
Xerox Corporation

*Act as men of thought. Think as men of action. — Henri Bergson*

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**Program on  
Information Resources Policy**

Anthony G. Oettinger  
Chairman

John C. LeGates  
Director

John F. McLaughlin  
Executive Director/Postal and Allied Arenas

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Available on request are the following publications:

*Information Resources: Performance, Profits and Policy*

*The Program: Who We Are and What We Do*

*The Program in Brief*

*Available Publications*

*List of Affiliates*

200 Aiken  
Harvard University  
Cambridge, Massachusetts 02138  
617 495-3986

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# 1

## *The Program in Brief*

### ***The Harvard Program***

Harvard University's Program on Information Resources Policy is a research center set up to explore change and develop policy options in Information Resources. Its work is done through partnership with information stakeholders in government, industry and the public.

Support—financial and substantive—comes from a diverse group of conflicting affiliates. All our research is reviewed by the conflicting parties and other experts. All our work is public.

Since our beginning in 1973, we have conducted about sixty studies. In addition to the University faculty and students, we draw on the affiliating organizations and other contacts.

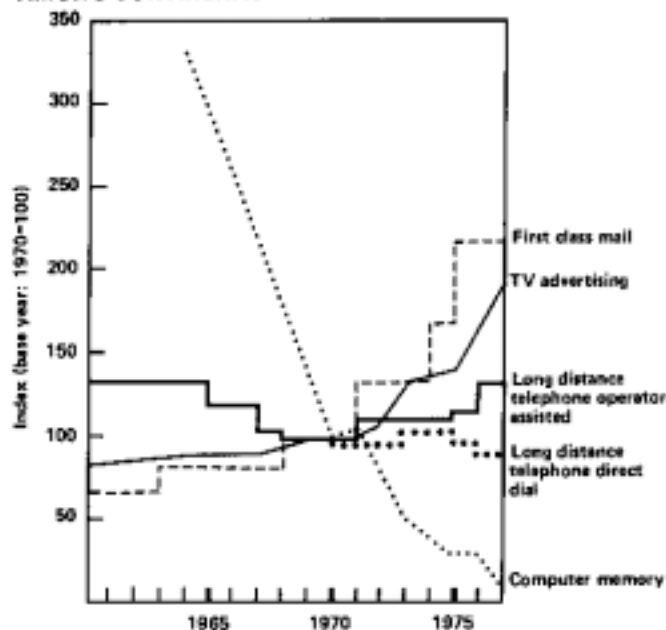
### ***Finding out more***

A description of "information resources policy" appears in a separate volume, *Information Resources: Performance, Profits and Policy*. The lists of current affiliates and of publications are updated from time to time and are available through the Program Office.

## Arenas

Our research currently concentrates on four principal arenas: Postal Services, Communications, Media, and Electronic Funds Transfer Systems. Much of our work concerns the interrelationships among these arenas and other information industries including libraries, MIS and schools. We also examine common problems such as regulation, privacy, access and so on.

### CHANGES IN RELATIVE COST CREATE NEW RELATIONSHIPS AMONG OUR ARENAS



Sources:  
American Telephone & Telegraph Co., personal communication, April 20, 1978.

International Data Corporation, *Worldwide Industry Seminar, 1977*, Waltham, Massachusetts, p. H-23.

U.S. Bureau of the Census, *Historical Statistics of the United States, Colonial Times to 1970, Bicentennial Edition, Part 2*, U.S. Government Printing Office,

Washington, D.C., 1975, Series R 188, p. 807, and U.S. Bureau of the Census, *Statistical Abstract of the United States, 1976, 97th Edition*, U.S. Government Printing Office, Washington, D.C., Table 872, p. 531.

Columbia Broadcasting, Inc., personal communication, May 8, 1978.

***Basic questions***

The Program is a working partnership for asking:  
what are the goals of policy?  
what are the means?  
who says so?

***What we do***

We:  
describe areas of conflict  
name significant players  
enumerate stakes  
identify forces  
mark trends  
discuss strategies  
specify policy options and their likely consequences

***What we don't do***

We do not:  
take sides  
prescribe solutions

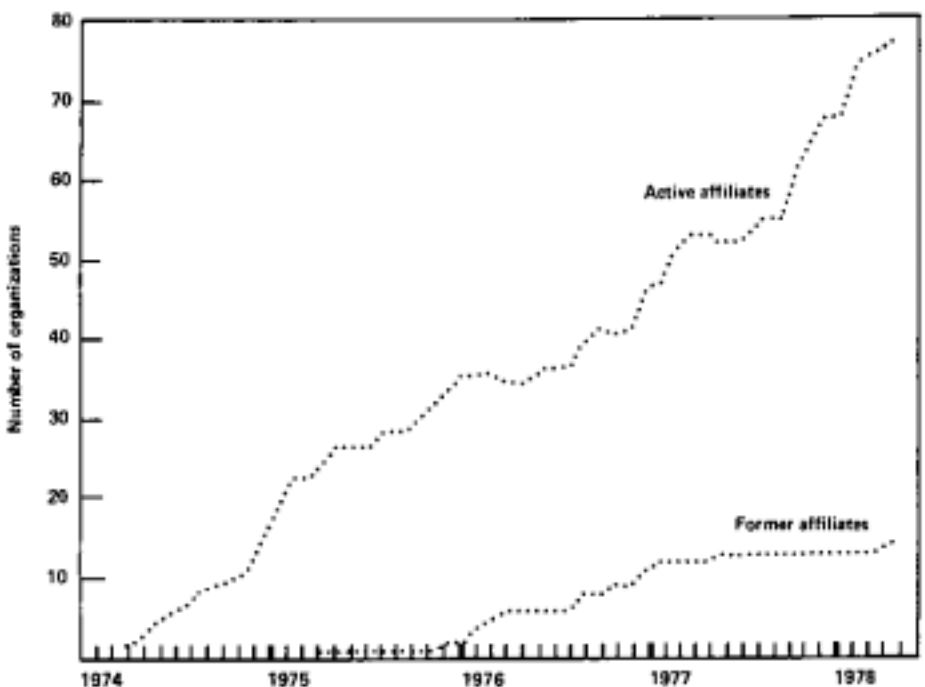
***Impartiality versus competence***

Policy-relevant information is useful insofar as its source is both competent and impartial. But these qualities are hard to combine. Those who are most competent are in the business and therefore have stakes. They are either partial or presumed to be. Those who are least partial are not in the business and don't have access to key information. This limits their competence.

The Program has developed its own approach to resolving this dilemma.

***Impartiality***

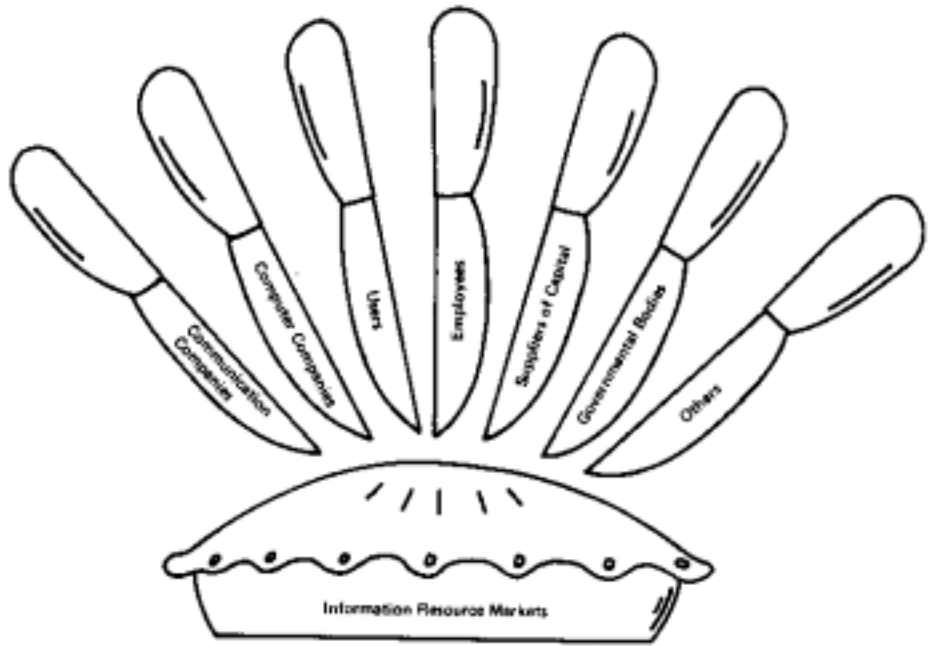
The Program's impartiality is based on seeking funds from affiliates who compete and conflict. No funding source is so large that we cannot afford to lose it. For every source we seek a competitor, a member of a competing industry, and a user. Diversity and competition offset individual pressures; collective pressure is for utility.

***Impartiality by diversified funding***

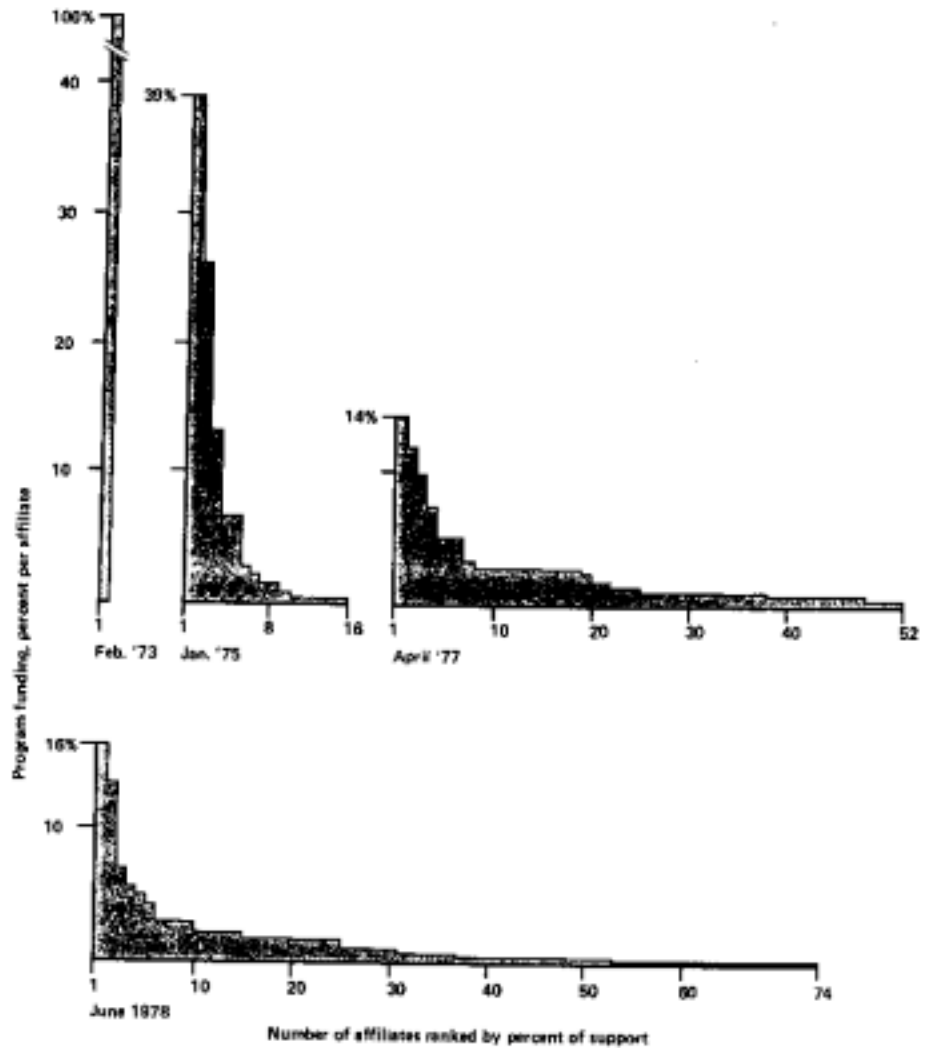


*Impartiality (continued)*

*The Program's affiliates are the conflicting stakeholders*



*The base of support grows broader; the program has grown from its 1973 beginnings by adding affiliates and decreasing dependence on a few contributors.*



