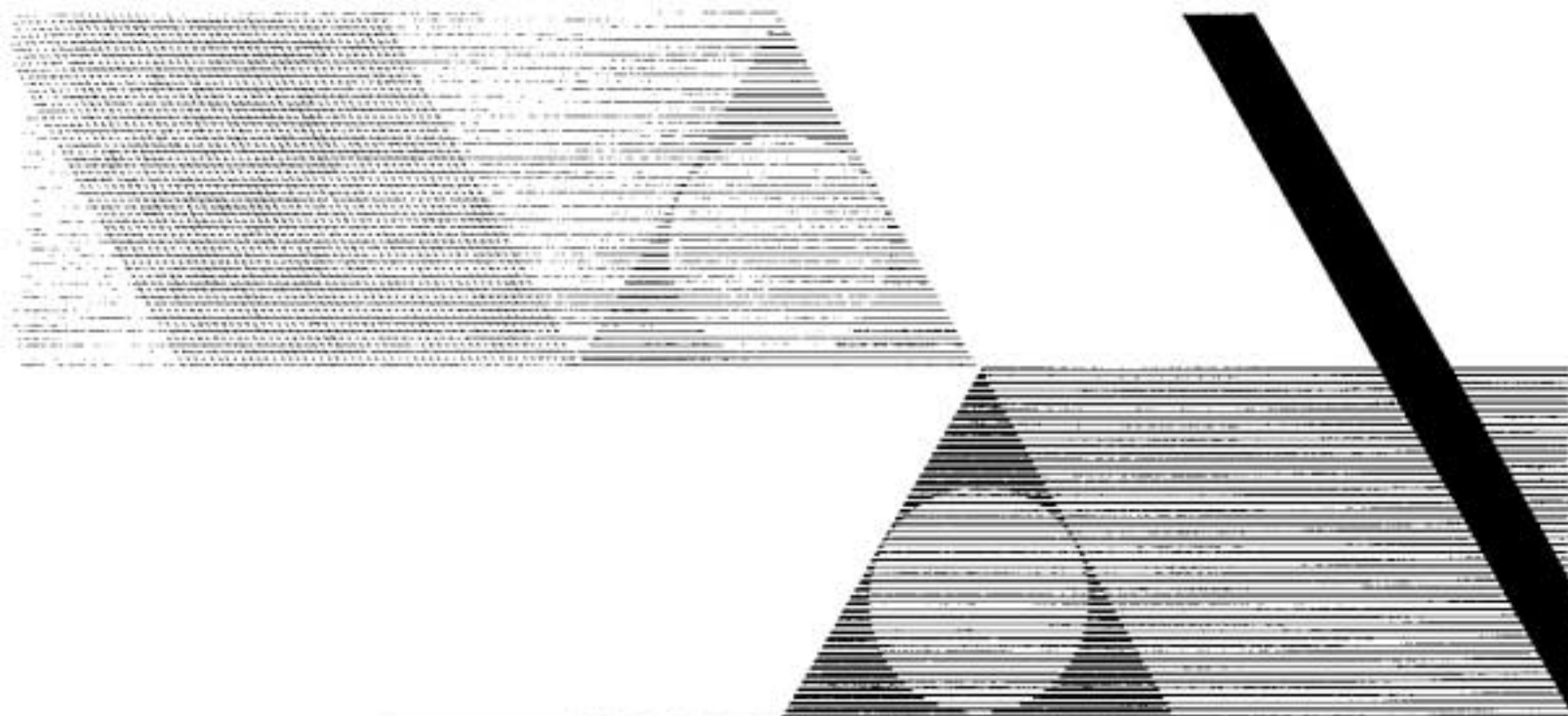


# ***Report of the Program on Information Resources Policy***

*July 1978 — June 1980*



**Harvard University**  
**Center for Information Policy Research**

# Report of the Program on Information Resources Policy July 1978 — June 1980

## Affiliates of the Program as of June 30, 1980

Abt Associates, Inc.  
 Action for Children's Television  
 American Broadcasting Companies, Inc.  
 American District Telegraph Company  
 American Telephone & Telegraph Co.  
 Arthur D. Little, Inc.  
 Association of American Publishers, Inc.  
 Auerbach Publishers, Inc.  
 Bell Canada (Canada)  
 Beneficial Management Corporation  
 Albert Bonniers Förlag AB (Sweden)  
 Booz-Allen & Hamilton Inc.  
 Boston Broadcasters, Inc.  
 The Boston Globe  
 Burroughs Corporation  
 Canada Post (Canada)  
 CBS Inc.  
 Central Telephone & Utilities Corp.  
 Citibank, N.A.  
 Codex Corporation  
 Communications Workers of America  
 Computer & Communications Industry  
 Association  
 Continental Telephone Corporation  
 Des Moines Register and Tribune  
 Doubleday & Co., Inc.  
 Dow Jones & Co., Inc.  
 Economics and Technology, Inc.  
 Elsevier Science Publishers (Netherlands)  
 Encyclopaedia Britannica  
 L.M. Ericsson (Sweden)  
 Exxon Enterprises, Inc.  
 Federal Reserve Bank of Boston  
 First National Bank of Boston  
 First National Bank of Chicago  
 Frost & Sullivan, Inc.  
 General Electric Company  
 General Telephone & Electronics  
 Hallmark Cards Inc.  
 Hambrecht & Quist  
 Harte-Hanks Communications, Inc.  
 Hazel Associates  
 Honeywell Inc.  
 Hughes Communication Services, Inc.  
 IBM Corporation  
 Information Gatekeepers, Inc.  
 International Data Corporation  
 International Paper Company  
 International Resource Development Inc.  
 International Telephone & Telegraph Corp.  
 Italtel S.P.A. (Italy)  
 Knowledge Industry Publications  
 Lee Enterprises, Inc.  
 Lockheed Missiles and Space Company, Inc.  
 McGraw-Hill, Inc.  
 MCI Telecommunications Corp.  
 Mead Data Central  
 Minneapolis Star and Tribune Company  
 Motorola Inc.  
 National Association of Letter Carriers  
 The National Cash Register Company  
 National Telephone Cooperative  
 Association  
 The New York Times Company  
 Nippon Electric Company (Japan)  
 Norfolk & Western Railway Company  
 J.C. Penney Co., Inc.  
 Pergamon Press Ltd. (United Kingdom)  
 Pitney Bowes  
 The Public Agenda Foundation  
 Reader's Digest  
 St. Regis Paper Company  
 Salomon Brothers  
 Satellite Business Systems  
 Scott & Fetzer Company  
 Selden & de Cuevas Inc.  
 Siemens (Federal Republic of Germany)  
 Southern Pacific Communications  
 Company  
 Standard Shares, Inc.  
 Swedish Television (Sweden)  
 Telesat Canada (Canada)  
 Times Mirror  
 Transamerica Corporation  
 The Tribune Company  
 United Parcel Service  
 United States Government:  
 • Central Intelligence Agency  
 • Department of Commerce:  
 National Technical Information Service  
 National Telecommunications and  
 Information Administration  
 • Department of Defense:  
 Defense Technical Information Center  
 • Federal Communications Commission  
 • National Aeronautics and Space  
 Administration  
 United States Postal Rate Commission  
 United States Postal Service  
 United Telecommunications, Inc.  
 The Washington Post Company  
 Western Union International, Inc.  
 Xerox Corporation

***Program on  
Information Resources  
Policy***

**Anthony G. Oettinger**  
Chairman

**John C. LeGates**  
Director

**John E. McLaughlin**  
Executive Director  
Postal and Allied Arenas

**Benjamin M. Compaine**  
Executive Director  
Media and Allied Arenas

**Oswald H. Ganley**  
Executive Director  
International and Allied Arenas

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*From the Director*

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| 38 | <i>Reviewers</i>  |
| 40 | <i>Staff</i>      |

- This publication reports on recent developments and current arenas of research at the Program on Information Resources Policy.

#### *From the Director*

This publication reports developments from July 1, 1978, to June 30, 1980. Two of the changes that occurred over this period deserve special mention. Benjamin M. Compaine has joined us as director of the Media Arena. Mr. Compaine has an MBA from the Harvard Business School and a Ph.D. from Temple University. His most recent book before joining us is *Who Owns the Media: Concentration of Ownership in the Mass Communications Industry*. His first Program publication is an analytical framework for the new media arena emerging from the influence of modern communications technology.

The second is the creation of the Center for Information Policy Research, a non-profit Massachusetts corporation. The Program has now become a cooperative venture of the Center and Harvard University.

We have also secured the commitment of Oswald H. Ganley to join us in August, 1980, as Executive Director, International and Allied Arenas. His resume and descriptions of his work can be found in the body of this report.

During this period the government has been reviewing its policies in postal affairs and in "communications" regulation. The lengthy and complex business of revising the Communications Act of 1934 continued, and the federal and state regulation of the telephone industry was altered in significant ways. Program personnel have been in close contact, both formal and informal, with those in the Executive and Legislative branches considering these issues. Staff members testified eleven times before Congressional committees on these and related matters.

The Program has also been active in assisting corporate affiliates with understanding of the environment in which they develop their products and marketing strategies.

The core functions of the Program have continued as before. Seventeen research papers were published, including a comprehensive survey of state regulation of cable television, and seven draft papers were distributed for review. Thirty-nine seminars were held, at which speakers with direct responsibility for dealing with information policy problems shared their experiences. Twenty-six new affiliates joined and five did not renew their association, making our current total affiliate membership ninety-five organizations.

These two years have been more productive than any other comparable period in our history. We have also undergone internal changes that promise to make the Program still more effective. We look forward with confidence to increasing our understanding of the world of information and sharing it with our affiliates and the general public.

John C. LeGates

- The Program on Information Resources Policy investigates changes and developments in the field of information and communications technology and policy.
- The Program is a joint venture of the Center for Information Policy Research and Harvard University.

# 1 About the Program

## Who we are

The Program on Information Resources Policy is a nonprofit policy research organization specializing in the policy implications of developments in information technologies for international and national, public and private organizations.

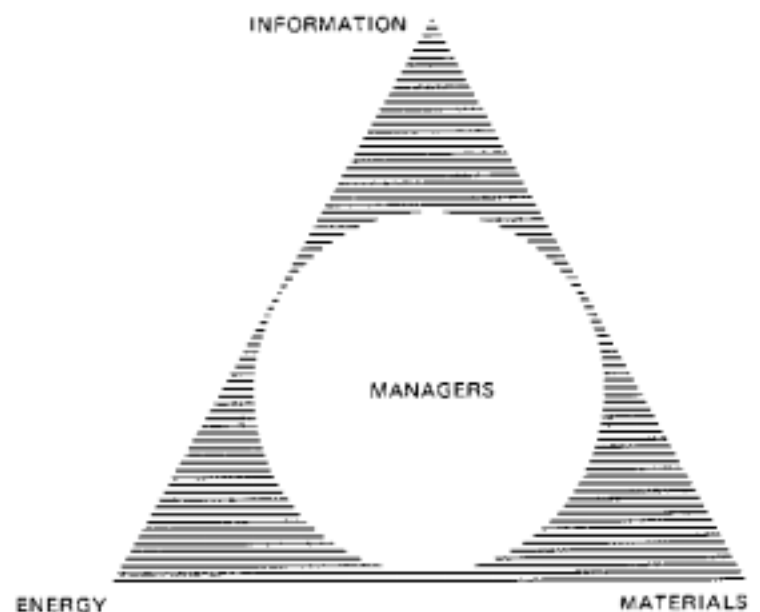
Our perspective is that information must be treated as a resource—like land, materials, energy, capital or labor. Increasingly organizations are discovering that an expenditure on information services and products can be a superior substitute for expenditures on others of these traditional resources. As they make these expenditures their dependence on and commitment to “information resources” grow, and with it the influence on their policies of changes in the cost and accessibility of information.