*Impartiality (continued)*

*In addition, all the Program's work is public, and all affiliates know this from the beginning.*

NATIONAL COMMISSION ON LIBRARIES AND INFORMATION SCIENCE NEGOTIATED CONTRACT	CONTRACT NO. GEC-0-76-9075	PAGE 1 OF 2 PAGES
	REGISTERED PURCHASER TO 41 USC 252(c)(3)	TYPE OF CONTRACT Firm fixed price
ISSUE OFFICE National Commission on Libraries and Information Science 1717 K Street N.W., Suite 502 Washington, D.C. 20036	CONTRACT FOR Study on Interaction between Traditional Library Services and New Information Services	
CONTRACTOR (NAME AND ADDRESS) Harvard University 1350 Massachusetts Avenue Cambridge, Massachusetts 02138	ACCOUNTING AND APPROPRIATION DATA 7740100 - Appropriation 2009890 - CAR	
PLACE OF PERFORMANCE Cambridge, Massachusetts	CONTRACT AMOUNT \$19,184.00	
SPECIAL PROVISIONS See Special Provisions, Article III	APPROVED BY National Commission on Libraries and Information Science	
	EFFEKTIVE DATE June 28, 1976	EXPIRATION DATE December 31, 1976

A standard negotiated contract for federally funded research.

- (f) Nothing contained in this clause shall imply a license to the Government under any patent or be construed as affecting the scope of any license or other right otherwise granted to the Government under any patent.
- (g) The Contractor shall not affix any restrictive markings under any Subject Data, and if such markings are affixed, the Government shall have the right at any time to modify, remove, obliterate or ignore any such markings.
- (h) ~~The Contractor further agrees that he will not publish, have published or otherwise disseminate any information of whatever nature resulting from the work being performed under this contract except as may be approved by the Project Officer designated in this contract.~~

The common clause giving publication control to the government is deleted here. The study was published by both the government and the Program.

## Competence

The backbone of our competence is review of draft agendas and reports by the stakeholders. Each paper is written as well as possible within the University. It then goes to each interested affiliate. We ask three questions:

- have we addressed the right issues?
- do we have the facts straight?
- have we represented your organization's point of view?

We also seek expert review. If a study touches on questions of economics, engineering, and law, we seek review from economists, engineers, and lawyers.

### REVIEWERS FOR "STATE REGULATION OF CABLE TELEVISION": STUDIES IN PROGRESS

cable regulator	17
cable industry	9
competing industry	9
financial institution	3
legislator	1
attorney	3
cable study group	5
economist	4
political scientist	2
other academic	1
	54

## Affiliation

The Program works with its affiliates.

Our affiliates provide:

- financial support
- reviews of strategy
- information on themselves

Our affiliates gain:

- an understanding of changing policy and business environments
- exposition and analysis of their views in a non-adversarial public forum

## Products

We offer:  
original research and roundups  
of other work

## FEDERAL COMMUNICATIONS LAW JOURNAL

Formerly  
FEDERAL COMMUNICATIONS BAR JOURNAL  
© 1976 by the Federal Communications Law Journal

VOLUME 30      WINTER 1977      NUMBER 1

### ARTICLES

The Communications Act Forty-Two  
Years: A Failure to Commemorate  
By G. Hamilton Loeb

Recent FCC decisions favoring competition in telecommunications have led the author to a re-examination of the provisions of the Communications Act of 1934. This Article examines two competing views of the common carrier system. Proponents of competition argue that the Act only authorized the reorganization of communications regulation under the FCC without addressing the competition question. Those opposing open entry into new communications markets contend that the Act prohibited competition by mandating a carefully regulated but unified system. Although the Act is ambiguous, the author argues that those favoring competition make the stronger argument. He suggests that congressional action is needed to resolve the ambiguities of the Communications Act.

Hamilton Loeb is a graduate of Harvard Law School. This article was the result of his work with the Program.

*Products (continued)*

*regular seminars for researchers  
and players*

**SEMINARS: SPRING 1978**

- February 27** **Views from the Public and Private Sector of Cable Regulations—and other things**—Lynn Wickwire, President, The Acton Corporation
- March 6** **Information Policy Development in the Carter Administration**—Richard M. Neustadt, Assistant Director, Domestic Policy Staff, The White House
- March 13** **Computer to Computer Communications: New International Issues**—Oswald H. Ganley, Deputy Assistant Secretary for Advanced and Applied Technology Affairs, Department of State, Bureau of Oceans and International Environmental and Scientific Affairs
- March 20** **TV Cable's Washington Connection**—Daniel Aaron, Chairman, National Cable Television Association, Vice President of Comcast
- April 3** **A Perspective from Industry, the Development of an Export Policy for Militarily Significant Technology**—Charles Phipps, Assistant Vice President, Texas Instruments, Inc.
- April 10** **Databanks and Information Services: Public or Private**—Andrew A. Aines, Senior Staff Associate, National Science Foundation (former Commissioner on National Commission on Libraries and Information Science) and Jerome S. Rubin, President, Mead Data Central
- April 17** **The Restructuring of the Telecommunications Industry**—Walter Gorkiewicz, Director of Technology Research and Victor Schnee, President, Probe Research, Inc.
- April 24** **Commercial Mailers: What They Expect of a Postal Service—(A Canadian Assessment)**—R. R. Evans, Director, Marketing Services, Canada Post
- May 1** **The Dilemma of Telecommunications Policy**—LeLund Schmidt, Assistant Vice President, Rates & Tariffs, GTE Services Corp.
- May 8** **U.S. Postal Service Plans for Electronic Message Services (EMS)**—John J. Wise, Assistant Postmaster General, Research and Development, and Edward E. Horgan, Executive Assistant to the Postmaster General
- May 15** **A Case Study in "Foreign Attachments"**—Thomas McCraw, Professor, Harvard Business School and Gale Merseth, Doctoral Candidate, Harvard Business School

*Congressional testimony*

**DOMESTIC TELECOMMUNICATIONS  
COMMON CARRIER POLICIES**

**HEARINGS**  
CONDUCTED BY THE  
SUBCOMMITTEE ON COMMON CARRIERS  
OF THE  
COMMITTEE ON COMMERCIAL, SCIENCE,  
AND TRANSPORTATION  
UNITED STATES SENATE  
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PAGE 2

HEARING NUMBER 100-100000-000000



OFFICE OF THE CLERK OF THE SENATE  
WASHINGTON, D.C. 20540

U.S. GOVERNMENT PRINTING OFFICE  
1978-10-100000-000000

**Congressional Testimony:**

"In our March 1977 hearings, Dr. Tony Oettinger was one of our most notable witnesses. He crystallized the concept of convergence of computers and communications, and their infrastructure, with the word 'comunications'. Our concern with information policy is inextricably tied to computers and to the communications network."

Senator Ernest F. Hollings, Chairman, Subcommittee on Communications, Committee on Commerce, Science and Transportation, speech before the Computer and Communications Industry Association, Washington, D.C., February 28, 1978.



*Products (continued)*

*undergraduate and graduate teaching.*

**Public Policy 283b**

**Seminar: Information Resources and Public Policy**

Anthony G. Oettinger and Christopher C. DeMuth

An examination of recent public policy developments in the field of computer and information technology. Policies examined are property rights and information (patent, copyright, trade secret, and unfair competition laws); state and federal taxation of information property; Federal Communications Commission policies toward computers and information transmission; regulation of banking and electronic funds transfer; and constitutional rights of individual privacy. The emphasis of the course will be on the interrelationship between technology and policy; on how technological change forces adaptations in judicial, legislative, and administrative policies, and on how these policies in turn affect the nature of technological innovation and development. The course requires no prior knowledge of computers or information technology.

*Note:* Open to students in the Kennedy School, Law School, and other graduate programs of the University.

Half course (spring term). Tues., 2-4 p.m.

Students with questions should contact Warren Levey, 2L.

**Social Sciences 106: Knowledge and Power**

Anthony G. Oettinger

Uses and abuses of knowledge in the exercise of private and public power; generalist and specialist roles in marshalling and allocating the world's basic resources; information resources as a case in point. Critical examination of the usefulness of selected economic, political, legal and social theory and of some basics of science and technology in resolving struggles over television, newspaper, postal, telephone, computer and other information systems. Among the perennial issues considered: control over access to information, incidence of economic benefits and burdens, quality and cost of information goods and services, definition of industries and markets, nature and extent of government intervention.

*Note:* Term paper in lieu of final examination; extensive research expected of graduate students who elect this course. Prerequisite: Economics 10 or elementary calculus or equivalent.

Half course (fall term). M., W., 2-3:30. 3172 (VII, VIII)

**Freshman Seminar: Privacy and Need-to-Know**

Anthony G. Oettinger

Oettinger will supervise readings and research papers on the evolution of conflicts among individuals, corporations, and countries over demands for privacy versus the need to know. The seminar will examine critically (1) activities, from colonial gossip to modern intelligence operations; (2) means, ranging from news-men's peeking into President Cleveland's honeymoon cottage to electronic interceptions of messages sent by satellite from computer to computer; (3) policies, from Congress' arrest of the president of Western Union for refusing to turn over telegrams, to the Supreme Court's refusal to stop publication of the *Pentagon Papers*. An application to the seminar must include an analysis, no longer than one typed page, of the student's decision on waivers of the legal right to see recommendations supporting his or her applications to colleges.



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 **Arena: Postal Services**

The U.S. Mail is one of the oldest and largest civilian activities of the government. The Post Office not only established an integrated national system of information transfer, but also played a major role in promoting and subsidizing transportation, trade and commerce through its interest in post roads, railways and airlines.

The operation of the post has always been marked by political debate and economic competition. Questions about the nature of state activities have been continually raised. Should the post be a low-cost, wide-scale subsidized service? Or should it "pay its own way"? In most countries, a ministry of post, telegraph and telephone controls information transfer, but in the U.S. even the postal monopoly is often diluted.

In 1970, Congress reorganized the Post Office Department into the U.S. Postal Service. This transformation was intended to "depoliticize" the subject of postal services, but rising postage rates, mounting postal deficits and the closing of small-town post offices has effectively "repoliticized" the issue.

At present, the vitality of the Postal Service is seriously in question. More than half its package business has been taken over by United Parcel Service. Other private services are offering door-to-door delivery of magazines, circulars, catalogs and samples at a discount on postal rates. Electronic systems are offering growing competition to first class mail, with electronic funds transfer systems a particular threat.

Numerous proposals for overhauling the structure and financing of postal services have been made in recent years. Changes in postal policy are inevitable because postal services are part of a larger information industry that is undergoing rapid growth and significant change both in technology and public policy. The resolution of postal policy issues is of national importance because postal services are an important component of the country's economic infrastructure and because resolution of postal issues can foreshadow possibilities for other communications sectors where competition and government intervention are at issue.

### *Work under way in the arena*

The Program began expansion of its postal policy research in April 1977 with the appointment of an Executive Director for the Postal and Allied Arenas, John F. McLaughlin. He described the nature and importance of postal policy and a general research strategy in *Postal and Allied Arenas: A Research Plan*.

In October 1977 the Program issued a detailed work plan—*Research Task Specifications, Phase I: Arena Survey*—for its initial investigation of the postal system. Specific efforts already under way include:

- An analysis of competition between letter mail and voice telephone service
- An analysis of the policy implications of the survey of the household mailstream recently completed for the Postal Service
- Initial data collection on the nature, volume, and determinants of the flow of financial transactions

During the past year, the Program also has been successful in increasing the number of affiliates with interest and expertise in the postal field. Many of these affiliates are well-informed on the interrelationships between postal matters and policy decisions shaping the communications, media, and EFT arenas.

## **Arena: Communications**

### *Communications (computers-and-communications)*

The Program has coined the term *communications* for the emerging common technology for communications and computation. Institutionally it is divided between two feuding giants: the telephone industry led by AT&T, and the computer industry led by IBM.

Congress placed responsibility for communications policy with the Federal Communications Commission in 1934, but now that data processing and communicating have become almost indistinguishable, the FCC is in a quagmire. Its inquiry into the subject continues. Meanwhile, the Justice Department has entered antitrust suits against both AT&T and IBM. No clear national policy has emerged from the confusion over where regulatory responsibility lies.

Internationally, political borders are made fuzzier by the computer/communications frontier. Balkan Bulgarian Airlines, Malev Hungarian Airlines, and Lot Polish Airlines, among others, book local flights through a computer in Atlanta. An American-built satellite is broadcasting directly to villages in India. Whose information resources are these? Who controls them? With what means? In whose national interest?

The emergence of communications was an early focal point of the Program's interests. *High and Low Politics: Information Resources for the 80s*, a collection of Program papers on national and international problems in communications, was published in 1977 by Ballinger Publishing Co. of Cambridge, Mass. The volume includes three papers discussed below: Berman and Oettinger's "The Medium and the Telephone"; Berman's "Computers or Communications?"; and Read's assessment of the international communications arena, "Foreign Policy: High and Low Politics."



### **Before the U.S. Congress**

Program participants were asked to testify before the U.S. Congress on three occasions last year:

- March 23, 1977

Senate Committee on Commerce, Science and Transportation, Subcommittee on Communications. Hearings on Domestic Common Carriers. Testimony by: Anthony G. Oettinger and John C. LeGates. (This testimony was reprinted as an article in *Telecommunications Policy* in December 1977.)

- June 8, 1977

Senate Committee on Foreign Relations, Subcommittee on International Operations. Hearings to examine impact of International Media, Communications, and Information. Testimony by: Anthony G. Oettinger and John C. LeGates.

- June 24, 1977

House Committee on International Relations, Subcommittee on International Operations. Hearings on Reorganizing Public Diplomacy. Testimony by: John C. LeGates.

In the spring of 1977, the Congressional Office of Technology Assessment invited Tony Oettinger, John LeGates and Kurt Borchardt to participate in a three-month Working Group on Telecommunication, Computer and Information Policies. The Program has assisted in:

- Identifying and exploring issue areas
- Identifying stakeholders and their interests
- Organizing study strategies to conduct assessments

## **Arena: Communications – The United States**

### **The Communications Act's policy towards competition**

After years of treating telecommunications as a "natural" monopoly, the FCC has recently been encouraging competition for services. Hamilton Loeb has examined the text and the legislative history of the FCC's charter—the Communications Act of 1934—in an attempt to discover whether Congress intended to foreclose or encourage competition.

In a Program publication, *Communications Act Policy Towards Competition: A Failure to Communicate*, Loeb traces two contemporary interpretations of pertinent laws. The "orthodox view" grants the FCC broad discretion in determining the telecommunications market structure. The "new model," propounded by the established carriers and state regulators, holds that Communications Act provisions circumscribe FCC authority and contradict its procompetition policy.

Loeb concludes that the history and text of the Act give little guidance on this question. Congress has failed to address the problems of telecommunications enough to state an intelligible regulatory policy.

The article appeared in the 1978 issue of the *Duke Law Journal* and as the lead article in the *Federal Communications Law Journal*, Winter, 1977. Loeb is a graduate of Harvard Law School, and of the University of Virginia, and has worked as a news broadcaster and a Congressional legislative assistant. He is currently a law clerk to Chief Judge James Browning of the U.S. Court of Appeals for the Ninth Circuit.

**Long-distance rates: Who gets what?**

Long-distance telephone calls often use the facilities of several telephone companies. Costs and revenues are parceled out among them under complicated intercompany settlements and jurisdictional separations. Since long-distance service is one of the most potent sources of telephone revenues, these agreements are an important ingredient of telephone rate-setting.

How the procedure began, and how it evolved to its present state, is discussed by James W. Sichter, an executive of United Telecommunications, Inc., in his paper *Separations Procedures in the Telephone Industry: The Historical Origins of a Public Policy*.

The study was stimulated by the Program's reviewing process, when Sichter reviewed a draft of Berman and Oettinger's paper *The Medium and the Telephone*, found fault with their discussion of separations and settlements, and undertook some research of his own. The Program found his critique interesting, asked him to expand it, and issued it as a Program publication after it went through the reviewing process itself.

**Separations/settlements procedures in the telephone industry**

James Sichter's paper, *Separations Procedures in the Telephone Industry: The Historical Origins of a Public Policy*, traced the development of complicated intercompany settlements and jurisdictional separations procedures for the costs and revenues of interstate services. Warren Lavey has begun a project, involving several other Program researchers and affiliates, which explores current separations/settlement procedures from two perspectives. First, as an accounting formulation directed at the problem of joint costs and revenues; and second, as a legal approach to the regulatory problem of overlapping administrative jurisdiction.

A conceptual framework is being developed, to facilitate modeling of the complicated separations/settlements environment. The model investigates the relationships among revenues, costs, usage, tariffs, services, facilities, companies and jurisdictions. In the accounting perspective, the goal of the model is to quantify these relationships, in order to allow statistical analysis of the effects of separations procedures.

Analogous regulatory structures in the railroad industry and the U.S. Postal Service will be compared to the telephone situation in the second segment of the study. Furthermore, the ways in which competition by the interconnect companies and other common carriers impacts the regulatory structure of separations settlements proceedings will be addressed at length. Lavey has been assisted by Robert Godbey, who is a student at Harvard Law School, and by Daniel Berman and David Goldsberry, who are undergraduates at Harvard.

Lavey completed his combined bachelor's and master's degree program *summa cum laude* in June 1975. He continued his studies on a Rotary Foundation Fellowship at Cambridge University, England, receiving the diploma in economics. He also worked for the British Post Office, using macroeconomic data to estimate the size of the market for information services. Lavey is now in his third year at the Law School.

**Urban impacts of telephone separations/settlements policies**

Warren Lavey is researching some policy aspects of telephone separations/settlements procedures. Urban policies incorporated into these procedures and their concomitant impacts will be compared to explicit national urban policies formulated by the executive and legislative branches, and to other telecommunications decisions affecting the urban environment. A fellowship from the Joint Center for Urban Studies of M.I.T. and Harvard is supporting the project.

**Legal characteristics of computer technologies and applications**

Warren Lavey is also analyzing the legal characteristics of computer technologies and applications in five areas of law—taxation (federal and state), property rights (patents, copyrights, and trade secrets), banking (regulatory jurisdictions in bank data processing and electronic funds transfer systems), communications (regulatory jurisdictions in communications/computing and computer uses of communications systems), and constitutional rights (privacy and due process). Lavey is working with Professors Oettinger, Ginsburg, DeMuth, and Meyer on his analysis. The focus of the analysis concerns the interaction between legal categories, providing the basis for the taxation, regulation, and grants of rights in computer technologies and applications, and the structure of the computer industry and computer transactions. Policies, statutory language, interpretive rulings, and precedent are considered as a study of the legal process and technological change.

The analysis and materials assembled by this project will be used for Public Policy 283b in 1979.

**Evaluating communications performance**

In an effort to produce an overview of the communications world, Kurt Borchardt is guiding two related projects. The first is a "map" of the entire arena, illustrating components, their interrelationships, and the ways they resolve issues. This work has resulted in the working paper *Actors and Stakes: A Map of the Communications Arena*.

A broad spectrum of control mechanisms is currently in use in the U.S. and other societies to monitor and regulate communications players. On the one hand, various *adversary* organizations and procedures have evolved, from central planning and executive bodies, to unregulated open-market competition at the other extreme. Kurt Borchardt is outlining the criteria these mechanisms use to evaluate performance within the arena. *Non-adversary* institutions and processes affect policy-making as well. Borchardt is also exploring such alternative methods. Kurt Borchardt is a Program Research Fellow and Consultant. For over twenty-five years, he was legal counsel to the Committee on Interstate and Foreign Commerce of the U.S. House of Representatives. Borchardt's previous work for the Program resulted in his published paper *Towards a Theory of Legislative Compromise*.

***Developments in telecommunications policy***

William M. Capron delivered a talk on communications policy at the Aspen Institute Program on Communications and Society meeting at the Brookings Institute in Washington in the spring of 1976. *Comments on Telecommunications Policy Developments* has been reprinted as a Program working paper, in which Capron concludes that, "In short, there is no quick policy fix and no quick and easy organizational fix. Nor is there a neat 'technological' fix."

Capron is Associate Chairperson of Economics at Boston University. He was formerly a member of the Program's Executive and Policy Committee.

***Historical and legal research on recent developments in telephone regulations***

Recent developments in telephone regulation, in the context of the overall regulatory and competitive environment of communications industries, is the focus of a new project by Irwin C. Bupp, a professor at the Harvard Business School, Alan Jakimo, a student at Harvard Law School, and David Seipp. Approximately ten related case studies will be developed for use in an elective course at the Graduate School of Business Administration in the spring of 1979.

Preliminary plans envisage two studies of semiconductor/integrated circuit design and manufacture; two cases on computer design, manufacture, and marketing; one on "interconnect" equipment; and several on regulatory and manufacturing aspects of coming "smart" telephones.

***A policy agenda for communications***

In a Program working paper, *Performance, Politics and Policy in Computer/Communications*, Anthony G. Oettinger, the Program's Chairman, asks seven questions about future policy for communications, and sketches in the shapes of the answers:

- What shall be our policy aims for the 1980s and beyond?
- What is to be the scope of these policies?
- Who will decide what the aims and scope of policy should be?
- What are the limitations of present policy tools?
- What new policy tools and institutions might we need?
- What industry structures will be desirable?
- How can we best harmonize domestic and foreign policy tools?

The paper serves as a brief introduction to the Communications Arena.

***The medium and the telephone***

Paul Berman and Anthony Oettinger provide a cross-sectional overview of information policy making in a Program publication entitled *The Medium and the Telephone: The Politics of Information Resources*. This 164 page paper traces the factors that go into the provision of private-line services to broadcast networks and news organizations.