## What we do

Since 1972 the Program has published more than 60 studies tracing the influence of changes in information resources on the policies of organizations and has testified before congressional committees and regulatory

Figure 1

**Without energy nothing happens; without materials nothing exists; without information nothing has meaning.**



- Research is undertaken in postal, media, international, and communications 'arenas'.
- The Program's research is impartial and public.

### About the Program

bodies on numerous occasions. Our research work is organized into four "arenas": postal, media, international, and communications (which addresses the issues raised by the merging of computing and communications technologies), but we are also active in many issues that do not fit neatly into these categories. Information technologies often change the boundary of a field or industry, creating new competitors and new categories of clients or customers. We have a special interest in the policy implications of these boundary shifts.

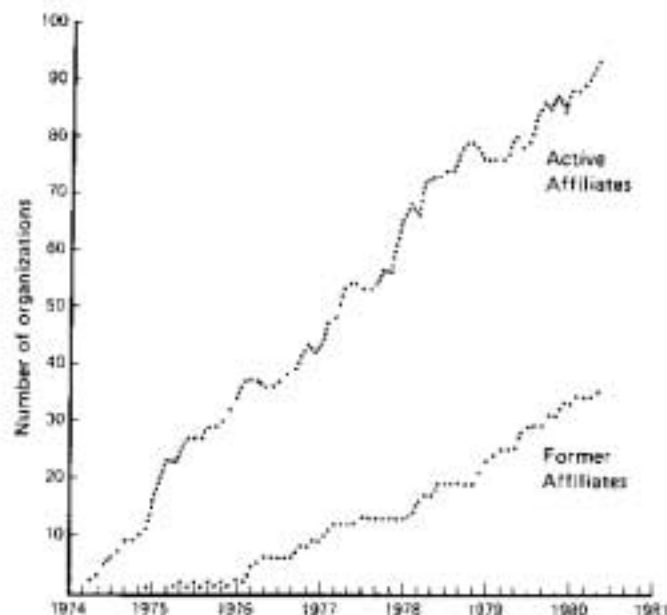
Our research does not take sides or advocate specific actions. Its goal is to describe the issues and realistic options, identify the forces and trends, and present the relevant facts. Our intention is not to decide issues but to raise the level of debate. We do not make predictions.

All research is public, non-proprietary, and unclassified. Program personnel do not accept consulting assignments. Contributions or honoraria go to the Program, not to individuals.

The Program also conducts seminars, workshops, conferences, and study programs. Again, all work is public.

Figure 2

**Number of affiliates as of  
May 1980.**





- The Program's affiliates are a diverse group of organizations embracing conflicting points of view.
- Since the Program's inception in 1972, the number of affiliates has steadily increased and the base of Program support has broadened.

A wide variety of persons do the work, including Program staff, faculty from Harvard and elsewhere, interns from industry and government, and students. Research can be done by almost anyone anywhere, so long as it adheres to the Program rules.

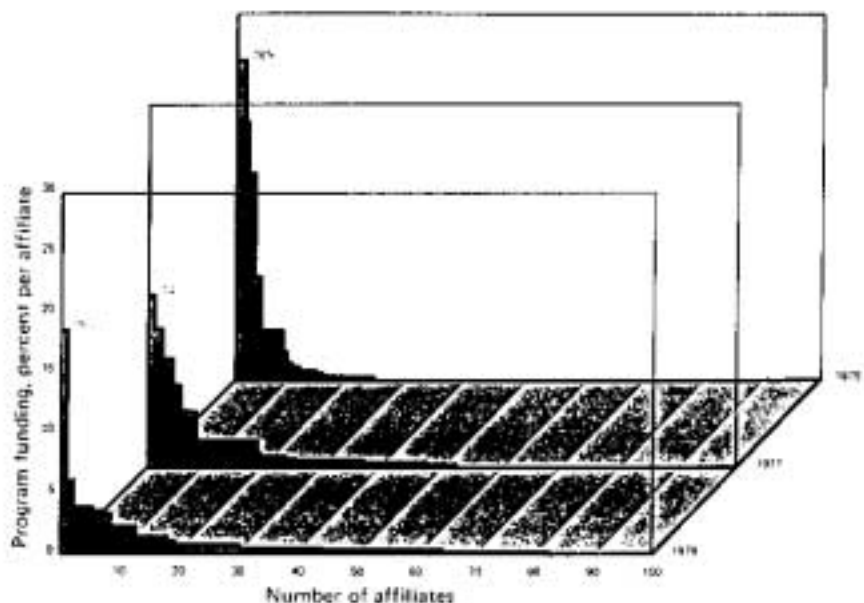
#### **Our method: A working partnership**

Analysis is most useful for policymakers—in industry or government—when it is both competent and impartial. These qualities are hard to combine in practice. Those who are most expert often have—or are presumed to have—stakes and therefore biases. Those who do not have stakes often lack accurate information and do not see all the issues involved.

The Program's relationship with its affiliates is an attempt to solve this problem. The affiliates are a diverse group of organizations, all dealing with the challenges of operating in the "Age of Information." They include companies in telecommunications, publishing, transportation, financial management, retailing, and manufacturing, as well as unions, government

Figure 3

**Number of affiliates ranked by percent of support.**





- *Affiliates supply the Program with financial support, information, and advice, and suggest and review research topics.*
- *Affiliates receive copies of all Program publications.*
- *Affiliates are invited to participate in Program seminars.*

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### ***About the Program***

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agencies, public interest groups and foundations. They supply the Program with financial support, information and advice, suggest research topics of general interest, and review research in draft. They insure that the Program's research is focused on issues that are important to both private and public policymakers.

As a matter of Program policy, we have sought out a group that embraces conflicting points of view. For each affiliate we have tried to enlist a direct competitor, a member of a competing industry, and a user of their product. The diversity of support helps make the research impartial; the diversity of review helps make it accurate, complete, and useful.

#### ***What affiliates gain***

Affiliates gain a better understanding of the context of their operations, a serious analysis of their policy views in a nonadversarial public forum, and the opportunity to draw on our research through both formal and informal channels. Affiliate support is in the form of a voluntary annual contribution.

- *Incidental to affiliation, contributors receive copies of all Program publications, working papers, notices of work in progress, and invitations to all seminars. They are invited to review drafts, comment on proposals, and suggest research topics of general interest. They can provide project reviewers.*
- *Affiliates are invited to participate in the Program's seminars on information resources issues.*
- *Program personnel are available for discussions with affiliates, on either a formal or an informal basis. Conferences, workshops, presentations, staff exchanges, and internships can all be arranged.*

- The Program produces Reports, Drafts, and Incidental Papers in the four arenas of research.
- The Program also takes into account issues which cut across or lie outside these arenas.

## Program arenas

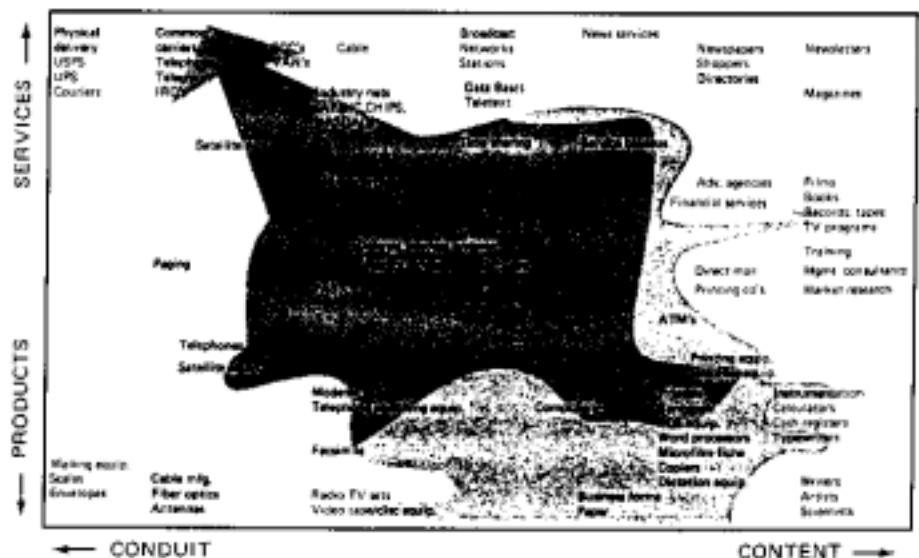
The Program has given special attention to issues in four arenas: postal, media, international, and communications, which is the growing union between communications and computer technologies. (The same idea is called *télématique* in France and *informatics* in Great Britain.) However, the usefulness of such classifications in a dynamic field like information resources is limited. Some issues cut across more than one arena—often it is this blurring that creates the policy problem in the first place—while others seem to lie outside this framework altogether. We have tried to stay alert to these limitations.

We have three types of documents: Research Reports which have undergone review, Research Drafts which are undergoing review, and Incidental Papers which have not undergone review, but which we consider to merit distribution. The work listed here was published between July 1, 1978 and June 30, 1980. A complete listing of current publications is available separately.

Figure 4a

**Mapping possible future competition between two major information firms.** (AT&T plus ACS, and IBM [domestic and foreign, plus technological capabilities] plus SBS and Discovision.)

Program research provides affiliates with analytic tools. This chart is from *Mapping the Information Business* by John McLaughlin with Anne E. Birinyi.



## Overview studies

## Communications

- The nature of future corporate and government conflict over information resources.
- Management of and linkages among different communications networks.

### Program Research

#### Overview studies

#### Research Reports

- *Mapping the Information Business*, by John F. McLaughlin with Anne E. Birinyi.

The authors construct a map which presents some 80 products and services in the information business. The current position and strategic movement of twelve corporate bodies representative of the information business are plotted, and the scope of general and functional regulation affecting the business is also shown. This approach suggests the nature of future corporate and government conflict and identifies likely targets for corporate acquisitions.

#### Communications

#### Research Reports

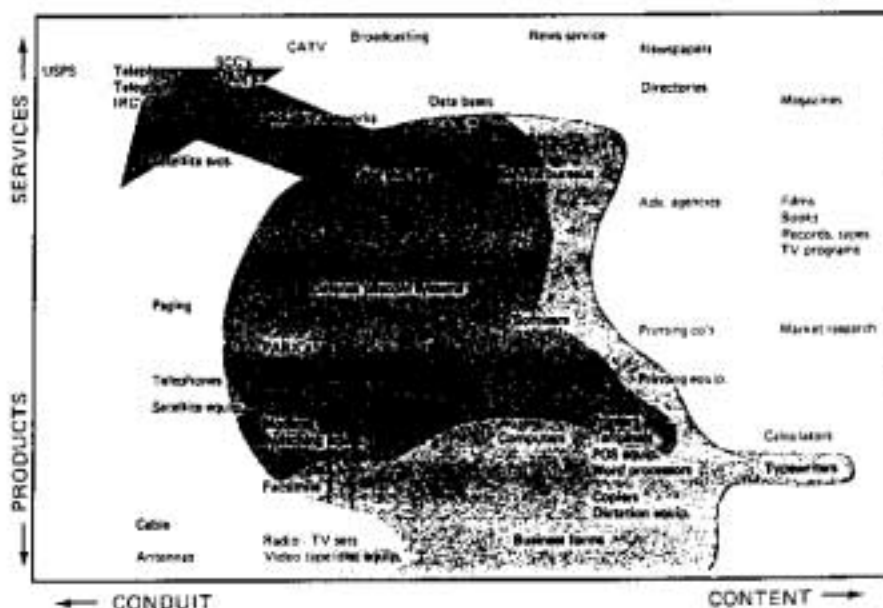
- *Communications Network Management*, by Robert H. Klie.

Much of modern communications is carried on networks that are provided and operated by a number of suppliers. These networks are becoming more diverse in ownership, services rendered, and operating responsibilities. This paper discusses the principles of network management, with special attention to the issues of linkages among networks.

Figure 4b

#### Adaptation of Figure 4a made by Salomon Brothers, a Program affiliate.

Source: Salomon Brothers Telecommunications Industry Report, March 3, 1990, on "Converging Strategies in Information."



- Separations procedures as a function of cost allocations and political accommodations.