Study of news transmission leads inevitably to study of the American telephone system, dominated by AT&T. The report shows how the telephone system reached this central position, and how it operates within the framework of the FCC, state regulators and antitrust proceedings. Events of the past decades have radically increased system competition, not only in the long-distance transmission of information, but also by the influx of the computer industry. Technological change has made it more and more difficult to tell the inside of the telephone system from outside "attachments." This is the essence of communications.



*The medium and the telephone (continued)*

After presenting news dissemination as a case study, the authors address the possible directions that information policy issues may take in coming decades. Most of the important technical, legal and economic questions are touched upon, with emphasis on the domestic scene.

Excerpts from this paper appeared in the *Federal Communications Bar Journal*, Vol. 28, Nos. 2 and 3, 1975, under the title "Changing Functions and Facilities: The Politics of Information Resources."

Berman, who has been with the Program from its inception, graduated *magna cum laude* from Harvard College in computer science, and from Harvard Law School. In August 1975 he joined the law firm of Covington and Burling in Washington, D.C., but he continues to collaborate on Program research.

***The FCC at the computer/communications border***

In his paper *Computer or Communications? Allocation of Functions and the Role of the FCC*, Paul Berman studied the FCC's attempts to close the gap between policy and new communications technology.

In 1971, the FCC completed its first computer inquiry, and indicated where it thought the boundary should be drawn between computers and telecommunications. Or, more precisely, between regulated telecommunications and unregulated data processing. Warfare continues to flare up on this border.

Berman compared three borderline services: directory assistance, automatic location of callers through the "911" emergency number, and packet-switched computer-to-computer communications. From these examples, he isolated the legal and technological factors most salient to FCC and industry decisions, and the consequences for both of the available policy options.

Berman concluded that "the decision to employ the FCC's allocation mechanism need not have been made by the Commission, and indeed may not have been an appropriate decision for it to make" at all. In all likelihood, the decision will have to be made again by other policy makers, including Congress and the courts.

***Britannica yearbook report***

Peter D. Shapiro and Anthony G. Oettinger prepared a 5000-word feature article, *Understanding Information Industries in America*, for the 1975 *Britannica Book of the Year*.

This overview illustrates how the information industries are growing more rapidly than the Gross National Product, and becoming increasingly intertwined, and technologically indistinguishable. Two pressing public policy issues, privacy and access to information, and public control over media content, are described in detail, and other issues are listed.

The article has been reprinted and is available as a Program publication. Peter Shapiro is now a consultant at Arthur D. Little, Inc.

***Checkerboard patterns in the information industries***

The intertwined roles of different firms in the information industries are graphically presented in a Program working paper, *Information Industries: Patterns of Activities, Regulation and Sales*.

Four charts show the involvement of some forty firms in different markets of communications and computers, broadcasting, publishing, and other information-related services and products. The charts illustrate specific activities,

*Checkerboard patterns  
in the information industries  
(continued)*

rank by size and sales, and regulation by the FCC, but are still tentative. The Program solicits the attention of its reviewers to this project.

The work is directed by Carol Weinhaus, of the Program's staff. She was assisted by Lawrence Beyer, an undergraduate of Harvard College, and Irwin Hipsman, a work-study student from Antioch College.

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**Arena: Communications—  
Internationally**

**Communications and foreign  
policy**

The phenomenal advance and application of computer, communications and other information technologies is raising major foreign policy issues for the U.S. As the principal proponent of the free flow of information, and a technological leader, the U.S. may need to fabricate a renovated set of interlocking policies in order to continue in a prominent role.

Oswald Ganley will identify the most important national and international forces that bear upon critical economic, political, and security matters. A medium-term set of foreign policy options will emerge, as well as an indication of those areas most seriously in need of further study.

Ganley is a Research Associate in the John F. Kennedy School of Government. Until recently he was Deputy Assistant Secretary of State for Science and Technology, and Chairman of the National Security Council Task Force on Transborder Data Flow.

**Soviet interception of U.S.  
telecommunications**

According to news reports, the Soviets regularly intercept American private telecommunications, through equipment installed in Soviet diplomatic quarters. Strategic economic information, unclassified data on technical innovations, and investment plans are the targets of this economic espionage.

The Carter Administration has responded by creating an *ad hoc* committee to monitor government efforts to assist private sector data security measures. But numerous questions are raised. Shall Defense Department affiliates, such as the National Security Agency, be given significant responsibilities in the private, civilian sector? What about the compatibilities of security equipment, as devices proliferate in private companies? Will the government—the general taxpayer—assume the costs of security measures, or will the telecommunications consumer pay—through telephone bills—for what might be called part of our national defense?

Greg Lipscomb addresses these and other issues in his working paper *Private and Public Defenses Against Soviet Interception of U.S. Telecommunications: Problems and Policy Points*. Lipscomb has just completed the mid-career program at the JFK School of Government. He was formerly Deputy Director, California State Department of General Services, and California Deputy Attorney General.

***Rethinking international communications***

Just where does the United States stand with regard to the international communication of information? As the title of William H. Read's paper implies, it is time to start thinking anew about that question. He identifies a set of leading policy problems, "in which more is at stake than just the parochial interests of [communications] producers and suppliers." Three leading elements—satellites, news and know-how—are identified of what one might call "information relations."

To successfully manage these problems, he argues that "the time has come to free ourselves of old paradigms and to adopt the *concept of information as a basic resource*—a resource that is central to the conduct of international relations." In conclusion, the author stresses the need for innovative thinking by the makers of U.S. foreign policy. How innovative? They should be willing, Read says, to ask: "Are this country's *information relations* with the world getting better or getting worse?"

Read was a Research Fellow with the White House Office of Telecommunications Policy, and continues to collaborate with the Program as a Research Fellow.

***Progress and policy***

Changes in communications occur so rapidly that the quality of our lives is affected long before social and economic impacts are understood, and sensible public policies can be formed.

In a Program working paper, *Communications Policy: An Agenda*, William Read identifies and comments briefly on a set of issues which comprises a much needed communications policy agenda for the United States. His discussion of several agenda items, including international telecommunications, national security, and the more traditional areas of antitrust policy and industrial competition, leads him to conclude that "The overall record suggests that the issue of how the federal government should organize itself to make effective communications policy remains unresolved."

***A report to the Senate***

In a report commissioned by the U.S. Senate Committee on Foreign Relations, the Program asks: "Must there be an international 'crisis' to get the United States to act on information resources?" The documentation was presented to support Committee consideration of the concept that information resources are strategically both strengths and weaknesses for the U.S.

The paper cites current Pentagon concern over safeguarding U.S. strategic know-how, and the rising importance of the mass media and of banking to America's international relations. Yet, "Information resources are not yet treated as a strategic strength like energy reserves. Nor are the strategic weaknesses of the communications systems . . . adequately understood."

The report was prepared by William Read with John LeGates, Anthony Oettinger and Carol Weinhaus. It is available as a Program publication, *Foreign Policy Choices for the 1970's and 1980's: Information Resources—Strategic Strengths—Strategic Weaknesses*. In addition, in June 1977, Oettinger and LeGates testified before the Senate Foreign Relations Subcommittee on International Operations, chaired by Senator George McGovern. Also that month, LeGates testified before the House Subcommittee on International Operations, chaired by Representative Dante Fascell.

***The high and low politics of international communications***

How do cross-border computer communications interface with traditional concepts of international policy making? In *Foreign Policy: The High and Low Politics of Telecommunications*, William Read found that international data flows are part of new conditions that foster global interdependence. Transnational organizations derive added strength from information technologies, but at the same time produce strategic weaknesses.

While the nature of international communications has been revolutionized in recent years, the policy process remains essentially unchanged. Read questions the continuation of carrier domination, yet he sees unnecessary risks in the absence of transnationals from the policy making process.

It seems prudent, Read asserts, to reevaluate the way in which U.S. telecommunications foreign policy is formulated. And the time to begin is now.

***Warning: Radio spectrum crisis ahead***

The rich nations of the world are dependent upon their growing communications technology. But Third World nations now want their share of global information resources.

New rules allocating and regulating the use of the radio spectrum will be prepared at the World Administrative Radio Conference, to be held in Geneva in 1979 by the International Telecommunications Union. In *Coming: A Law of Communications Conference*, a Program working paper, William Read argues that the 1979 meetings are likely to be transformed by political conflict into a "law of communications" conference much like the "Law of the Sea" convocation.

Indeed, the Secretary General of the ITU, Mohamed Mili, has already stated that "The revision of the existing table of frequency allocations will be a positive contribution by the ITU to the introduction of a new international economic order."

Read discusses the resource value of the radio spectrum and the reasons for its emergence as a North-South issue, and predicts some likely outcomes of the 1979 radio meetings.

The paper was published in the 1977 fall issue of *International Lawyer*.

***Telecommunications in developing countries: Who gains? Who loses?***

Developing countries are investing heavily in modern communications systems, to facilitate national integration and speed the development of modern industry.

John Clippinger presents two exploratory studies in his Program working paper, *Who Gains by Communications Development?* In Algeria, Clippinger found that telecommunications development appeared to accentuate rural and urban differences and further the interests of an urban technocracy. Likewise in El Salvador, he reports, instructional television appeared to do more for the political base of the ruling party than it did for the students.

Clippinger has prepared a proposal to extend this study to other countries. The project will determine the interests helped or harmed by communications development, and analyze the technological, economic, political and cultural factors that most affect communications growth. The study's goal is more effective use of communications technologies in the advancement of Third World countries.

Clippinger is a Research Fellow with the Program and Vice President at Kalba Bowen Associates, Inc. He holds a Ph. D. in communication from the Annenberg School of Communication at the University of Pennsylvania, and a B.A. in anthropology from Yale University.



All information systems are becoming compatible with each other, including the public communications media—magazines, the press, publishing, cable TV, movies and broadcasting. Problems with the FCC may pale beside problems with making the First Amendment match up with modern information resources.

Both broadcasters and wire-press services are dependent on the telephone system for nationwide dissemination. Computer-controlled editing and typesetting are now commonplace. Movie and television production and distribution have moved in together. Cable television could be the beginning of a process that might put them all on the same telephone wires. As the case of cable illustrates, however, technological possibilities don't swing as much weight as institutional realities.

**State regulation of cable television**

Cable television is a political and regulatory issue in most of the fifty states. As of mid-1978, eleven states have enacted comprehensive regulatory statutes for cable TV, and others have such regulation under consideration. At least forty states have passed specific laws concerning pole attachments, taxation, and theft of service which affect the development of cable television. Others have left regulation to the FCC and local governments, while waiting for the dust to settle or some pattern to emerge at the state level. Recent FCC directions and Congressional reexamination of the Communications Act of 1934 suggest that the state role in cable television could change considerably in the next few years.

In February 1977, the Program received a grant from the National Science Foundation for an 18-month study—with Kalba Bowen Associates, Inc.—of the political dynamics, legal options, regulatory issues, and economic impacts of state government involvement in cable television. The implications of this research impact several other arenas, such as Postal Services, Communications and Electronic Funds Transfer Systems.