In an appendix the retired Director of the Defense Communications Agency, Lieutenant General Lee M. Paschall, describes the management of military satellites.

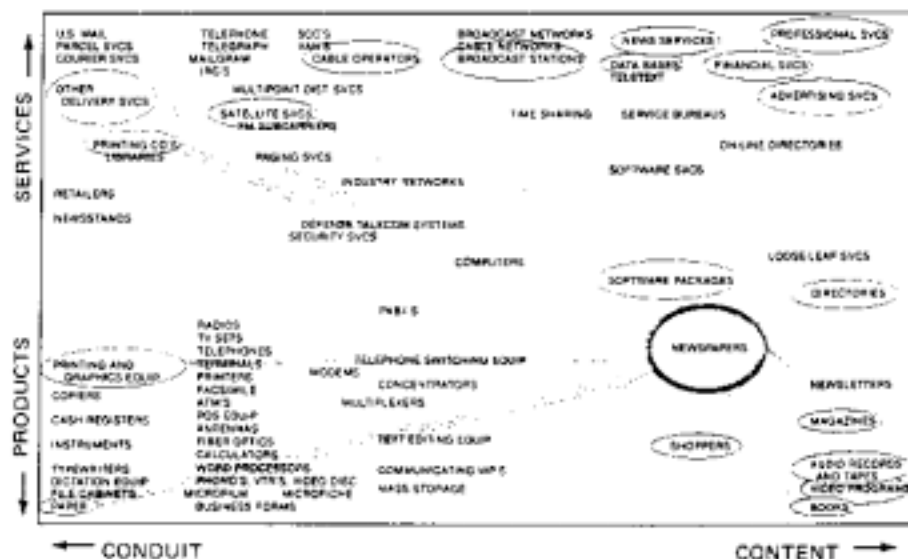
- *The Federal Side of Traditional Telecommunications Cost Allocations* (Vol. 3 of *Basic Data on the Politics and Economics of the Information Evolution: Telecommunications Costs and Prices in the United States*), by Anthony G. Oettinger with Carol L. Weinhaus.

Separations procedures are used to divide the total costs of the telecommunications industry into the cost of services offered at the state level and those offered at the federal level. This division is necessary because each category of services has its own set of regulators (the Federal and State communications commissions), each of whom needs to establish what the services under its jurisdiction cost before it can appropriately govern revenues from those services. This paper describes the current separations procedures as a reflection of the accommodations that the different players have reached in response to evolving market, political, and technological forces.

Figure 5

#### Diversification by newspaper companies.

Each line indicates entry into a particular field by one of a group of seven publishers. These newspaper companies display a variety of diversification strategies. Broadcasters, publishers, and other media companies are repositioning themselves to deal with new ways of collecting, packaging, and distributing information.

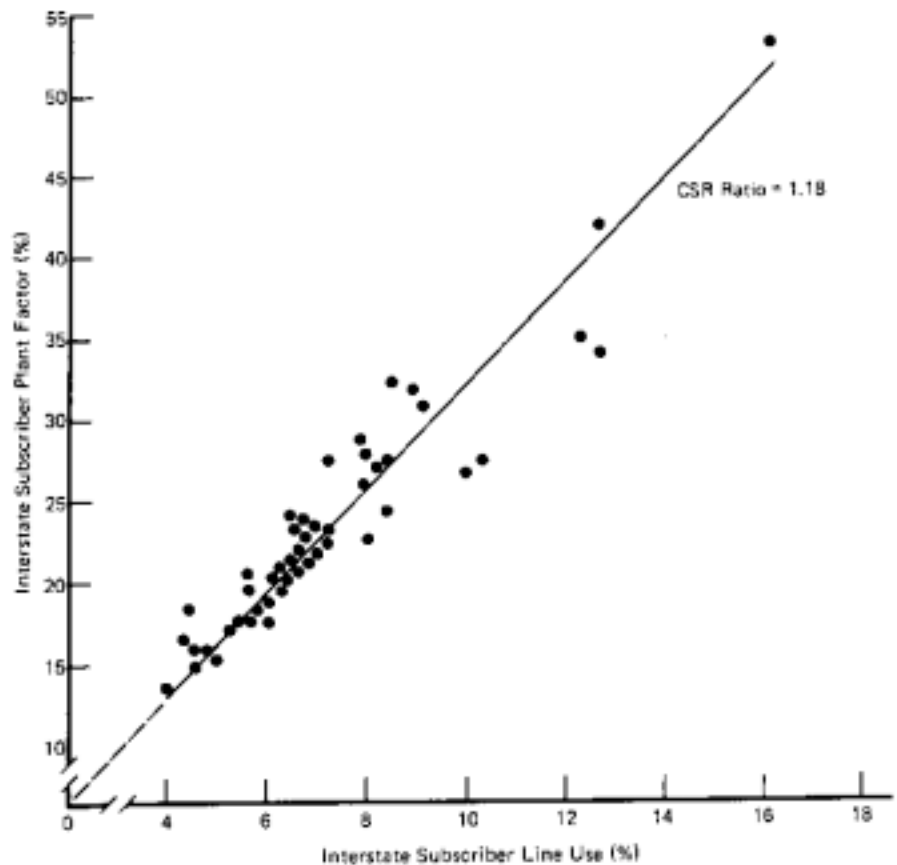


Program Research

Figure 6

**"Use" factors determine costs, but the working definition of use is shaped by political, legal, economic, and institutional influences.**

Originally, "use" was measured by subscriber line use (SLU); however, over the years this has been supplanted by another unit of measurement called subscriber plant factor (SPF) which is about three times larger than SLU. This redefinition of use affects the rank ordering of states with regard to their costs and benefits. For example, California (CA 2,13) has the second lowest SLU factor, but its SPF value boosts it to a place thirteenth from the bottom.



| STATE | RANK  | STATE | RANK  | STATE | RANK  | STATE | RANK  | STATE | RANK  |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| MI    | 1,1   | MN    | 11,15 | AR    | 21,20 | NY    | 31,27 | MT    | 41,43 |
| CA    | 2,13  | MD    | 12,9  | IA    | 22,21 | FL    | 32,38 | ID    | 42,42 |
| TX    | 3,6   | PA    | 13,7  | ME    | 23,24 | CO    | 33,41 | NJ    | 43,35 |
| DE    | 4,2   | IN    | 14,12 | MA    | 24,23 | ND    | 34,34 | DE    | 44,39 |
| LA    | 5,5   | SC    | 15,14 | KS    | 25,25 | NM    | 35,40 | VT    | 45,46 |
| AL    | 6,4   | WV    | 16,11 | OR    | 26,31 | RI    | 36,28 | WY    | 46,47 |
| KY    | 7,3   | MS    | 17,17 | UT    | 27,32 | NE    | 37,36 | NH    | 47,45 |
| TN    | 8,8   | MO    | 18,19 | OK    | 28,28 | CT    | 38,33 | NV    | 48,48 |
| WI    | 9,10  | NC    | 19,16 | GA    | 29,29 | SD    | 39,37 |       |       |
| WA    | 10,18 | IL    | 20,22 | VA    | 30,30 | AZ    | 40,44 |       |       |



- *An alternative to adversary communications competition: government sanctioned negotiation.*
- *The history and structure of revenue division in the railroad and telecommunications industries.*
- *Possible responses to Soviet eavesdropping on U.S. telecommunications.*

- *The Exchange Network Facilities for Interstate Access (ENFIA) Interim Settlement Agreement*, by Kurt Borchardt.

Increasingly, data processing/communications companies are offering product packages to the public that combine the service offerings of more than one company. Some of the companies involved might compete in other respects. If so, coordination between them is likely to be formal, adversarial, and carried out under government supervision. Adversarial proceedings demand time, effort, and money. As the number of joint offerings grows, so will the cost of the coordination process. This paper describes an alternative: a governmentally sanctioned negotiation. The example chosen is one in which specialized communications services negotiated an access rate and charge agreement with the Bell System.

- *Revenue and Cost Allocations: Policy Means and Ends in the Railroad and Telecommunications Industries*, by Robert Carson Godbey.

Both the railroad and telecommunications industries provide interstate services that may require the facilities of more than one company. In the railroad industry this is typically a route involving more than one line; in the telephone industry, it is a toll call involving two or more companies. Consequently, both industries have had to consider how to divide the revenues gained from these commonly used facilities. Each industry has solved the problem in a different way. The railroads divide revenues on a route by route basis; the telecommunications industry pools all revenues generated by cooperating interstate services and distributes them to participating companies according to the relative investment and expenses incurred in providing the service.

This paper outlines the different structures and histories that influenced this differentiation and suggests that as the telecommunications environment comes to resemble that of the railroads more closely the experience of the former may help guide policy for the latter.

- *Private and Public Defenses Against Soviet Interception of U.S. Telecommunications: Problems and Policy Points*, by Greg Lipscomb.

Recent changes in telecommunications technology have made it easier for nations to eavesdrop on each other. This paper analyzes an instance of the issues raised by these developments: how the United States should respond to Soviet interception of our long distance telephone calls.

Any response other than simply lowering our expectations of privacy involves making our telecommunications less accessible through encryption or more secure facilities. Planning for this change raises a host of policy questions. For example, how closely should the change be controlled

- Government telephone regulation policy affected by diversifying telephone services and suppliers.

## Program Research

and directed? Close control makes a high standard of equipment quality and compatibility more likely, but it conflicts with the national policy of encouraging diversity of design and ownership in telecommunications. Close control also raises the question whether a government with the keys to the nation's communications can be trusted not to abuse that power.

The paper concludes with a general consideration of the relation between data exchange and foreign policy.

### ■ Research Drafts

- *Stakes in Telecommunications Costs and Prices* (Vol. 2 of *Basic Data on the Politics and Economics of the Information Evolution: Telecommunications Costs and Prices in the United States*), by Anthony G. Oettinger, and Kurt Borchardt, with Carol L. Weinhaus.

The authors examine how the growing diversity of services and suppliers affect policy concerning the traditional telephone industry and its regulated monopoly.

Figure 7

### The control of total revenue requirements (= cost).

Costs, which are equivalent to revenue requirements in regulated utilities, are controlled through the interplay of public and private decisions.

As of 1976, about half of the Bell System's \$33 billion costs were principally under management control, including such costs as maintenance and marketing expenses. About thirty percent of costs, such as depreciation, were under joint government and management control. Taxes, the remaining twenty percent of costs, were principally under government control.

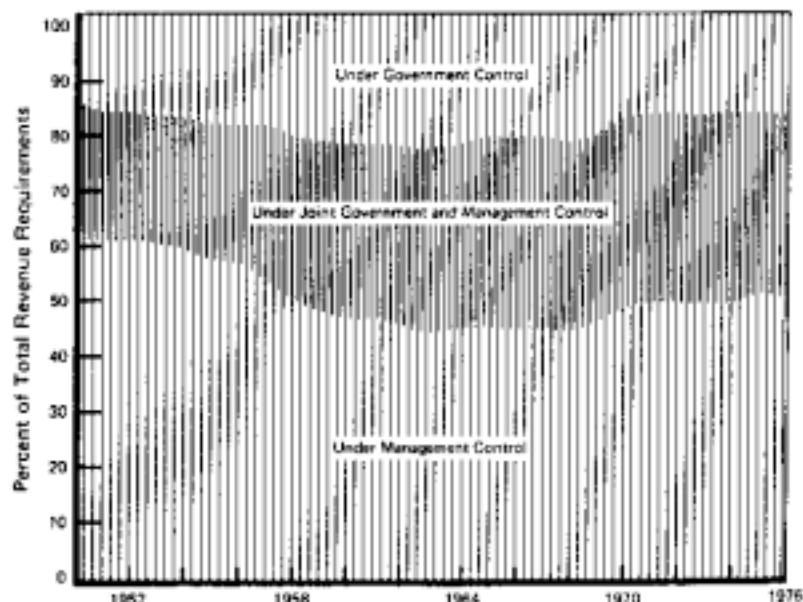


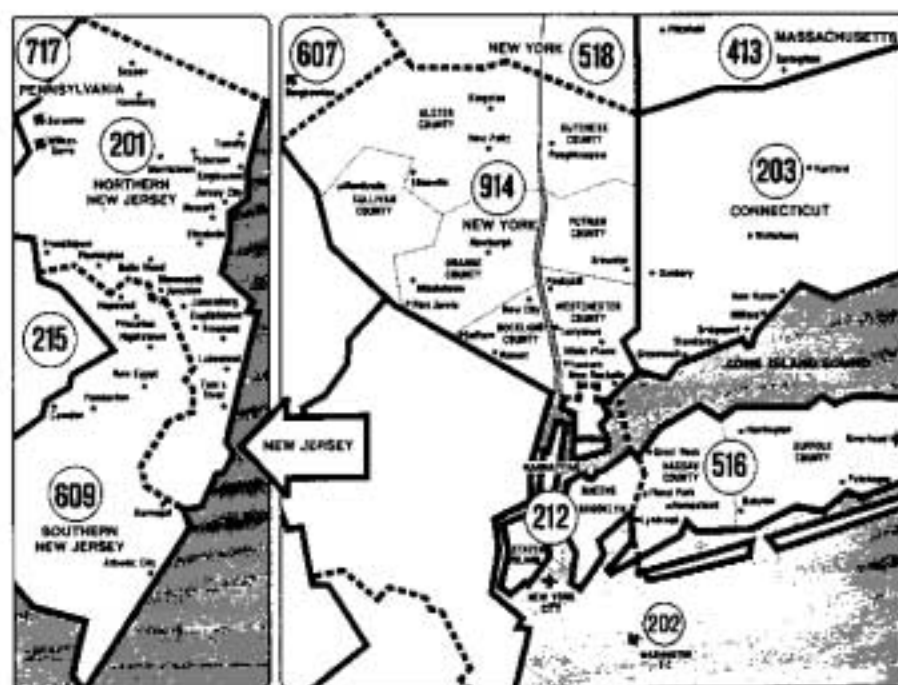


Figure 8

**One effect of the politics of cost allocation and price setting under growing competition in the telecommunications industry is illustrated here.**

The prices of calls to communities that are geographically adjacent but that lie on different sides of the border between "local" and "toll" costing and pricing show differences ranging between 70 and 500 percent.

Source: New York Telephone Company; Manhattan Telephone Directory, 1977-78, New York, N.Y., June 30, 1977, p. 12; and AT&T.



Telephone dialing areas and area codes for New York City and adjacent counties and states.

| Type of call   |                        | Calls from Manhattan (Zone 2) | Price for 3 minutes | Price for 6 minutes |
|----------------|------------------------|-------------------------------|---------------------|---------------------|
| Contiguous     | Local (PCA)            | NY, Contiguous zones          | \$ .08              | \$ .08              |
|                | New Jersey interstate  | Jersey City, NJ               | .28                 | .46                 |
| Non-Contiguous | Local (EAS)            | Farmingdale, NY               | .49                 | .74                 |
|                | Intrastate toll        | Deer Park, NY                 | .95                 | 1.82                |
|                | Local (EAS)            | NY, Zone W9                   | .33                 | .57                 |
|                | Connecticut interstate | Greenwich, CT                 | .57                 | .99                 |

EAS = Extended Area Service  
PCA = Primary Calling Area

The Manhattan local/toll interface: Prices for customer-dialed daytime calls, 1977.

## Communications (con't.)

- Telecommunications cost allocations influenced by politics and competition.
- Relationships between the telecommunications industry and computer and other industries analyzed.
- Telephone and Postal Service competition and pricing.

## Postal

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### Program Research

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- *The Traditional State Side of Telecommunications Cost Allocations* (Vol. 4 of *Basic Data on the Politics and Economics of the Information Evolution: Telecommunications Costs and Prices in the United States*), by Anthony G. Oettinger with Carol L. Weinhaus.

Over the last decade the interstate share of costs has risen sharply. Under current regulatory procedures, this has had the effect of increasing the share of total revenues derived from interstate customers. Such broad trends, however, tell only part of the story of how the benefits and burdens of telecommunications are allocated. There are significant state-by-state, service-by-service, and industry segment-by-industry segment differentials reflecting the influence on cost allocation and price setting of the diverse compromises that are politically feasible in different jurisdictions under changing competitive conditions. In this report the authors describe these differentials and compromises as they affect the prices of local and state telecommunications services.

#### ■ Incidental Paper

- *Issues and Options in Telecommunications Competition: A Survey*, by David J. Seipp.

Continuing controversy over the structure of the telecommunications industry and its relationship to the computer and other industries and all their clients is reflected in numerous regulatory proceedings, court cases and legislative initiatives. Part I of this paper surveys the principal actions of the last decade. Part II attempts to distill the principal issues raised and options presented in these actions.

This publication updates and complements the analytical overview in Anthony G. Oettinger, Paul J. Berman and William H. Read's *High and Low Politics: Information Resources for the 80s* (Ballinger Publishing Company, Cambridge, MA, 1977).

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#### Postal

#### ■ Research Drafts

- *Telephone-Letter Mail Competition: A First Look*, by John F. McLaughlin, with Anne E. Birinyi, David Dominik, and Eddie Munoz-Perou.

Two of our most important information services are the telephone and the Postal Service. This study reviews the policies followed by both organizations in pricing their services between 1950 and 1977, the patterns of usage of both services, and the nature of the competition, actual and potential, between the two. Among other findings, the study concludes that the total

number of "paid messages" (total letters plus total toll calls) appears to have been constant relative to real disposable personal income. This suggests that the market for message services may not have much potential for growth. If so, the introduction of new electronic message systems may prove critical to both the telephone and postal system.

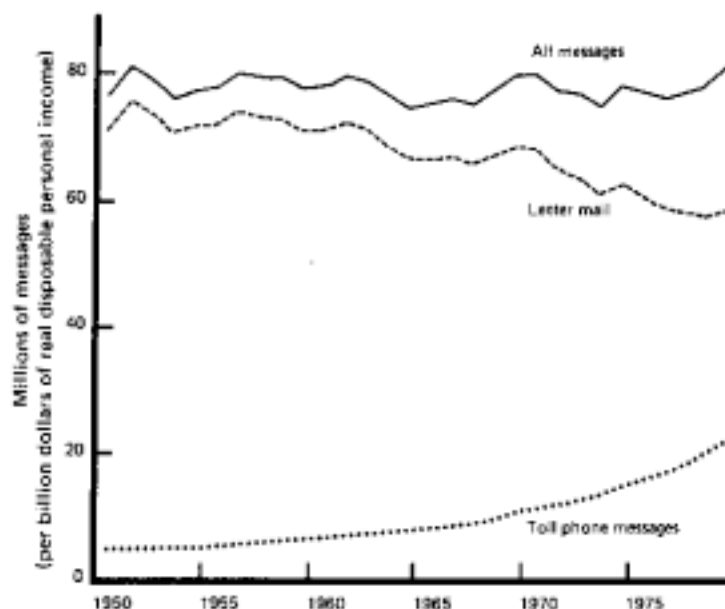
- *Aspects of the Welfare Economics of Postal Pricing*, by Robert D. Willig.

The appropriate pricing policy for the United States Postal Service is a subject of considerable current debate. The problems of postal pricing are especially difficult and important in today's context of rising postal costs, continuing U.S.P.S. deficits (with the exception of 1979), controversy over public subsidies of some mail classes and of rural post offices, the entry or potential entry of competing private firms, and technological advances affecting the production of both postal services and potential substitute services. The paper includes an introductory discussion of pricing and social welfare and the theory of the Inverse Elasticity Rule and the Economic Gradient Method as applied to postal pricing. The paper then examines the pricing of postal delivery services from the point of view of welfare economics.

Figure 9

#### **Annual mail and toll phone messages.**

Letter mail and toll telephone use seem to constitute a single market that varies directly with economic activity. The total growth of toll telephone use between 1950 and 1977, then, can be explained by economic growth as measured by DPI and message volume diverted from the letter mail stream.



- Content, process, and format in the media arena.
- State government regulation of cable TV.

## Program Research

### Media

### Research Reports

- *A New Framework for the Media Arena: Content, Process and Format*, by Benjamin M. Compaine.

The "media arena" could once be defined simply as newspapers, magazines, books, movies, radio, and television. Today this industry has new boundaries and new definitions. The paper analyzes the arena in terms of media formats, processes and content. Its intention is to build a framework for describing change in the media environment that can be used by firms who are themselves in that arena and by governmental bodies for policy consideration.

- *Executive Summary of Findings of the State Cable Television Regulation Project*, by Konrad K. Kalba, Larry S. Levine, Yale M. Braunstein and Philip R. Hochberg.

The state cable television regulation project addresses the political dynamics, legal options, regulatory issues and economic effects of state government involvement in cable television. The project was conducted in conjunction with Kalba Bowen Associates, Inc., under a National Science Foundation grant.

Figure 10

### Media arena framework.

Traditionally the different media, such as newspapers, television, books, etc., were defined by distinct characteristics. Today these identities are blending and a new descriptive framework for the media arena is required.

| Content   | Process   | Format  |
|---|---|---|
| <b>Examples of its Components</b><br>Paragraphs<br>Issues<br>Words<br>Stories<br>etc.   | <b>Functions such as</b><br>gathering<br>creating<br>storing<br>handling<br>transmitting<br>etc. <div style="position: absolute; left: 150px; top: 0px;">} Information</div>  | <b>Functions include</b><br>Display content<br>Implicit message conveyance  |
| <b>Some descriptive Characteristics</b><br>Breadth of audience<br>(e.g., mass/special interest)<br>Market segment<br>(e.g., end user, demographic)<br>Manner of financing<br>etc. | <b>Some descriptive Characteristics</b><br>Rate of transmission<br>Method of transmission<br>Cost<br>Extent of coverage<br>Type of carrier<br>(e.g., common, dedicated)<br>Difficulty of use<br>Direction of flow<br>etc. | <b>Some descriptive Characteristics</b><br>Electronic or mechanical<br>Degree of permanence<br>Hardware needed for user<br>Source of control over<br>rate of content display<br>Method of user accessibility<br>(e.g., random entry,<br>sequential)<br>etc. |
| <b>Examples of Content</b><br>News<br>Entertainment<br>Education<br>Culture<br>Persuasion<br>Data<br>etc.   | <b>Examples of Processes</b><br>Broadcasting<br>Coaxial or other cable<br>Mail<br>Private carriers<br>Microwave<br>Computer<br>Printing<br>Disc or cassette<br>etc.   | <b>Examples of Formats</b><br>Video on screen (VOT)<br>Ink on paper<br>Electronic or mechanical sound<br>Optical/mechanical light<br>projection<br>etc.   |

- *Case studies and analyses of cable TV regulation by state and federal governments.*
- *Interpreting the First Amendment in the light of changes in information technology.*

- *Regulatory Politics: State Legislatures and the Cable Television Industry*, by Konrad K. Kalba, Larry S. Levine, and Anne E. Birinyi.

Five representative case studies are presented that illustrate the various factors which influence state legislatures on whether and how to regulate cable television.

- *The States Regulate Cable: A Legislative Analysis of Substantive Provisions*, by Philip R. Hochberg.

The different approaches taken by states in the regulation of cable systems are described and analyzed.

- *Taxation, Regionalization, and Pole Attachments: A Comparison of State Cable Television Policies*, by Larry S. Levine, Konrad K. Kalba and Philip R. Hochberg.

Three issues arising from the day-to-day administration of state cable television statutes are examined.

- *The Regulation of Cable Television Subscriber Rates by State Commissions*, by Larry S. Levine.

This paper provides a retrospective look at CATV rate regulation. It reviews the statutes, administrative rules and regulations, and case decisions that have emerged from the state regulatory process.