A series of research reports has been issued by the project, including:

- *The State Regulation Study: Research Design and Progress Report* is an outline by Konrad K. Kalba, president of Kalba Bowen Associates and project director, of the main purpose of the study: to assist state and federal legislators, regulators and others concerned with cable policy in assessing the merits and costs of state regulation and other forms of government involvement.
- In *Regulatory Politics: State Legislatures and the Cable Television Industry*, Konrad Kalba, Larry S. Levine, research associate, and Anne E. Birinyi, research assistant, propose that state-level regulation of cable has emerged as a political and legislative issue in several states. Five case studies illustrate how legislatures have responded to cable TV, and demonstrate the influence of strong personalities and bureaucratic politics on legislative decision making, the role of media exposure of industry "misbehavior," the impact of governors and study groups, the intervention of competing industry groups, and the ability of the cable industry and municipalities to withstand or shape state regulation.
- *The States Regulate Cable: A Legislative Analysis of Substantive Provisions*, by Philip R. Hochberg, senior legal analyst for the project and partner in the Washington firm of O'Connor and Hannan, examines cable regulatory

statutes in states with comprehensive regulation, and ones with regulatory authority at the local level. Specific provisions analyzed include those pertaining to the definition of cable television systems; the establishment of standards with regard to franchising, construction, ownership, etc.; the powers and duties of the regulating agency; and the treatment of line extension, pole attachments, educational uses of cable TV, and other special provisions.

- Larry Levine, Konrad Kalba, and Philip Hochberg look at the regulatory policies which have evolved from the day-to-day administration of the statutes and laws in *Taxation, Regionalization and Pole Attachments: A Comparison of State Cable TV Policies*. The tax environment in states which do and which do not have comprehensive regulatory programs is examined in the taxation study. Several methods of achieving regional objectives are discussed in the regionalization study, including regionalization by line extension, by the interconnection of cable systems, and by the consideration of regional factors during the franchising process. The pole attachments section traces the history of federal and state involvement in this issue, including the 1978 California pole attachments statute, and the implications of the '78 federal law. The report concludes with a reexamination of the three studies in light of several cross-cutting issues: the extent of administrative flexibility in each issue area; the convergence or divergence of state agency approaches to the issues; and the changing nature of state involvement in cable, given the recent shift from comprehensive regulation statutes to laws which address specific cable issues.
- Depending on the perspective, regulation of cable subscriber rates can be seen as a way to prevent the "gouging" of consumers by monopolistic business, or as evidence of overregulation by bureaucrats who know little about the market within which the cable industry operates. Larry Levine discusses the traditional concerns of each party in the rate regulation game, and gives an outline of specific issues which confront these players. *The Regulation of Cable Television Subscriber Rates by State Commissions* concentrates on the structure and methods of rate regulation currently being used or proposed by state agencies. The rate base rate-of-return method of regulation, as well as possible alternatives such as the common tariff procedure and "cost of living" adjustments, is assessed and compared.
- In a forthcoming report, tentatively titled *The Economic Consequences of State Cable Regulation*, Yale M. Braunstein, economic consultant to the project and assistant professor of economics at Brandeis University, Konrad Kalba, and Larry Levine present several econometric analyses of the effects of state cable regulation on service rates charged, penetration, and ownership patterns. A total sample of 653 cable systems was used to design models including age of the system, channel capacity, per capita income, and number of off-the-air signals received in the community. The results show that state regulation does not have a consistent effect on penetration, growth in penetration, or ownership patterns. Systems in regulating states, however, do tend to have higher rates than those in states without state regulation.
- Philip Hochberg is preparing a study, tentatively titled *The States and the FCC: Jurisdictional Relations in Cable Television Regulation*, which examines jurisdictional conflicts between the federal and state levels, the history of federal regulation, and case law affecting cable jurisdiction.
- A *Summary Report* is being prepared by Konrad Kalba, which will recapitulate the individual reports and provide an overview of state regulation of cable television. A section on legislative dynamics will focus on the major factors in determining whether regulation is enacted and, if so, in what form. A second part will amplify the statutory analysis by looking at several issues—defining cable TV, alternative provisions for regulatory agencies, etc.—and how

*State regulation of cable television (continued)*

the laws have been interpreted and implemented. The impact of state regulation on the cable industry and subscription rates, and the evolution of regulation of major stakeholders in cable (such as state legislators, state regulators, the FCC, the courts, etc.) will be assessed for potential conflict or consensus in the face of new policy or jurisdictional issues.

Included in the *Summary Report* is a *Chronology of Cable Television Regulation: 1947-1978* (also appearing as a separate paper) in which Anne Birinyi highlights the interplay of major events by cross-tabulation. Displayed are decisions of the federal and state legislatures, courts and regulatory agencies; advancements in the cable TV industry; and important position statements from stakeholders and study groups interested in cable.

**Local regulation of cable TV**

Cable television is regulated not only by the FCC and some states, but also by local governments. Abundant prescriptive literature for local regulators exists, but much less has been written about their behavior and policies.

In his Program publication *City Meets the Cable: A Case Study in Technological Innovation and Community Decision-Making*, Konrad Kalba addresses Cincinnati's decision to postpone wiring the city for cable TV. The report examines the nature and limitations of municipal control over technological innovations. Furthermore, it assesses cable development options in the context of federal and state regulatory policies, and decision-making at the municipal level.

Much of the information gathered in this project was used in Kalba's doctoral dissertation in City Planning at the University of Pennsylvania.

**CATV and common carriage**

In 1973, Paul Berman began studying jurisdictional issues in CATV at the request of the Massachusetts Community Antenna Television Commission. He continued the work in 1974-75 under the joint guidance of Donald Trautman, Professor of Law at the Law School, and the Program.

*CATV Leased Access Channels and the Federal Communications Commission: The Intractable Jurisdictional Question* traces the history of FCC jurisdiction over CATV systems, and suggests that the question of jurisdiction is as elusive today as it was fifteen years ago when the FCC and the courts first addressed it. Berman notes that leased-access channels serve the function of communications common carriage, and proposes that their regulation be considered in that light. This comparison leads to the conclusion that Congressional action on the jurisdictional issue is necessary.

The paper appeared in December 1975 in the *Notre Dame Lawyer*, Volume 51, No. 2.



### ***The FCC and broadcast innovations***

When the FCC was established, AM radio was the only broadcast medium. Since then, the Commission has taken on the regulation of VHF television, FM radio, UHF-TV, CATV, and pay television without any change in the law. Vincent Mosco has produced two studies of the FCC's absorption of these innovations.

The FCC treated each new service as ancillary to the form of broadcasting dominant at the time the innovation was introduced. Mosco argues that the urge to simplify a complex situation guided the FCC, rather than pressure from the industry and Congress, or from FCC policy goals.

The Program has published Mosco's doctoral thesis in sociology under the title, *The Regulation of Broadcasting in the United States: A Comparative Analysis*. Mosco has also written a separate publication, *Reforming Regulation*, which summarizes his findings in more accessible form, with particular reference to the making of future policy.

A new book based on Mosco's research, *The Regulation of Innovations in the Broadcasting Market* is to be published by Ablex Publishing Corporation of Norwood, New Jersey in late 1978.

Mosco was chairman of the sociology department at the University of Lowell and a Research Fellow of the Program. He was awarded a fellowship by the White House Office of Telecommunications Policy, and spent 1977-78 studying how policy for international telecommunications is made by the U.S. government. He currently is Associate Professor of Sociology at Georgetown University.

### ***Influencing FCC regulation***

Richard Berner has completed a study of the forces which shape the FCC's efforts to regulate cable TV. After isolating salient decisions in the history of cable regulation, Berner analyzed the "consensus agreement" reached by industry groups. He suggests that this "agreement" fostered a process in which "extra-agency groups were able to determine FCC outcomes by so structuring the Commission's options that their choice became that which . . . best served the combined interests of these extra-agency groups."

Yet at later stages, Berner concludes, intra-agency forces guide FCC decisions on implementing its own rules. The Cable Television Bureau, contrary to traditional views of administrative behavior, enforces its rulings with a sense of direction distinguishable from that of the Commission as a whole. By using its control over information and delegated responsibilities, the Bureau is able to structure the regulatory process so that it affirms the Bureau's own concept of what cable TV should be.

Berner's interest in the cable situation began in the spring of 1973 while he was working in the office of then FCC Commissioner Nicolas Johnson. A paper prepared for the Program that summer evolved into his *summa cum laude* senior thesis, *Constraints on the Regulatory Process: A Case Study of Regulation of Cable Television*. The thesis was revised and issued under Program auspices, and a later version was published in 1976 by Ballinger Publishing Co. of Cambridge. Berner is a graduate of Columbia University Law School and has just completed a year's clerkship with Judge Milton Pollack in the U.S. Court for the Southern District of New York.

**National Association  
of Broadcasters**

The National Association of Broadcasters asked the Program to help create a series of educational conferences to familiarize broadcasters with the internal and external forces that are shaping the evolution of their industry. The conference drew participants from broadcasting, government, and academia.

The Program was represented by **John LeGates**, **Bill Read**, and **Anthony Oettinger** at the NAB's planning meetings and informal follow-up discussions on the conferences.

**The logistics of local news**

How does the local paper get the right combination of information to the right customers at the right time?

In his Program publication, *Information Logistics: Local Distribution of Information*, **Wallace P. Wormley** treats the local newspaper as an information product in an unstable state. Its traditional subproducts, roles, and markets are all now under challenge.

Wormley first examines current favorable and unfavorable trends in the newspaper industry. Developments in electronics and physical distribution that may change the local delivery of information products are then surveyed.

Wormley holds a Ph. D. from Harvard in psychology, and a B.A. in psychology and physics from Howard University. His newspaper study was conducted during a joint appointment as Research Fellow for the Program and the Business School. He left the Program to join the Bond and Commercial Loan Department of the Prudential Insurance Company.

**Executive Perspective-  
Building Forum**

More than 20 media executives came to Cambridge in February 1977 to join with a dozen discussion leaders from Congress, the information industries, and the universities in the Executive Perspective-Building Forum, sponsored by the Program and the Nieman Foundation for Journalism.

The theme as announced was:

"Today, major political, legal, economic and technological factors are altering or eliminating the historic barrier among information industries and making new alternatives available to information users. What happens to one industry strongly affects not only all the others but also the public generally. These relationships are increasingly recognized, but little is known about their effects on either the industries or the public. Fresh approaches are needed to meet this new situation."

Several participants have already expressed interest in additional meetings, and two of them have already hired people to work full-time following avenues opened for them at the forum. One assigned an employee to the Program as a Visiting Affiliate for three months.

Participants in the forum included:

**Stanley Asimov**, Newsday, Inc.  
**John R. Bennett**, Transamerica Information Services  
**Kurt Borchardt**, Program on Information Resources Policy  
**David L. Bowen**, The Associated Press  
**Howard J. Brown**, Kenosha News  
**James E. Burgess**, Lee Enterprises, Inc.  
**Jack E. Chinn**, Canadian International Paper Company  
**Thomas C. Fichter**, American Newspaper Publishers Association  
**Larry Franklin**, Harte-Hanks Newspapers, Inc.