- *The Economic Impact of State Cable TV Regulation*, by Yale M. Braunstein, Konrad K. Kalba and Larry S. Levine.

This study describes the effects of state cable TV regulation on subscriber rates, penetration rates, and ownership patterns.

- *Federal Preemption of State Regulation in Cable Television*, by Philip R. Hochberg.

Congressional legislation, FCC decisions, and federal court decisions upholding and denying federal preemption are reviewed and analyzed.

- *Chronology of State Cable Television Regulation: 1947-1978*, by Anne E. Birinyi.

Important reports and decisions made by courts, legislatures, and agencies on the regulation of CATV over the last thirty years are presented and correlated with the progress of the industry.

■ *Incidental Paper*

- *The First Amendment Meets the Second Revolution*, by William H. Read. Developments in information technology are challenging traditional



- *The political and diplomatic view of U.S.-Canadian communications policy conflicts.*
- *History of Canadian information resources policy and practice.*

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### ***Program Research***

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interpretations of the First Amendment. This paper looks at two such issues:

1. Is corporate speech protected? It is already possible, and in the future will become more so, for organizations who are not members of the traditional media to communicate with large groups of people. Can these communications claim First Amendment protection?
2. The Supreme Court has held that the First Amendment allows broadcast media to be regulated to a degree it forbids in the case of print media. The convergence of broadcast and print technologies seems likely to erode basic distinctions between the two industries. If so, which form of protection will prevail: the "strict" form enjoyed by print media, or the looser form that allows government to regulate broadcast media?

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#### ***International***

#### **■ *Research Reports***

- *The United States-Canadian Communications and Information Resources Relationship and Its Possible Significance for Worldwide Diplomacy*, by Oswald H. Ganley.

The Canadian government, as well as the governments of Western Europe and Japan, see the changes taking place in communications and the information field primarily as political events. The U.S. had tended to see them largely as technical and commercial problems. This paper reviews the influence this difference in perspective has had on the information resource policy conflicts that have arisen between the two countries, and suggests that similar problems might be anticipated elsewhere.

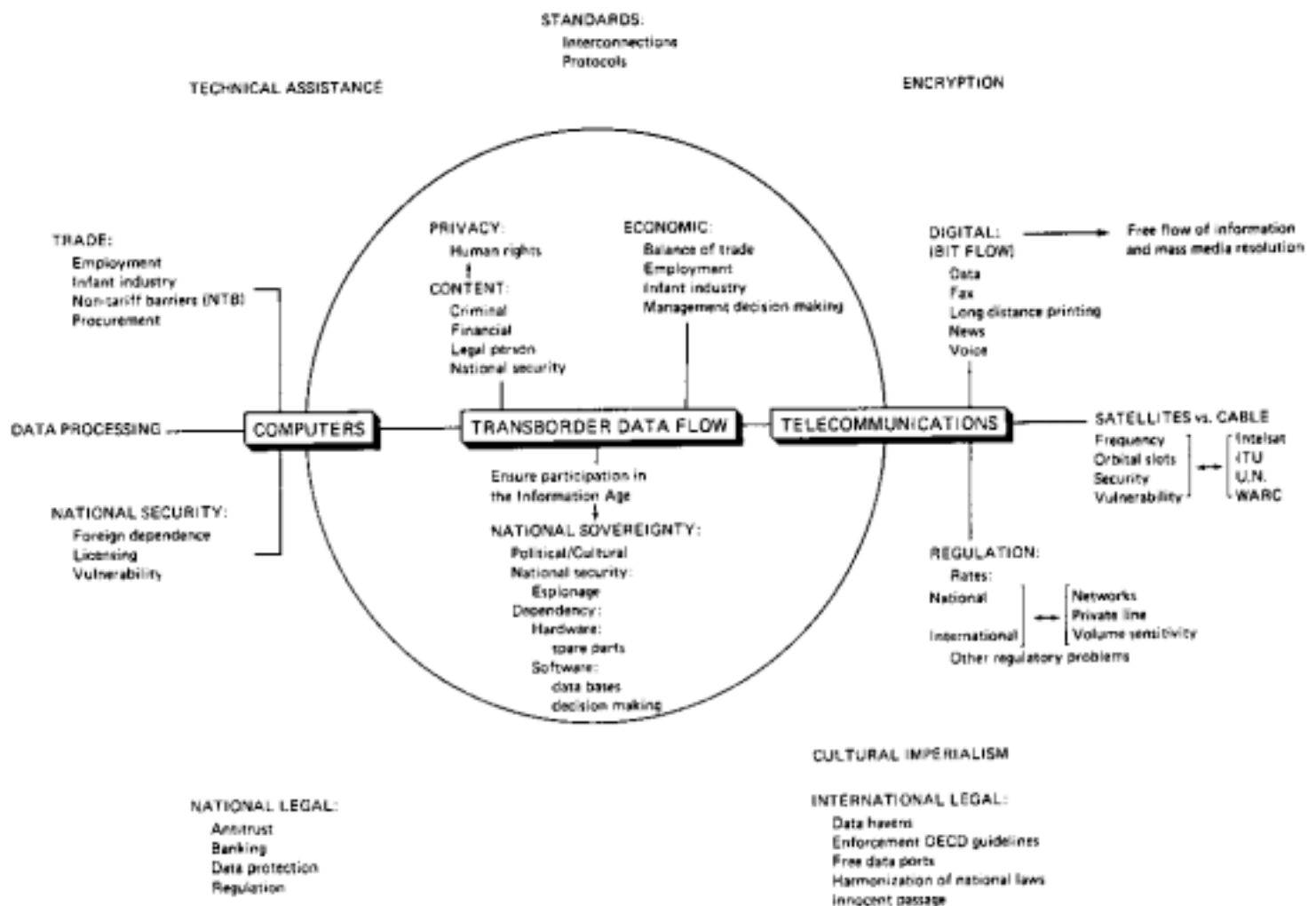
- *The Role of Communications and Information Resources in Canada*, by Oswald H. Ganley.

The United States is unusual among nations in the decentralized view it takes of its communications and information resources. Any problems that arise are dealt with on a case-by-case basis, often in terms set by the participants directly involved.

More common is the approach taken by Canada, in which communications and information resources are viewed in terms set by national policy. Specifically, the Canadian government assesses information issues according to the contribution that can be made towards the formal national goals of unity, economic viability, technological sovereignty, and the development of an independent Canadian culture. This paper describes the history and practice of a national information strategy, as applied by one nation to broadcasting, computer communications, satellite systems, and the support and regulation of research and development in information technology.

Figure 11

**Transborder data flow (TBDF) affects all international business, not just the data processing and telecommunications industries.**





## Program seminars

## 1978

- Lee L. Selwyn, President, Economics and Technology, Inc., *The Role of State and Federal Regulation in the Telecommunications Industry*. 9/25/78
- Yale M. Braunstein, Senior Associate, Kalba Bowen Associates; Larry S. Levine, Research Associate, Kalba Bowen Associates; Konrad K. Kalba, President, Kalba Bowen Associates, *Economic Consequences of State Cable Television Regulation*. 10/16/78
- Francis X. Murray, Director, National Coal Policy Project, Georgetown University, *Alternatives to the Adversary Process—National Coal Policy Project*. 10/30/78
- William von Meister, Chairman of the Board, Digital Broadcasting Corporation, *Electronic Mail/Office of the Future—Considerations and Pitfalls*. 11/6/78
- Kent Rhodes, Senior Counsellor, Reader's Digest, *Efficient Pricing of Postal Services Here and Abroad*. 11/13/78
- Leo Bogart, Executive Vice President and General Manager, Newspaper Advertising Bureau, Inc., *Marketing a Medium: The Newspaper Readership Project*. 11/20/78
- George Kroloff, President, Ruder & Finn and Scott Cohen, Executive Assistant to Senator Charles H. Percy, *New World Information Order*. 12/4/78

## 1979

- Howard Anderson, President, The Yankee Group, *The Impact of Advanced Communications Services on the Office of the Future*. 2/5/79
- John E. Fox, Vice President—Marketing, Satellite Business Systems, *The Satellite Business Systems: An Innovative Force in Business Communications*. 2/12/79
- Sol Hurwitz, Vice President, Information/Administration, Committee for Economic Development, *The Corporation in a World of Media Diversity*. 3/5/79
- Henry Geller, Assistant Secretary of Commerce for Communications and Information, NTIA, *New Developments in Telecommunications Policy*. 3/12/79
- Doug Parkhill, Assistant Deputy Minister for Communications, Ministry of Communications, Canada, *The Videotex Challenge—TELIDON*. 3/19/79
- John E. Reinhardt, Director, International Communications Agency, *Free Flow of Information: Problems and Prospects*. 4/2/79
- Bernard Strassburg, Consultant, Washington, D.C., *Regulatory Policy and Legislative Aspects of the Present Scene*. 4/9/79
- Jerry Svigals, EFT Coordinator of System Communications Division, IBM, *Current Status Report on EFT Implementation in the Country*. 4/16/79

- Charles D. Ferris, Chairman, Federal Communications Commission, *Recent Legislative Proposals in the Telecommunications Area*. 4/23/79
- Congressman Lionel Van Deerlin, *Communications Policy: The Storm before the Calm*. 5/7/79
- M. J. (Chip) Block, Jr., President, Redwood Communications, *The Magazine Industry of the 1980's*. 5/14/79
- Jeffrey Rohlf, Bell Laboratories, *Economically-efficient Bell System Pricing*. 5/21/79
- Oswald H. Ganley, Research Associate, J. F. Kennedy School of Government (former Deputy Assistant Secretary of State for Technology Affairs), U.S., *International Communications and Information Policy: What Can We Learn from the U.S./Canadian Experience?* 9/24/79
- Elizabeth E. Bailey, Commissioner, Civil Aeronautics Board, *Airline Deregulation—One Year Later*. 10/12/79
- Benjamin M. Compaine, Executive Director/Media and Allied Arenas, Center for Information Policy Research, *The Media Arena: Changing Boundaries and Formats*. 10/15/79
- Robert P. Bigelow, Esq., Editor, "Computer Law and Tax Report," *Computers and Crime*. 10/22/79
- Vincent R. Sombrotto, President, National Association of Letter Carriers, *The Postal Service Today and Tomorrow: A Union Perspective*. 10/29/79
- John H. Farrell, Vice President—Regulatory Matters, Bell Canada, *The Chips Are Down*. 11/5/79
- Edward P. Larkin, Commissioner, New York Public Service Commission, *The Regulation of Regulation*. 11/19/79
- Larry Garfinkle, Director, Rates and Tariffs, AT&T, Basking Ridge, NJ, *Transition Plans in the Pricing of Local Telephone Service and Resulting Issues*. 11/26/79
- Richard A. MacKinnon, Manager, Cambridge Scientific Center, IBM Corporation, *Managing and Controlling Distributed Processors*. 12/3/79
- Lee L. Selwyn, President, Economics and Technology, Inc., *Deregulation, Competition and Regulatory Response in Telecommunications*. 2/4/80
- Walt Cannon, Vice President, AT&T Long Lines, "Reach Out"—*Marketing Long Distance Calling*. 2/11/80
- Robert E. LaBlanc, Vice Chairman, Continental Telephone, *How Continental Telephone is Getting Set for the Future*. 2/25/80
- Richard M. Neustadt, Assistant Director, Domestic Policy Staff, *Domestic Communications Policy: Options for the Next Agenda*. 3/3/80

## Other Program Activities

- Nolan Bowie, Executive Director, Citizens Communications Center, *WARC: A Different Perspective*. 3/10/80
- James Hoge, Executive Vice President, Field Enterprises Inc., and Editor-in-Chief, Chicago Sun-Times, *A Newspaper Executive Looks at the Competition*. 3/17/80
- David R. Zimmer, Manager, Corporate Financial Analysis, Chrysler Corporation, *Unconventional Communication at a Large Industrial Corporation*. 3/31/80
- Ralph B. Henderson, Vice President and Director of Catalog Operations, J.C. Penney Company, Inc. and President, Mail Order Association of America, *Catalog—An Old Business with a New Appeal*. 4/7/80
- Harvey L. Poppel, Senior Vice President, Booz, Allen & Hamilton, *The Business Impact of Information Resources in the 1980's*. 4/21/80
- Robert Marik, Vice President, Public Affairs, Merck and Company, *A Case Study on Merck*. 5/2/80
- Naomi Seligman, McCaffery, Seligman & von Simpson, *Economics of Transborder Data Flows in Major Multinational Corporations*. 5/5/80

Figure 12

**Anthony G. Ottlinger testified before the Senate Subcommittee on Communications, May 3, 1979, on proposed amendments to the Communications Act of 1934.**

### AMENDMENTS TO THE COMMUNICATIONS ACT OF 1934

#### HEARINGS BEFORE THE SUBCOMMITTEE ON COMMUNICATIONS OF THE COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION UNITED STATES SENATE NINETY-NINTH CONGRESS FIRST SESSION

##### S. 611

TO AMEND THE COMMUNICATIONS ACT OF 1934 AS AMENDED TO PROVIDE FOR IMPROVED DOMESTIC TELECOMMUNICATIONS AND INTERNATIONAL TELECOMMUNICATIONS, RURAL TELECOMMUNICATIONS DEVELOPMENT, TO ESTABLISH A NATIONAL COMMISSION ON SPECTRUM MANAGEMENT, AND FOR OTHER PURPOSES

##### S. 622

TO AMEND THE COMMUNICATIONS ACT OF 1934 IN ORDER TO ENCOURAGE AND DEVELOP MARKETPLACE COMPETITION IN THE PROVISION OF CERTAIN SERVICES AND TO PROVIDE CERTAIN DEREGULATION OF SUCH SERVICES, AND FOR OTHER PURPOSES

APRIL 27, MAY 1, 2, 3, AND 8, 1979



May 3, 1979

SENATOR HOLLINGS: Mr. Ottlinger.

Mr. OTTLINGER: Thank you, Mr. Chairman.

My name is Anthony G. Ottlinger. I am a professor at Harvard University, where I chair the program on information resources policy. I am also the business chairman of the Massachusetts Cable Television Commission, a body I've served on since 1972. I speak here only for myself, not for any institution with which I am affiliated, nor for any of the 10 or so diverse public or private organizations that support the Harvard program's work. (List attached.)

It is a pleasure to testify before you once again. Now that you've jumped in to do the swing, I want to point out a few alignments. We have been busy analyzing a lot of the data folks here have alluded to. There is too much to present here, but we tried to make explicit and intelligible something of the mind-boggling complexity that folks have alluded to. We had some success in specifying what Paul Keenan described in the preceding panel as the unquantifiable.

It is too much to present orally. My full testimony, with your permission, I would like to enter in the record along with additional comments by my colleagues, Kurt Schrank and John LeGates. Mr. Schrank's remarks are addressed to the matters of network management and system control in the absence of the old ways. Mr. LeGates' remarks address themselves primarily to some of the questions of domesticity and their consequences.

With your permission, I would like also included in the record—by reference—some of our testimony yesterday before the House where we touched on still other matters. We would be delighted to integrate some of these things for you and the staff and present them as a coherent picture, but my comments today focus on how telecommunications costs and benefits are to be apportioned between consumers of local exchange telecommunications services and consumers of interexchange—long-distance. I believe that continuing controversies on this score are unavoidable. The issue is how best to channel them. The cost picture is where all the action is and continuing controversies on this score are unavoidable. The issue is how best to channel them. They will not disappear. They can't be legislated away.

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■ Congressional testimony

The Program has gained recognition as a source of authoritative, up-to-date, and disinterested testimony on the difficult policy issues raised by the development of information technologies.

1978

- John F. McLaughlin testified before the Senate Subcommittee on Communications on electronic message services and the U.S. Postal Service. 8/2/78

1979

- Anthony G. Oettinger testified before the Subcommittee on Communications of the House Committee on Interstate and Foreign Commerce on the relation between regulation and competition in the telecommunications industry. 5/2/79
- Kurt Borchardt testified before the House Subcommittee on Communications on the use of common carrier regulation and antitrust enforcement as tools to protect the public interest in telecommunications. 5/2/79
- John LeGates testified before the House Subcommittee on Communications on ways to use regulation to protect competition. 5/2/79

Figure 13

**John McLaughlin testifying before the Senate Subcommittee on Communications, August 2, 1978, on electronic message services of the U.S. Postal Service.**

Shown, from left: Henry Geller, Assistant Secretary of Commerce for Communications and Information, Administrator of the National Telecommunications and Information Administration; Philip Nyborg, Vice-president and General Counsel, Computer and Communications Industry Association; William Bolger, Postmaster General; and John McLaughlin.





- Congressional testimony (con't.)
- Teaching

### ***Other Program Activities***

- Anthony G. Oettinger testified before the Subcommittee on Communications of the Senate Committee on Commerce, Science, and Transportation, on how telecommunications costs and benefits can be apportioned between local and long-distance service consumers. 5/3/79
- Kurt Borchardt testified before the Senate Subcommittee on Communications on managing the national information infrastructure (on an analogy with the transportation and energy infrastructures). 5/3/79
- John LeGates testified before the Senate Subcommittee on Communications on ways to identify, define and classify telecommunications facilities and services. 5/3/79
- John McLaughlin testified before the Senate Subcommittee on Communications on the role of the postal service in telecommunications. 5/16/79

**1980**

- Benjamin M. Compaine testified before the Subcommittee on General Oversight and Minority Enterprise of the House Small Business Committee on concentration of ownership in the media. 3/3/80
- John McLaughlin testified before the Subcommittee on Postal Personnel and Modernization of the House Committee on Post Office and Civil Service on the postal service and electronic mail. 4/1/80
- Benjamin Compaine testified before the House Subcommittee on Communications on codifying the FCC media cross-ownership policy. 4/23/80

### **Teaching: Harvard University**

- S-483 Seminar, John F. Kennedy School of Government: Command, Control, Communications and Intelligence in Government and Business. *Anthony G. Oettinger*

Examines the changes since World War II in the conception, technologies and institutional framework of information resources and the implications of these changes for national security policy and linked domestic policies. Develops and evaluates analogies between the functions and the support systems of the intelligence staff and the command-and-control line on the one hand and business management information and decision-making functions and support systems on the other hand. Topics from the National Security Act of 1947 to ongoing reorganizations of command, control, communications and intelligence functions; from Eisenhower's U-2 scandal to strategic peace-keeping through "national means of verification;" from decentralization, delegation and doctrine to central command-and-control and vice-versa; from black chambers to public cryptography; from "shoe-

boxes" to distributed processing. Staff-line and professional-client relationships will be considered.

*Note:* No prior knowledge of computers or information technology is required. Each student will prepare a comprehensive research paper in lieu of examination. Cross-registration by Law or Business School students is encouraged. *Half course (spring term).*

Guest Lecturers:

William Odom, Military Assistant to the Assistant to the President for National Security Affairs.

Raymond Tate, Raymond Tate Associates; formerly Deputy Assistant Secretary of the Navy; Deputy Director of the National Security Agency.

Robert Rosenberg, National Security Council Staff (Policy Assistant to the Assistant to the President for National Security Affairs).

Lee Paschall, Consultant; formerly Director, Defense Communications Agency and Manager, National Communications System.

A. K. Wolgast, Manager, Planning and Analysis Dept., Exxon International.

William E. Colby, of Counsel, Reid & Priest; formerly Director of Central Intelligence.

B. R. Inman, Director, National Security Agency; and Chief, Central Security Service.

Lionel Olmer, Director of International Programs, Motorola, Inc.; formerly Acting Executive Secretary, President's Foreign Intelligence Advisory Board.

● S-484 Seminar, John F. Kennedy School of Government: Special Topics in Information Resources Policy. *Oswald H. Ganley*

During the year 1979-80 the special topic will be Communications and Information in Foreign Policy. The Seminar will be under the supervision of Dr. Oswald H. Ganley, former Deputy Assistant Secretary of State for Technology. Surveys rapid developments in the communications and information (C&I) fields which play a major role in shaping future economic and political events in the U.S., in other industrialized countries, and in the third world. The purpose of the course is to acquaint the student with the main economic, trade, political, cultural, legal, security, and technical forces generated by C&I for which new international policy must be developed. The international policy issues arising from satellite communications, trans-border data flow, communications for development, free flow of information, and direct broadcasting will be presented. The uses of C&I as a diplomatic tool will be explored. All issues will be illustrated by and inte-

- *Teaching (con't.)*

### ***Other Program Activities***

grated into actual foreign policy problems. No prior knowledge of computers or information technology is required. Fundamental technical questions will be explained and demystified to permit policy analysis. Students are expected to prepare a paper in lieu of examination.

*Note:* Open to students in the Kennedy School, Business School, Law School, and other graduate programs of the University. *Half course (fall term).*

#### **Teaching: Harvard College**

- Social Sciences 106, Harvard College: 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).*

- Freshman Seminar Program, Harvard College. *Anthony G. Oettinger*

Anthony G. 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 newsmen'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. *Half course (spring term).*



**Anthony G. Oettinger**

1978

**Presentations**

- Presentation to New England Telephone and Telegraph Company: "Perspectives '78," Boston, Massachusetts. 5/25/78
- Workshop on Information Resources Policy at Harvard University for National Transportation Policy Study Commission, Cambridge, Massachusetts. 7/14/78
- Presentation at Harvard Laboratory for Computer Graphics and Spatial Analysis International Users' Conference on Computer Mapping Software and Data Bases, session on "Future Directions," Computers and Communications: Likely Future Trends in Technological Capability and Regulatory Controls," Cambridge, Massachusetts. 7/28/78
- Lecture at Kennedy School of Government, Executive Program in National Security: "Private and Public Defenses Against Soviet Interception of U.S. Telecommunications: Problems and Policy Points," Cambridge, Massachusetts. 8/18/78
- Presentation to New England Telephone and Telegraph Company: "Technology and Competition," Boston, Massachusetts. 8/22,29/78
- Presentation to Data Processing Management Association: "Information Resources: Policy Options and Consequences," Washington, D.C. 9/12/78
- Address to the 1978 Southern Production Program, Inc. Annual Membership meeting: "The Newspapers' Future Environment," New Orleans, Louisiana. 10/6/78
- Lecture at Ohio State University, series on Technology and Social Change: "Information Resources Policy, Technology and Social Change," Columbus, Ohio 11/2/78
- Address to Payment Systems Inc., The Presidents' Forum on Payments System Change, Critical Issues for the 80's: "Changing Demands on Information Resources in the Financial Services Industry," New York, New York. 11/15,16/78

1979

- Presentation at Communications Networks 79 Conference and Exposition, Keynote Sessions on Communications Networks for the 1980's, Washington, D.C. 1/30/79
- Presentation at AT&T, New York, New York. 2/21/79
- Testimony before the Subcommittee on Communications of the House Committee on Interstate and Foreign Commerce, Washington, D.C. 5/2/79
- Testimony before the Subcommittee on Communications of the Senate Committee on Commerce, Science and Transportation, Washington, D.C. 5/3/79
- Presentation at Local Area Communications Network Symposium on

### Other Program Activities

"Information Resources Policy and Local Area Networks," co-sponsored by The Mitre Corporation and the Institute for Computer Sciences and Technology, National Bureau of Standards, Boston, Massachusetts. 5/9/79

● Address to Institute of Electrical and Electronics Engineers/National Telecommunications and Information Administration Telecommunications Symposium: "The Links Between Technology and Policy," Washington, D.C. 5/22,23/79

● Presentation at luncheon, Fellows of the Institute of Politics, John F. Kennedy School of Government, Harvard University, Cambridge, Massachusetts. 5/23/79

● Address to American Society for Information Science, Boston, Massachusetts. 5/29/79