**Jerry W. Friedheim**, American Newspaper Publishers Association  
**Aristotle Gavvas**, Transamerica Information Services  
**Dean Gillette**, Bell Laboratories  
**Bill Gullledge**, Harte-Hanks Newspapers, Inc.  
**Leonard R. Harris**, The New York Times Company  
**John C. LeGates**, Program on Information Resources Policy  
**Anthony G. Oettinger**, Program on Information Resources Policy

**William H. Read**, Program on Information Resources Policy

**Lloyd G. Schermer**, Lee Enterprises, Inc.

**Otto A. Silha**, Minneapolis Star and Tribune Company

**Theodore L. Simis**, American Telephone and Telegraph Company

**C. W. Skarstedt**, Canadian International Paper Company

**John I. Taylor**, The Boston Globe

**James C. Thomson, Jr.**, Nieman Foundation for Journalism

**Peter Urbach**, National Technical Information Service

The discussion leaders were:

**William O. Baker**, Bell Laboratories

**Derek C. Bok**, Harvard University

**Lewis M. Branscomb**, IBM Corporation

**John T. Dunlop**, Harvard University

**J. T. Ellington, Jr.**, United States Postal Service

**Martin Ernst**, Arthur D. Little, Inc.

**William F. Kerby**, Dow Jones and Company, Inc.

**Maurice Lazarus**, Federated Department Stores, Inc.

**Aimee D. Leifer**, Harvard Graduate School of Education

**Herbert E. Marks**, Wilkinson, Cragun and Barker

**Gale W. McGee**, United States Senator

**Richard S. Rosenbloom**, Harvard Business School

**Jerome S. Rubin**, Mead Data Central

**Donald A. Thurston**, Berkshire Broadcasting Company, Inc.

**Alan F. Westin**, Columbia Law School

**Timothy E. Wirth**, United States Representative

***Merging media and the First  
Amendment***

The Common Carrier Bureau of the FCC may have more impact on the nation's news and entertainment media than the Nielsen ratings or the courts, but it is almost unknown and undiscussed by them. In an address to the Nieman Assembly-Nieman Fellows, press and broadcast executives, judges and lawyers-Anthony Oettinger introduced the Common Carrier Bureau and some other problems in information policy to some of the people who will have to work with them. His lightly edited speech has been reprinted as a Program working paper with the permission of *Nieman Reports*. It is titled *Merging Media and the First Amendment*.

**Arena: EFTS**

Money talks, and not only in terse proverbs. A substantial proportion of total information flow consists of financial transactions of one kind or another. More than one-third of all mail is checks, bills, purchase orders and the like. But the most rapid development in financial communications is in electronic fund transfer systems, which have generated public controversy. Electronic data processing and communications in the internal workings of banks and thrift institutions have grown to networks that are national or even global in scale.

Some of these financial applications have been compared with mailboxes or telephones by the U.S. Comptroller of the Currency. Does this mean they should come under the FCC? The Postal Service? Representatives of both organizations were named along with banking officials as members of the National Commission on Electronic Fund Transfers created by Act of Congress in October 1974. Many states have already enacted laws designed to regulate E.F.T. systems.

### ***Dialing for dollars***

FCC Commissioner Robert E. Lee, in his study *Dialing for Dollars*, considers the FCC's role in a proposed national E.F.T. system to be operated by the Federal Reserve Board. Lee notes the many resemblances of E.F.T. systems to communications common carriage, and to the "hybrid communications services" the FCC already regulates under rules established after its *Computer Inquiry*.

A national E.F.T. system will be an important resource to the financial systems with access to it. Who should that be? Bank members of the Federal Reserve System only? Savings and loan associations? Credit unions? How should users be charged? The FCC has already developed rules for assuring fair access to communications systems and for establishing rates, both for monopolies and competitive systems. They should be considered as models for E.F.T. regulation, Lee argues.

Lee also examines the issue of "foreign attachments" to the telephone system and E.F.T. systems. Any settlement on this topic will have an impact on the kinds of E.F.T. systems that can be adopted.

Research for Lee's paper was done by Daniel Prives, under the guidance of the Program. Prives was supervised by Sidney Goldman, then on Lee's staff and now with the White House Office of Telecommunications Policy. Lee served as the FCC's representative on the National Commission on E.F.T.

### ***The explosion of state laws covering E.F.T. systems***

Banking and financial institutions are regulated by both the states and the federal government. By January 1976 some 24 states had passed laws governing the operation of E.F.T. systems. Most of these laws were passed in 1975 after the Federal Home Loan Bank Board and the U.S. Comptroller of the Currency began encouraging savings and loan associations and banks to look to E.F.T. systems for their future operations.

Daniel Prives spent the summer of 1975 examining these laws. Most of them are primarily concerned with questions of bank cooperation in developing E.F.T. systems, and with fitting them into existing branch banking regulation.

The laws either permit or require banks to share in the development of the systems. There is confusion of purpose in these laws, though, as some states permit banks to share only terminal facilities, but other states permit or require shared switching facilities as well. This can have the effect of making a communications regulator out of the state banking commissioner, as most states have no other enforcement mechanism.

Provisions for rate-setting mechanisms, and for the involvement of non-financial institutions are vague or non-existent in most state laws, although both the Post Office and Western Union already offer explicit fund-transfer service. A lack of clear policy direction and an incomplete understanding of the technology involved created these problems. Most of the states reacted hastily to federal pressure and tried to fit E.F.T. into pre-existing state laws governing bank competition and cooperation.

The project report, *The Explosion of State Laws on E.F.T. Systems*, is available from the Program. A related article, "E.F.T. Systems and State Laws," appeared in *The Banking Law Journal* in May 1976.

Prives has completed the fourth year of a program leading to a combined degree in law and business administration at Harvard, and has joined the Insurance Company of North America.



**Branch banking, E.F.T.  
and the courts**

The "oldest" of the E.F.T. issues is how to accommodate E.F.T. developments to the laws mapping out the turfs of various financial and non-financial institutions. For the most part, these accommodations have been made by the courts, rather than by legislative or executive action.

In his Program publication *E.F.T. Policy and Competitive Equality: The Roles of Court and Congress*, Daniel Prives examines recent decisions by the Supreme Court. It ruled that certain E.F.T. systems fall within the regulation of the federal McFadden Act, which places national banks under the branch-banking restrictions of the laws of their home states.

Through an in-depth analysis of the legal precedents and of the legislative history of the Act, Prives demonstrates that in two leading cases of the 1960s, the Supreme Court created a "policy of competitive equality" between state and national banks. The Court's creation bears little resemblance to the policy found in its previous decisions on national banks, or to the legislative intent of Congress. The absence of a national policy on service competition in banking led the Supreme Court to create a policy.

Prives suggests that this procession of events illuminates the limitations of the courts in resolving E.F.T. systems into industry boundaries, or assessing the impact of their rulings on non-financial institutions or on the public at large. For these reasons, Prives suggests that Congress might want to re-examine the issues raised in the E.F.T. cases.

This paper was submitted to the National Commission on E.F.T. in conjunction with oral testimony by Prives in October 1976.

**Arena: Miscellaneous**

**The process of legislative  
compromise**

Some legislative compromises seem to endanger cherished principles, while others seem purely cosmetic. Public policy compromises relying partly on competition and partly on regulation are often faulted by those who prefer exclusive reliance on one or the other. Kurt Borchardt unveils this subtle art in *Towards a Theory of Legislative Compromise*.

Borchardt argues that compromise is an essential tool, except in those rare instances where polarized positions command overwhelming public support. Regardless of the subject being legislated, interactions among three factors determine the chances of passage. These are the individual "style" of the legislators who play leadership roles, the institutional setting, and the subjective assessments of the issues made by these legislators.

In order to enhance chances of passage, legislators seek to avoid sharp, polarized issues and search for subtly shaded information in order to reduce issue "voltage." Sometimes it is possible to lower the voltage of issues through imaginative use of legislative skills. While the issue of *federal aid* to schools of public health was sharply divisive when introduced in Congress in 1946, a bill reimbursing the schools for expenses incurred in connection with Federal training programs of public health personnel passed easily. The paper cites numerous other examples.



***The right to privacy in American history***

David J. Scipp examined the origins of the legal concept of a right to privacy in late 19th century America. In this period, a broad-based demand for the regulation of government and business information activities arose in the name of a right to personal privacy. Public policy processes pitted privacy against such older competing values as effective law enforcement, equitable social services, and freedom of expression.

The legal formulations of the era survive in the statutes and precedents now being applied to electronic surveillance, computerized information systems and modern mass communications. More importantly, the conflicting value systems remain, and the way they were initially balanced can inform current policy debate on privacy.

Scipp's report concentrates on three areas of conflict and the resulting balances of interests:

- Legal battles over the sanctity of person-to-person communications
- Opposition to more extensive census questions, which led to a government promise of confidentiality
- Lawsuits attacking the yellow press for invasion of privacy, in which the courts awarded damages

Scipp graduated from Harvard College *summa cum laude* in history in 1977. He is currently studying law at Oxford and plans to return to the Program and Harvard Law School.

***Privacy and the regulation of information systems***

David Scipp has compiled a status report and bibliography on the regulation of information systems handling personal data. It is addressed to owners, users, and subjects of such systems. Areas included are the census and social science research, arrest records and surveillance, IRS investigations and disclosure of tax returns, medical records and physician privacy, personnel files, mailing lists, and school records. Particular attention is given to federal legislation: the Freedom of Information Act, the Privacy Act of 1974, the Fair Credit Reporting Act of 1970, the Bank Secrecy Act of 1970, the Buckley Amendment to the Family Educational Rights and Privacy Act of 1974, as well as other relevant federal statutes and state laws.

The positions of organizations supporting or opposing regulation in these areas are presented, in addition to pertinent court decisions, hearings, and recommendations. The report closes with a bibliography of more than 1000 items.

**How do organizations learn?  
The role of MIS**

Organizations learn the way people do, by gathering and absorbing new information about themselves and their surroundings. Management Information Systems (MIS) are devised to help them learn, but research by Chris Argyris suggests that the "official" MIS must recognize the hidden contradictions and wrong-footed learning processes embedded in the organization in order to be effective.

In *Organizational Learning and Effective Management Information Systems: A Prospectus for Research*, a Program paper published in May 1976, Argyris concentrates on the sources of error in MIS. He gives three objectives for his research program:

- To develop a diagnostic technique to determine how MIS could be effective in an organization
- To find out why MIS disappoint their creators or users
- To design new MIS that can overcome counterproductive forces and raise the level of managerial effectiveness

Argyris is James Bryant Conant Professor of Education and Professor of Organizational Behavior at the Schools of Education and Business respectively, and a member of the Program's Executive Committee. Earlier work resulted in his book *Theory in Practice*.

A revised version of his working paper was published in 1977 in *Accounting, Organization, and Society*, a quarterly published by Pergamon Press, Ltd., Oxford, England.

**Information issues in  
education**

Quite different processes determine content of educational broadcasts, textbooks, and computer-assisted instruction. The commercial, legal, financial, and regulatory frameworks of these educational media differ considerably, as do the relationships among participants in the flow of information from creator to user. Patterns of social control of information usage are strikingly dissimilar.

What changes may we expect in the relative use of these media, and how are these changes likely to affect control over learning? What are the likely consequences of this situation for which learners? For which industries?

Paul DiMaggio and Nikki Zapol examined the processes by which books, broadcasts and CAI materials are brought into educational settings, and how differences in decision-making patterns in these media are reflected in the substance transmitted to learners. Preliminary findings in this area are presented in a Program working paper, *Information Technologies and Control Over Learning*. Also included is a reprinted essay describing education in private industry, where CAI has flourished, compared to its general flop in public education.