● Panelist at American Federation of Information Processing Societies, Inc. 1979 National Computer Conference, session on International Banking Automation, New York, New York. 6/5/79

● Presentation to Xerox Corporation's Telecommunications Conference: "Expanding the Horizons of Business Communications," Stamford, Connecticut. 6/28/79

● Presentation to IBM Executives, Armonk, New York. 7/2/79

● Speaker at Harvard Computer Graphics Week '79, Session on New Applications in Education, Instruction and Research, Cambridge, Massachusetts. 7/18/79

● Panelist at Conference on Technology and the Future of Peacekeeping, sponsored by the International Peace Academy, Airlie, Virginia. 11/6-8/79

1980

● Chairman, Panel on Computer Communications Inquiry II, Communications Networks 80 Conference, Washington, D.C. 1/28/80

● Presentation to Operating Company Presidents of Bell System, Basking Ridge, New Jersey. 2/21/80

● Presentation at Arthur D. Little, Inc. on "Mapping the Information Business," Cambridge, Massachusetts. 2/25/80

● Discussant, Session on Information Policy, Eighth Annual Telecommunications Policy Research Conference, Annapolis, Maryland. 4/29/80

● Testimony before the Massachusetts Community Antenna Television Commission, hearings on the deregulation of rates, Boston, Massachusetts. 5/12/80

John C. LeGates

1978

● Workshop on Information Resources Policy at Harvard University for National Transportation Policy Study Commission, Cambridge, Massachusetts. 7/14/78

- Member, Program Advisory Board, Harvard Computer Graphics Week '78, Cambridge, Massachusetts. 7/23-28/78
  - Keynote presentation to Seminar Management Meeting of Marsteller Inc. and Burson-Marsteller, Evanston, Illinois. 8/1/78
  - Keynote presentation at AT&T's Public Relations Policy Seminar, New York, New York. 9/12,29/78
- 1979
- Presentation at Congressional Clearinghouse on the Future's "Dialogues on America's Future," series on the issues of communications and information, Washington, D.C. 3/14/79
  - Presentation to Massachusetts Broadcasters' Association's Spring Meeting, session on "Will Our Future Be Broadcasting or Communications?", Framingham, Massachusetts. 4/5/79
  - Member, Organizing Committee, Seventh Annual Telecommunications Policy Research Conference, Skytop, Pennsylvania. 4/29/79-5/1/79
  - Chairman, "Armchair Discussion with Charles Ferris and Henry Geller," Seventh Annual Telecommunications Policy Research Conference, Skytop, Pennsylvania. 4/30/79
  - Testimony before the Subcommittee on Communications of the House Committee on Interstate and Foreign Commerce, Washington, D.C. 5/2/79
  - Testimony before the Subcommittee on Communications of the Senate Committee on Commerce, Science and Transportation, Washington, D.C. 5/3/79
  - Presentation to IBM Executives, Armonk, New York. 7/2/79
  - Member, Program Advisory Board, Harvard Computer Graphics Week '79, Cambridge, Massachusetts. 7/15-20/79
  - Keynote Address to New England Daily Newspaper Association, "The Changing World of Information," Boston, Massachusetts. 10/15/79
  - Speaker, Session on Policy Issues, 1979 Federal Computer Conference, Washington, D.C. 11/7/79
  - Keynote speaker. The Seventh Annual Conference on The Outlook for the Media, "The Evolving Information Industry," New York, New York. 12/11/79
- 1980
- Presentation to All Party Committee on Information Technologies of the House of Commons, "Rethinking the Telecommunications Monopoly," London, England. 2/7/80
  - Presentation to the German Parliamentary Committee for Data Protection, German Consulate, Boston, Massachusetts. 6/4/80

### Other Program Activities

**John McLaughlin**

1978

- Participant, Organization Conference, Aspen Institute Task Force on the Future of the Postal Service, Aspen, Colorado. 7/10-13/78
- Workshop on Information Resources Policy, National Transportation Policy Study Commission, Harvard University, Cambridge, Massachusetts. 7/14/78
- Presentation: "The Postal Service and Telecommunications Policy," AT&T Management Seminar, New York, New York. 7/20/78
- Testimony before the Subcommittee on Communications of the Senate Committee on Commerce, Science and Transportation, "Electronic Message Services and the U.S. Postal Service," Washington, D.C. 8/2/78
- Presentation: "Postal Reorganization: The U.S. Experience," Canada Post, Ottawa, Ontario. 8/30,31/78
- Interview on Arbitrated Settlement of Postal Labor Negotiations, National Public Radio's "All Things Considered," Washington, D.C. 9/30/78
- Presentation: "The Financial & Economic Outlook for the U.S. Postal Service," Graphic Communications Computer Association Printer Publisher Symposium, Palm Beach, Florida. 10/30/78
- Panelist, Center for Policy Process, Seminar on "The New Information Society," Washington, D.C. 10/31/78

1979

- Presentation: "Electronic Message Systems Panel," Communications Networks Conference, Washington, D.C. 2/1/79
- Presentation: "Postal Problems and Electronic Mail," Conference on Automated Business Communications, sponsored by International Data Corporation, Scottsdale, Arizona. 4/3/79
- Testimony before Subcommittee on Communications, Senate Committee on Commerce, Science & Transportation, "U.S. Postal Service and Telecommunications," Washington, D.C. 5/16/79
- Presentation to IBM Executives, Armonk, New York. 7/2/79
- Discussant, Aspen Institute Task Force on the Future of the Postal Service, Washington, D.C. 9/26/79 and 11/16/79

1980

- Presentation: "A Research Approach to Postal Policy Issues," to the U.S. Postal Rate Commission, Washington, D.C. 1/15/80
- Testimony before Subcommittee on Postal Personnel and Modernization of the House Committee on Post Office and Civil Service, "The U.S. Postal Service and Telecommunications: Beyond E-Com," Hearings on Electronic Mail, Washington, D.C. 4/1/80

|                          |      |   |
|--------------------------|------|---|
| <b>Benjamin Compaine</b> | 1979 | <ul style="list-style-type: none"> <li>● Presentation to IBM Executives, Armonk, New York. 7/2/79</li> <li>● Participant, Aspen Conference on Teletext and Viewdata, Aspen, Colorado. 8/12-15/79</li> <li>● Address to New England Daily Newspaper Association: "Threats and Opportunities for Newspapers in the 1980s," Boston, Massachusetts. 10/19/79</li> </ul>   |
|                          | 1980 | <ul style="list-style-type: none"> <li>● Testimony before the Subcommittee on General Oversight and Minority Enterprise of the House Small Business Committee, Hearings on Concentration of Ownership in the Media, Washington, D.C. 3/3/80</li> <li>● Keynote address before the Suburban Newspapers of America's Annual Editorial Conference: "The Coming Communications Evolution: Choices for the 80s and Beyond," Washington, D.C. 3/19/80</li> <li>● Discussion Leader, Information Industry Association meeting on "Planning Product Innovation," Washington, D.C. 4/9/80</li> <li>● Testimony before Subcommittee on Communications of the House Committee on Interstate and Foreign Commerce, Hearings on Codifying FCC Media Cross-Ownership Policy, Washington, D.C. 4/23/80</li> <li>● Address to the Paine Webber Mitchell Hutchins Inc. Consumer Technology/Home Video Revolution Conference: "The Other Side of the Home Information Revolution," Columbus, Ohio. 5/7/80</li> <li>● Seminar Leader, session on Technological Changes in the Media, Washington Journalism Center, Washington, D.C. 5/14/80</li> <li>● Paper presented, "Shifting Boundaries in the Information Marketplace," American Library Association colloquium on An Information Agenda for the 1980's. 6/27,28/80</li> </ul> |
| <b>Oswald H. Ganley</b>  | 1979 | <ul style="list-style-type: none"> <li>● Presentation to the American Federation of Information Processing Societies: "Privacy—An International Issue," Washington, D.C. 3/2/79</li> <li>● Lecture at the International Communications Agency: "The Economics of Communications and Information," Washington, D.C. 3/12/79</li> <li>● Lecture at Fletcher School of Law and Diplomacy: "Technology and Free Flow of Information," Medford, Massachusetts. 7/7/79</li> <li>● Resource person at preparatory conference of White House Conference on Libraries and Information Services: "International Information Exchange," Washington, D.C. 7/30,31/79</li> <li>● Lecture at International Communications Agency: "Communications and Information in Modern Diplomacy," Washington, D.C. 9/28/79</li> <li>● Presentation to the Association for Canadian Studies in the United States: "The Political Perspective of Communications and Information by</li> </ul>   |



# **Other Program Activities**

the Government of Canada," Washington, D.C. 9/29/79

- Presentation at U.S.-Japan Symposium on International Communications, Fletcher School of Law and Diplomacy: "Transborder Data Flow: Competition or Strangulation," Medford, Massachusetts. 10/11/79
- Presentation at U.S.-ASEAN Symposium, Fletcher School of Law and Diplomacy: "Communications in Asia," Medford, Massachusetts. 11/29/79
- Presentation at Second Annual Conference on Transnational Data Flows: "Transborder Data-Flow—A Significant Factor in World Trade?," Washington, D.C. 12/2/79
- Lecture at Center for International Visitors: "Effects of the Communications Revolution on Developing Countries," Boston, Massachusetts. 12/26/79

1980

- Lecture at Executive Seminar in National and International Affairs, U.S. Department of State: "Communications and Information in International Politics," Washington, D.C. 1/8/80
- Lecture at Institute of Politics, Harvard University: "New Communications Technologies and International Politics," Cambridge, Massachusetts. 3/19/80
- Presentation at the American Society of International Law: "Legal Issues of Transborder Data Transmission," Washington, D.C. 4/18/80
- Presentation at Eighth Annual Telecommunications Policy Research Conference: "The U.S.-Canadian Communications Border," and discussant on a panel on "International Perspectives on Telecommunications Policy," Annapolis, Maryland. 4/28/80

**Kurt Borchardt**

1979

- Testimony before the Subcommittee on Communications of the House Committee on Interstate and Foreign Commerce, Washington, D.C. 5/2/79
- Testimony before the Subcommittee on Communications of the Senate Committee on Commerce, Science and Transportation, Washington, D.C. 5/3/79

**William H. Read**

1979

- Participant, Murrow Symposium on International Communications, Washington State University, Pullman, Washington. 3/15-17/79
- Speaker, "The World Information Explosion," Diplomacy Seminar Series, Fletcher School of Law and Diplomacy, Tufts University, Medford, Massachusetts. 10/17/79
- Participant in conference on U.S.-Japanese Problems, sponsored by Toyota Foundation, Fletcher School of Law and Diplomacy, Tufts University, Medford, Massachusetts. 10/79

- Presentations

William Read (con't.)  
Charles Benda

- Outside publications

Anthony Oettinger  
John McLaughlin  
Benjamin Compaine  
Oswald Ganley

**Charles G. Benda**

1978

- Participant in seminar, Associated States of South East Asia (ASEAN), held for communications experts at M.I.T., Cambridge, Massachusetts. 10/79

1979

- Speaker at the Harvard Institute for International Development Fourth Public Enterprise Workshop, "Public Enterprise in the U.S." 8/9/78
- Presentation at the Eastern Sociological Society, "State Organizations and Policy Formation: The Reorganization of the Post Office Department," New York, New York. 3/17/79

**Outside Publications**

**Anthony G. Oettinger**

- Contributing consultant, *Into the Information Age: A Perspective for Federal Action on Information*, Vincent Giuliano, et al., Arthur D. Little, Inc., American Library Association, Chicago, 1978.
- "Information Resources: Old Questions, New Choices," *Bulletin of the American Society for Information Science*, Vol. 6, No. 1, October 1979, pp. 16-19.
- Interviewed in "Counting the New Ways Computer Will Affect Us," *LI*, October 21, 1979, pp. 34-52.

**John F. McLaughlin**

- *Telephone-Letter Mail Competition: A First Look*, discussed in IDC Distributed Processing Newsletter, 1980.

**Benjamin Compaine**

- *Consumer Magazines in the 1980's*, Knowledge Industry Publications, White Plains, N.Y., 1979.
- *Who Owns the Media? Concentration of Ownership in the Mass Communications Industry*, ed., Knowledge Industry Publications, White Plains, N.Y., 1979.
- *The Newspaper Industry in the 1980's: An Assessment of Economics and Technology*, Knowledge Industry Publications, White Plains, N.Y., 1979.
- "The Magazine Industry: Developing the Special Interest Audience," *Journal of Communication*, Spring 1980, pp. 98-103.
- "The 1980's: An Overview," *Presstime*, January 1980, pp. 6-8.

**Oswald H. Ganley**

- *Technology and Basic Human Needs: Some Policy Considerations*, background paper for the Consultative Group for the Colombo Plan Ministerial Meeting, December 1978.
- "Aerospace Technology Transfer," *Export of Aerospace Technology*, 15th Goddard Memorial Symposium 146, 1978.



- *Outside publications*

Oswald Ganley (con't.)  
William Read  
Charles Benda  
G. Hamilton Loeb

## Other Program Activities

- "Basic Human Needs as a Development Strategy," Montgomery, Ganley, et al. Consultant's Working Paper for Colombo Plan Conference, 1978.
- "The Vienna Symposium," *Computer Law and Tax Report*, 1978.
- "International Data Flows: Shall We Have International Cooperation?" *Information Societies: Comparing the Japanese and American Experiences*, Alex S. Edelstein, John E. Bowes and Sheldon M. Harsel, eds., International Communication Center, University of Washington, Seattle, 1978.
- "Communications and Information Resources in Canada," *Telecommunications Policy*, December 1979.
- "Transborder Data Flow—A Significant Factor in World Trade?" *Proceedings, Second Annual Conference on Transnational Data Flows*, December 1979.
- "The Political Perspectives of Communications," *The Information Society*, Summer 1980.
- "U.S.-Canadian Relations," *Datamation*, September 1980.
- "Transborder Data Flows: The Environment in Which it Operates," *Proceedings, American Society of International Law*, 1980.
- "Comments on 'Privacy Implications of Transborder Data Flows,'" *Computers and Privacy in the Next Decade*, Academic Press, 1980.
- "Transborder Data Flow: Competition or Strangulation?" for presentation at U.S.-Japan Symposium, Boston, October 11-14, 1979, Occasional Paper, Edward R. Murrow Center for Public Diplomacy, Fletcher School of Law and Diplomacy, Medford, Ma., 1980.

### William H. Read

- "Information as a National Resource," *Journal of Communication*, Winter 1979.

### Charles G. Benda

- "State Organizations and Policy Formation: The Reorganization of the Post Office Department," *Politics and Society*, 1979.

### G. Hamilton Loeb

- "The Communications Act Policy Toward Competition: A Failure to Communicate," *Duke Law Journal*, Vol. 1978, No. 1, March 1978.

**Principals**

**Anthony G. Osttinger**  
Chairman



**Anthony G. Oettinger** is Chairman of the Program on Information Resources Policy and of the Center for Information Policy Research. He is Gordon McKay Professor of Applied Mathematics, Professor of Information Resources Policy, and a member of the faculty of the Kennedy School of Government at Harvard University. He was President of the Association for Computing Machinery from 1966 to 1968, Chairman of the Computer Science and Engineering Board of the National Academy of Sciences from 1968 to 1972, and chairman of the Massachusetts Cable Television Commission between 1975 and 1979. He was a consultant to the Executive Office of the President through the National Security Council from 1975 to 1977, and the Office of Science and Technology from 1961 to 1973. Currently he serves as a member of the Defense Communications Agency's Scientific Advisory Group and of the Naval Research Advisory Committee's panel on Command, Control, Communications and Intelligence.

**John C. LeGates**  
Director



**John C. LeGates** is Director of the Program and President of the Center. He came to the Program from the business community. As executive director of the Educational Information Network at EDUCOM, he directed development of nationwide computer communications networks and was a member of the ARPANET NWG, the core design team. As Vice-President of Cambridge Information Systems, Inc., he was national director of that company's marketing and technical personnel and project director for the Massachusetts General Hospital Integrated Information System. He was in charge of exploring the use of computers in education at Bolt, Beranek and Newman. His studies were in mathematics (Harvard) and philosophy (Yale).

**John F. McLaughlin**  
Executive Director,  
Postal and Allied Arenas



**John F. McLaughlin** is Executive Director, Postal and Allied Arenas. He came to the Program from the U.S. Postal Service, where he founded and then directed the Office for Strategic Planning. He is the author of *The Necessity for Change*, a study of alternative futures for the Postal Service.

- *Principals (con't.)*
- *Reviewers*

## Program Personnel

**Benjamin M. Compaine**  
Executive Director,  
Media and Allied Arenas



**Benjamin M. Compaine** is Executive Director, Media and Allied Arenas. He joined the Program from Knowledge Industry Publications, Inc., where he designed and edited projects in library automation and conducted economic and marketing studies of the mass media industry. His most recent books are *Who Owns the Media? Concentration of Ownership in the Mass Communications Industry* (Crown, 1979), and *The Newspaper Industry in the 1980's: An Assessment of Economics and Technology* (Knowledge Industry Publications, 1980). He has an MBA from the Harvard Business School and a Ph.D. from Temple University.

**Oswald H. Ganley**  
Executive Director,  
International and Allied Arenas



**Oswald H. Ganley** is Executive Director, International and Allied Arenas. A former career foreign service officer, he served as Deputy Assistant Secretary of State for Science and Technology, Director of the State Department's Office of Soviet and Eastern European S & T Affairs, and Diplomatic Consultant to the President's Science Advisor. He has been especially involved in diplomatic developments brought about by rapid technological change, industrialization and development, East-West relations, and communications and information. He served as U.S. Delegate and Vice Chairman of the OECD Committee for Science and Technology Policy. He was Science and Technology Counselor at American Embassies Rome and Bucharest. Before joining the Government he served in a number of research and management positions in industry including Assistant Director of International R & D at Merck & Co. He holds a Ph.D. in the sciences and an MPA in economics from Harvard.

## Reviewers

The Program deeply appreciates the time and thought the following people have given 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.

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| Dean Gillette         | Frederick A. Miller   | John T. Walter      |
| James Goodale         | Hugh Miller           | Vieve Weldon        |
| Robert E. Gradle      | Elliott A. Minsker    | John Wohlstetter    |
| Robert Graff          | R. V. Mrozinski       | Francis W. Wolek    |
| C. Gus Grant          | Jon Mulford           | Richard Zeckhauser  |
| James Grant           | Earl Mullen           | Edward Zimmerman    |
| Henry Grunwald        | Michael M. Murphy     |                     |

## Program Personnel

### Core Program Staff as of June 30, 1980

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| Benjamin M. Compaine<br>Executive Director<br>Media and Allied Arenas | Karin Calvert<br>Assistant Librarian                  |                                 |

### Faculty Associates

|             |                    |
|-------------|--------------------|
| Daniel Bell | Irwin C. Bupp, Jr. |
|-------------|--------------------|

### Research Assistants

|                    |                    |                    |
|--------------------|--------------------|--------------------|
| Brooke Barr        | Ellen Friedenberg  | Larry S. Levine    |
| Jennifer Berg      | Robert C. Godbey   | Edward Munoz-Perou |
| Daniel Berman      | David Goldsberry   | Vivina Ree         |
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| Laura Brody        | Philip R. Hochberg | Ruth Whaley        |
| David Dominik      | Alan Jakimo        |                    |
| Francesca Frey     | Warren G. Lavey    |                    |

### Research Fellows

|                    |                  |                    |
|--------------------|------------------|--------------------|
| Kurt Borchardt     | Konrad K. Kalba  | Richard J. Solomon |
| John H. Clippinger | William H. Read  | Nikki J. Zapol     |
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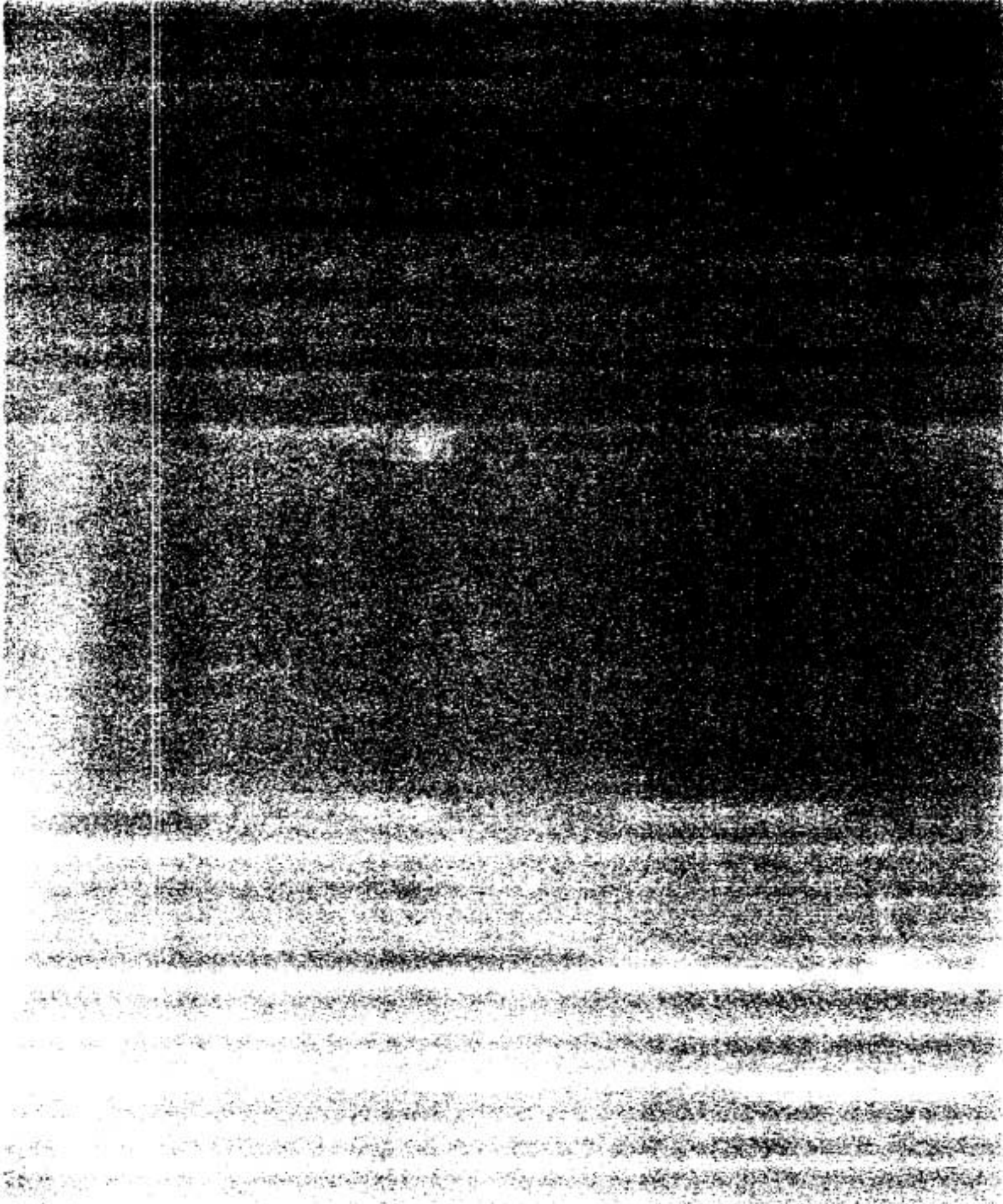
### Consulting Editor

Fred Hapgood

### Research Contributors

|                  |                |                  |
|------------------|----------------|------------------|
| Charles G. Benda | Bernard Gilman | Christine Urban  |
| Joel Fleischman  | Robert H. Klie | Robert D. Willig |
| Oswald H. Ganley | Lee Paschall   |                  |





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