DiMaggio is a graduate student in sociology, and was co-chairperson of the *Harvard Educational Review*. Zapol was one of the first members of the Program staff, and has worked as a consultant to the Academy for Educational Development. She completed the J.D. degree at Harvard Law School in June 1977.

***Libraries and information policy***

Information resources abound in America. The choice between private and public instruments is not crucial in deciding how unique information resources are best exploited, and how the conflicting ideals of equal opportunity and of local or private decision-making are accommodated.

At issue is whether growth in information services should and can be sustained, and how costs might be controlled. Anthony Octtinger examined this area under a Program contract with the National Commission on Libraries and Information Science. The resulting report, *Elements of Information Resources Policy: Library and Other Information Services*, first issued in February 1975, looks at relationships among private sector information providers and their library clients in order to underscore the economic, institutional and technological factors that are critical in deciding how people get the information they need.

A considerable amount of data is assembled, including 78 figures. The findings point to issues that are complex and persistent, and to a public that has benefited unevenly from both private and public information services that have failed to take into account the full spectrum of demands and constraints.

In July 1977, John C. LeGates, the Program's Director, helped the Minneapolis Public Library and Information Center design a workshop on information resources for its staff.

***The economics of technology***

Technology is frequently blamed as the source of many social problems, or attacked for the failure to ameliorate them. In *The Economics of Technology*, issued as a Program working paper, Montgomery Phister, Jr., argues that in general the problems arise because of changes in the production, distribution, and consumption of technology's goods and services. He calls these matters the substance of the economics of technology, and proposes that faculties of engineering and science should add courses in and devote research to this complex and fascinating subject. He describes a prototype study and a university course on a portion of the general topic, the economics of data processing technology.

In December 1976, Phister's book, *Data Processing Technology and Economics*, was published by the Santa Monica Publishing Co., Santa Monica, Ca.

***A rough census of the information industries***

Warren Lavey has made a rough census of the information/communication industries, with preliminary attempts at comparisons in size. Lavey's full report has been issued as a Program publication under the title *Toward a Quantification of the Information/Communications Industries*.

Carol Weinhaus has continued the collection of this data, extending it into time series and developing descriptions of additional industries. Weinhaus was assisted by Lawrence Beyer and Irwin Hipsman. This work is available to the Program's researchers, but has not been published.

***Transportation,  
communications and  
headquarters location***

Warren Lavey has broken new ground in using Dun's Market Identifiers, an extensive Dun & Bradstreet computer database, to measure *empirically* how much considerations of transportation and communications influence decisions on where to locate corporate headquarters in manufacturing firms with a number of plants. His findings confirm that physical closeness to the largest plant within a firm and to the headquarters of other firms are highly significant factors in selecting a headquarters site. How much physical closeness can be traded for closeness achieved through telecommunications is still a matter for investigation.

Lavey's paper, *Transportation/Communication Considerations in the Location of Headquarters for Multi-Establishment Manufacturing Firms*, grew out of discussions in the graduate seminar *Public Policy 283b, Information Technologies and Public Policy*, in the spring of 1974. Under the supervision of Professors Robert A. Leone and John R. Meyer of the Business School, it continued that summer at the National Bureau of Economic Research, where Meyer was president.

***Bibliographic tools***

Carol Weinhaus has edited contributions by many Program participants and colleagues in other organizations into the working paper *Bibliographic Tools*, first issued in January 1974, and updated in February 1976.

The current edition is in two volumes. Volume 1 has four sections: a reference guide, an annotated bibliography, a guide to background articles on science and technology, and a guide to audiotapes and videotapes. Volume 2, subtitled *Legislative Guide*, contains guides to federal agencies and departments.

Sections are also reprinted from Don R. Le Duc (University of Wisconsin, Madison), "Inside the FCC: A Guide for Information Seekers," and from Le Duc and Erwin Krasnow (Kirkland, Ellis and Rowe, Washington, D.C.), "Broadcast Legal Documentation: A Four-Dimensional Guide."

This document has proved valuable as a research tool and as an aid to students in Program-affiliated courses. Copies have been requested by several organizations outside the University.

A small, specialized Program library, comprising government documents, specialized reports not published conventionally, and other fugitive materials, is directed by Weinhaus, with the assistance of Laura Brody and Louise Epstein.



The Program teaches undergraduates and graduate students at Harvard and provides text materials used in schools, industry and government. Our teaching is a fundamental part of the Program's work, both in aiding research and disseminating research results.

Undergraduates in Harvard College and graduate students in the Schools of Arts and Sciences, Business, Government and Law have requested advice and guidance from the Program. Some have sought help on a particular project, others have formally included information resources policy in their study plans. Among the latter, Charles Benda, Paul Berman, Richard Berner, Larry Beyer, Charles Brackbill, Paul DiMaggio, Gordon Imrie, Arlene Karlin, Warren Lavey, Greg Lipscomb, Hamilton Loeb, Vincent Mosco, Daniel Prives, David Seipp, Marshall Thomsen, Wallace Wormley, and Nikki Zapol are contributors to Program research. Berman, Berner, Beyer, Karlin, Lavey, Prives, and Seipp were undergraduates at the time they joined the Program.

Three courses (page 14) are closely associated with the Program in both subject matter and participating faculty. One is a graduate seminar in the Public Policy Program of the Kennedy School of Government. The second, primarily for undergraduates, is offered as a General Education course through the Faculty of Arts and Sciences. The third is a freshman seminar.

In addition to these courses, Program researchers, board members and reviewers are using our research and materials in a dozen or more courses not formally connected to the Program.

Cross-fertilization between teaching and research is encouraged. For example, Carol Weinhaus assisted in an earlier course, *Communication in Societies*, by taking charge of video facilities and supervising students in video experiments. She collaborates in instructing the students in research techniques and in coordinating the mechanics of both current courses. Paul Berman and Daniel Prives became interested in research in information policy as students in *Communication in Societies* and later, along with Nikki Zapol, served as Teaching Assistants and as Research Fellows. Warren Lavey, David Seipp, and Daniel Prives were among Teaching Assistants for *Information Resources and Public Policy*.

Interest in the Program coincides with a general rise of interest in the area of science, technology and public policy. Many students are now seeking degrees with special concentrations in this area. To aid in advising students, the Program maintains a listing of related courses throughout the University and

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*Teaching (continued)*

refers students to faculty members who can help them with independent study in specialized areas.

The Program has sold numerous copies of its publications for use in universities, industry and government. *The Regulation of Broadcasting in the United States* by Vincent Mosco was cited as "especially useful" for the preparation of *Option Papers* issued in April 1977 by the U.S. House Subcommittee on Communications. Ballinger Publishing Co. has published two commercial books based on Program publications, *Constraints on the Regulatory Process: A Case Study of Regulation of Cable Television* by Richard Berner and *High and Low Politics: Information Resources for the 80s* by Anthony G. Oettinger, Paul J. Berman and William H. Read.

The Program's teaching is not confined to books or the classroom. Other teaching modes include oral presentations by Program staff at other universities, Congressional testimony, the Faculty Seminars and other exchanges with industry and government people and special workshops such as the Executive Perspective-Building Forum described in Section 4.

# Seminars and Research Presentations

## Seminars

### 1977

- *The Nature of Federal Regulation of the Domestic Steel Industry.* Roy A. Nierenberg, Assistant General Counsel, Council on Wage and Price Stability. 10/3/77
- *The Need for Rational Terms of Trade.* Donald R. Hollis, Vice President, The Chase Manhattan Bank. 10/24/77
- *Modern Intelligence and Information.* William E. Colby, Colby, Miller and Hanes, former Director of the Central Intelligence Agency. 10/31/77
- *Market Characteristics of the U.S. Mail.* Robert H. Cohen, General Manager, Mail Classification Research Division, United States Postal Service. 11/14/77
- *Regulation at the Middle Tier: Cable Television in the States.* Kas Kalba, Yale Braunstein, Philip R. Hochberg, and Larry Levine, Kalba Bowen Associates, Inc. 11/21/77
- *Communications and Computers in the People's Republic of China.* Paul E. Green, Jr., Staff Member, IBM Research Division. 12/12/77

### 1978

- *Views from the Public and Private Sector of Cable Regulations and Other Things.* Lynn Wickwire, President, The Acton Corporation. 2/27/78
- *Information Policy Development in the Carter Administration.* Richard M. Neustadt, Assistant Director, Domestic Policy Staff, The White House. 3/6/78
- *Computer to Computer Communications: New International Issues.* Oswald H. Ganley, Deputy Assistant Secretary for Advanced and Applied Technology Affairs, Department of State, Bureau of Oceans and International Environmental and Scientific Affairs. 3/13/78
- *TV Cable's Washington Connection.* Daniel Aaron, Chairman, National Cable Television Association, Vice President of Comcast. 3/20/78
- *A Perspective from Industry: The Development of an Export Policy for Militarily Significant Technology.* Charles Phipps, Assistant Vice President, Texas Instruments, Inc. 4/3/78

- *Databanks and Information Services: Public or Private.* Andrew A. Aines, Senior Staff Associate, National Science Foundation (former Commissioner on National Commission on Libraries and Information Science) and Jerome S. Rubin, President, Mead Data Central. 4/10/78
- *The Restructuring of the Telecommunications Industry.* Walter Gorkiewicz, Director of Technology Research and Victor Schnee, President, Probe Research, Inc. 4/17/78
- *Commercial Mailers: What They Expect of a Postal Service—A Canadian Assessment.* R. R. Evans, Director, Marketing Services, Canada Post. 4/24/78
- *The Dilemma of Telecommunications Policy.* Leland Schmidt, Assistant Vice President, Rates & Tariffs, GTE Services Corp., chairman of the telecommunications industry's Telecommunications Policy Task Force. 5/1/78
- *U.S. Postal Service Plans for Electronic Message Services (EMS).* John J. Wise, Assistant Postmaster General, Research and Development, and Edward E. Horgan, Executive Assistant to the Postmaster General, United States Postal Service. 5/8/78
- *A Case Study in "Foreign Attachments."* Thomas McCraw, Professor, Harvard Business School, and Gale Merseth, Doctoral Candidate, Harvard Business School. 5/15/78

## ● Presentations

### **Program Staff**

- July 8, 1977 Workshop on Information Resources Policy, held for the House Committee on Administration, Congressmen Edward Pattison, Charlie Rose and Dave Stockman; staff members Boyd Alexander, Owen Goldfarb and Neal Gregory, at Harvard University, Cambridge, Massachusetts.
- January 25, 1978 Presentation, "Information Resources in the Year 2000," Cambridge Forum, First Parish Church, Cambridge. Broadcast by WGBH, Boston, Massachusetts.
- March 7, 1978 Workshop on Information Resources Policy, held for Richard Harden and Edward Zimmerman of the Executive Office of the President, at Harvard University, Cambridge, Massachusetts.
- June 2, 1978 Workshop on Information Resources Policy, held for John Spiegel and Jean Bailly of the Department of State, at Harvard University, Cambridge, Massachusetts.

### **Konrad K. Kalba**

- September 29, 1977 Hearings on Cable Television Regulatory Policy, House Committee on Interstate and Foreign Commerce, Subcommittee on Communications, Washington, D.C.
- October 3-8, 1977 Presentation, "Communities as if Cities Didn't Matter: The Impact of Information Technologies," 1977 Itasca Seminar on the Value of Urban Life: Cities as if People Matter, Itasca, Minnesota.
- January 19, 1978 Presentation, "Video Discs: Will There Be an Educational Market?" Seminar on New Technological Opportunities in Education, National Institute of Education, Washington, D.C.



*Konrad K. Kaiba (continued)*

- May 11, 1978 Presentation, "Policy Implications of Electronic Message Systems," Sixth Annual Telecommunications Policy Research Conference, Airlie, Virginia.
- May 11, 1978 Presentation with Yale Braunstein, "Economic Effects of State Regulation of Cable Television," Sixth Annual Telecommunications Policy Research Conference, Airlie, Virginia.

**John C. LeGates**

- July 13, 1977 Planning Conference, Minnesota Chapter, American Society for Information Science, St. Paul, Minnesota.
- September 22, 1977 Presentation, Annual Station Managers' Seminar, Outlet Company, Hilton Head, South Carolina.
- December 2, 1977 Workshop on Information Resources Policy, held for Wayne Granquist and Walter Haase of the Office of Management and Budget, American Society of Public Administration, National Capital Area Chapter, Washington, D.C.
- January 17, 1978 Presentation, "Information Resources: Issues in the 80's," Rand Corporation, Santa Monica, California.

**Larry S. Levine**

- May 30, 1978 Presentation, "The Regulation of Cable Television Subscriber Rates," Seminar on State Regulation of Cable Television Subscriber Rates, National Association of Regulatory Utility Commissioners, Hartford, Connecticut.

**John F. McLaughlin**

- May 23, 1977 Panelist, session on "Electronic Message Systems," *Postal World Seminar on Alternative Delivery Systems*, Washington, D.C.
- September 22, 1977 Presentation, Annual Station Managers' Seminar, Outlet Company, Hilton Head, South Carolina.
- March 15, 1978 Presentation, Newspaper Division meeting, Lee Enterprises, Minneapolis, Minnesota.
- April 20, 1978 Interview on Postal Labor Negotiations, National Public Radio's "All Things Considered," Washington, D.C.
- May 24, 1978 Participant, Aspen Institute's Consultative Workshop on The Future of the Postal Service, Washington, D.C.

**Anthony G. Ottinger**

- July 11, 1977 Presentation, New England Cable Television Association, Wentworth-by-the-Sea, New Hampshire.
- August 14-September 3, 1977 Lecturer, *Social and Economic Problems of Post-Industrial Society*, Salzburg Seminar in American Studies, Salzburg, Austria.
- September 8, 1977 Presentation, ITT Research Council, Bolton, Massachusetts.
- September 16, 1977 Presentation, Communications Management meeting, Harte-Hanks Communications, Jacksonville, Florida.
- October 24, 1977 Presentation, "Privacy and Needs to Know-The Electronics Revolution and Public Policy," Society of Harvard Engineers & Scien-

tists, Harvard Applied Science Lecture Series, Harvard University, Cambridge, Massachusetts.

- **November 7, 1977** Presentation, "Critical Issues and Priorities in U.S. Information Resources," Council on Foreign Relations, New York, New York.
- **December 6, 1977** Presentation, "An Information Resources Policy for the United States," National War College course on Communications, Information and the U.S., Washington, D.C.
- **January 17, 1978** Presentation, "Information Resources: Issues in the 80's," Rand Corporation, Santa Monica, California.
- **January 30-31, 1978** Presentation, "The Impact of Current Trends in Computer/Communication Technology," session on "Economic and Political Impacts of the Computer/Telecommunications Revolution," Metrek Executive Seminar, Lancaster, Pennsylvania.
- **March 15, 1978** Presentation, Newspaper Division meeting, Lee Enterprises, Minneapolis, Minnesota.
- **April 12, 1978** Panelist, session on "End Consumer Electronic Services," ITT World Wide Technical Directors' Conference, Key Biscayne, Florida.
- **April 19, 1978** Presentation, "Future of Newspapers," Arthur D. Little, Inc., Cambridge, Massachusetts.
- **April 28, 1978** Presentation, "What the New Communications Technologies (Cable, Video, Discs, Mailgrams, etc.) Mean for Advertising Media and Government," Annual Meeting, American Association of Advertising Agencies, Phoenix, Arizona.
- **May 12, 1978** Panelist, session on "Information Activity and the Role of Government," Sixth Annual Telecommunications Policy Research Conference, Airlie, Virginia.
- **May 25, 1978** Presentation, "Communicating Tomorrow: Can the System Find a Solution?" New England Telephone & Telegraph Company, Perspectives '78, Boston, Massachusetts.
- **June 5, 1978** Presentation, informal symposium on "Natural Sciences at Harvard," 25th Reunion Class, Harvard University, Cambridge, Massachusetts.

***William H. Read***

- **September 13, 1977** Presentation, "Technology and Information Resources Policy," National War College course on Communications, Information and the U.S., Washington, D.C.
- **November 22, 1977** Presentation, "Mass Communications in North/South International Relations," North/South International Relations Seminar, Center for International Affairs, Harvard University, Cambridge, Massachusetts.
- **May 11-12, 1978** Chairman of session on "World Administrative Radio Conference," Sixth Annual Telecommunications Policy Research Conference, Airlie, Virginia.

***Richard Solomon***

- **May 11, 1978** Panelist, session on "Network Technology Services," Sixth Annual Telecommunications Policy Research Conference, Airlie, Virginia.
- **May 16, 1978** Presentation, "Trans-National Data Barriers," Conference on Trans-National Data Flows, Information Gatekeepers, Inc., Rosslyn, Virginia.

- Argyris, Chris "Double Loop Learning in Organizations," *Harvard Business Review*, September–October, 1977.
- Clippinger, John "Can Communications Development Benefit the Third World?" *Telecommunications Policy*, Vol. 1, No. 4, September 1977.
- Review of "Low Cost Data and Text Communication for the Less Developed Countries" by Ithiel de Sola Pool, *Telecommunications Policy*, Vol. 1, No. 3, June 1977.
- Kalba, Kas "Libraries in the Information Market Place," *Libraries in Post Industrial Society*, ed. Leigh Estabrook, Oryx Press, Phoenix, Arizona, 1976.
- Loeb, Hamilton "Communications Act Policy Towards Competition: A Failure to Communicate," *Federal Communications Law Journal*, Vol. 30, No. 1, Winter 1977, abbreviated version.
- "Communications Act Policy Towards Competition: A Failure to Communicate," *Duke Law Journal*, 1978.
- Oettinger, Anthony G. and LeGates, John "Communications: A Policy Agenda," *Telecommunications Policy*, Vol. 1, No. 5, December 1977.
- Read, William H. "Coming: A Law of Communications Conference," *International Lawyer*, Vol. 11, No. 4, Fall 1977.
- Solomon, Richard "Consumer Communications Reform Act of 1976—A Case of Deja Vu," *Telecommunications Policy*, Vol. 1, No. 4, September 1977.
- "The Encryption Controversy," *Mini-Micro Systems*, Vol. 11, No. 2, February 1978.
- "Packet Networks," *Mini-Micro Systems*, Vol. 11, No. 3, March 1978.
- "What Happened After Bell Spilled the Acid?" *Telecommunications Policy*, Vol. 2, No. 3, June 1978.
- Solomon, Richard and Pool, Ithiel de Sola. *Transborder Data Flows: Requirements for International Cooperation*, report for the Organization of Economic Cooperation and Development, Research Program on Communications Policy, MIT Center for International Studies, Cambridge, Massachusetts, July 1978.

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## Reviewers

The Program deeply appreciates the time and thought these people gave to reviewing our plans, projects and publications. Reviewing is an essential part of the Program's research and dissemination process. Reviewers are asked to press their views as strongly as they wish, but final responsibility rests with the project directors and the Program.

Lyle Abbott	William Ditch	Charles Guy
Malcolm Andrews	Les Dryden	Walter Haase
Chris Argyris	Paul Duzendorf	Glenn Hanna
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C. Lynn Wickwire  
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Barry Zorthian



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**Anthony G. Oettinger**  
Chairman

Anthony G. Oettinger, Chairman of the Harvard Program on Information Resources Policy, is Gordon McKay Professor of Applied Mathematics, Professor of Information Resources Policy and a member of the Faculty of Government at Harvard University.

He is chairman of the CATV Commission of the Commonwealth of Massachusetts, and was a consultant to the Executive Office of the President of the United States through the National Security Council from 1975 to 1977, and the Office of Science and Technology from 1961 to 1973.

He is a member of the Research Advisory Board of the Committee for Economic Development and was an advisor to the CED subcommittee that prepared the report *Broadcasting and Cable Television: Policies for Diversity and Change*, issued by CED in April 1975. Since 1956, he has served as a consultant to Arthur D. Little, Inc., on the uses of information technologies in many industries; he served as a principal consultant to the team that prepared *The Consequences of Electronic Funds Transfer—A Technology Assessment of Movement Toward a Less Cash/Less Check Society*, a report for the National Science Foundation published by the Government Printing Office in June 1975.

From 1966 to 1968, he was president of the Association for Computing Machinery. He is a member of the Council on Foreign Relations and of the Command, Control, Communications and Intelligence panel of the Naval Research Advisory Committee. He is a Fellow of the American Academy of Arts and Sciences, the American Association for the Advancement of Science and the Institute of Electrical and Electronic Engineers.

As chairman of the Computer Science and Engineering Board of the National Academy of Sciences (1967-73), he led the preparation of NAS reports on *A Technical Analysis of the Common Carrier/User Interconnections Area* (Lewis S. Billig, Project Director), *Databanks in a Free Society: Computers, Record Keeping and Privacy* (Alan F. Westin, Project Director) and on *Libraries and Information Technology—A National System Challenge* (Ronald L. Wigington, Project Director). He is the author of *Automatic Language Translation: Lexical and Technical Aspects*, of *Run, Computer, Run: The Mythology of Educational Innovation* and of numerous papers on the uses of information technologies. His most recent book, with Paul Berman and William Read, is *High and Low Politics: Information Resources for the '80's*, published by Ballinger Press in 1977.

**John C. LeGates**  
Director

John C. LeGates is Director of the Program and has served as lecturer in Information Resources Policy. His experience prior to joining the Program has been in the business community, developing and managing computer and communications systems.

At EDUCOM, he was the executive director of the Educational Information Network (EIN) and the author of several articles on computing networking. Earlier, as Vice President of Cambridge Information Systems, Inc., he was director of the technical staff, and responsible for the company's nationwide marketing efforts. He also directed the development of the Massachusetts General Hospital Integrated Information System.

At Computer Advisory Services to Education Inc., Mr. LeGates was vice president and director. At Bolt, Beranek and Newman, Inc., he was responsible for exploring the potential of the TELCOMP language in education.

His studies were in mathematics (Harvard) and philosophy (Yale).

**John McLaughlin**  
Executive Director / Postal and Allied Arenas

John McLaughlin is the Program's Executive Director for Postal and Allied Arenas. Previously, he spent sixteen years with the Federal government, first with the Federal Aviation Agency's Research and Development Service and then more than twelve years at the Headquarters of the Post Office Department and the Postal Service. During his last four years with USPS, Mr. McLaughlin was the Director of Strategic Planning. In that role, he also served as director of the task force that prepared the USPS Staff Study, *Necessity for Change*, and he was the principal author of that report.

He has a bachelor's in History from Princeton University and studied at M.I.T. as a Presidential Fellow in Systems Analysis.

**Policy Committee**

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