

Northwestern Journal of International Law & Business

Volume 5
Issue 3 *Fall*

Fall 1983

United States International Communications and Information Policy: A Crisis in the Making?

Dante B. Fascell

Virginia M. Schlundt

Follow this and additional works at: <http://scholarlycommons.law.northwestern.edu/njilb>



Part of the [Communications Law Commons](#), and the [International Law Commons](#)

Recommended Citation

Dante B. Fascell, Virginia M. Schlundt, United States International Communications and Information Policy: A Crisis in the Making?, 5 *Nw. J. Int'l L. & Bus.* 486 (1983-1984)

This Perspective is brought to you for free and open access by Northwestern University School of Law Scholarly Commons. It has been accepted for inclusion in Northwestern Journal of International Law & Business by an authorized administrator of Northwestern University School of Law Scholarly Commons.

United States International Communications and Information Policy: A Crisis in the Making?

*Dante B. Fascell**

*Virginia M. Schlundt***

I. INTRODUCTION

The arrival of the highly-touted "information age" may precipitate a crisis for the United States if attention is not directed toward the impact of rapidly-changing communications technology on the American economy and society. Most discussions about the implications of the information age have centered on specific problem areas—such as regulation of transborder data flows, allocation of radio frequencies and deregulation of telecommunications services.¹ This Perspective, however, will attempt to provide a cohesive discussion by examining the components of United States international communications and information policy, demonstrating their interrelationships, and pinpointing some of the implications of a failure to understand and harness the "information genie." The scope of this examination must be interna-

* Chairman, Committee on Foreign Affairs, U.S. House of Representatives.

** Staff Director, Subcommittee on International Operations, Committee on Foreign Affairs, U.S. House of Representatives.

¹ See, e.g., Fishman, *Introduction to Transborder Data Flows*, 16 STAN. J. INT'L L. 1 (1980); Novotny, *Transborder Data Flow Regulation: Technical Issues of Legal Concern*, 3 COMPUTER/L.J. 105 (1981); Rice, *Regulation of Direct Broadcast Satellites: International Constraints and Domestic Options*, N.Y.L. SCH. L. REV. 813 (1980); Rothblatt, *Satellite Communications and Spectrum Allocation*, 76 AM. J. INT'L L. 56 (1982); OFFICE OF TECHNOLOGY ASSESSMENT, PUB. NO. OTA-CIT-163, RADIOFREQUENCY USE AND MANAGEMENT: IMPACTS FROM THE WORLD ADMINISTRATIVE RADIO CONFERENCE OF 1979, 97th Cong., 1st Sess. 6 (1982); MAJ. STAFF OF SUBCOMM. ON TELECOMMUNICATIONS, CONSUMER PROTECTION & FINANCE, HOUSE COMM. ON ENERGY & COMMERCE, 97TH CONG., 1ST. SESS., TELECOMMUNICATIONS IN TRANSITION: THE STATUS OF COMPETITION IN THE TELECOMMUNICATIONS INDUSTRY (Comm. Print 1981).

tional because information is not constrained by national borders. Policymakers will be required to synthesize competing and complementary interests in order to develop coherent, rational and effective policies that will promote United States interests at home and abroad. Ultimately, however, a solution to the problems of the information age will require an active partnership between the government and the private sector.

The actors in the information arena include providers of financial services,² the news media,³ educators⁴ and telecommunications suppliers.⁵ They organize, distribute, analyze and impart information obtained from investigation, study and instruction, or enable others to do so.⁶ Their activities are influenced by policies dealing with trade,⁷ bilateral and multilateral assistance,⁸ national security⁹ and technological development.¹⁰ Coordination and cooperation among these disparate entities is, of course, difficult to achieve. One solution would be to place primary responsibility for monitoring areas of concern with the State Department's Office of the Coordinator for International Communications and Information Policy.¹¹ This office would draw together government¹² and private sector participants for exchanges of ideas, and would guide decisionmaking in order to develop "the" national policy for international communications and information.

II. THE ROLE OF COMMUNICATIONS AND INFORMATION SERVICES IN THE WORLD ECONOMY

Until recently, information gathering has been a fairly time-consuming process because it was overwhelmingly manual in nature. Communications has for centuries involved symbols engraved or

² See *infra* notes 29-34 and accompanying text.

³ See *infra* notes 35-42 and accompanying text.

⁴ See *infra* notes 43-49 and accompanying text.

⁵ See *infra* notes 93-98 and accompanying text.

⁶ One writer has described information suppliers as those companies which "produce, distribute, store or process information as their main product or else supply others with the means for doing so." Oettinger, *Information Resources: Knowledge and Power in the 21st Century*, Sci., July 4, 1980, at 191, 192.

⁷ See *infra* notes 64-68 and accompanying text.

⁸ See *infra* notes 69-79 and accompanying text.

⁹ See *infra* notes 80-92 and accompanying text.

¹⁰ See *infra* notes 93-98 and accompanying text.

¹¹ See *infra* notes 99-100 and accompanying text.

¹² Government actors include the departments of State, Treasury, Defense, Commerce, Education and Labor; independent agencies such as the Federal Communications Commission; and other federal agencies such as the U.S. Information Agency, the Agency for International Development, the Central Intelligence Agency and other members of the intelligence community.

printed on tangible media such as stone tablets and paper. While the telegraph and the telephone provided ways to communicate quickly, there existed no way to transmit instantly a written record of the information communicated.¹³ Over the past twenty years, however, information technologies—the machinery and methods by which information is produced, processed, stored or transmitted—have enormously increased the speed with which information is transmitted and have made possible its transmission in new forms.¹⁴

The United States' economy shows the effect of this revolution from "industrial age" to "information age." No longer can it be said that the United States has a "smokestack" economy. Approximately thirteen percent of the United States workforce is still in manufacturing.¹⁵ Recent government statistics confirm that service trades—of which the information industry is a prime example—are now the dominant component of the United States economy.¹⁶ Information suppliers include such seemingly disparate entities as news media institutions, the data processing industry, the entertainment industry, the educational system, federal information institutions,¹⁷ the banking system, the insurance industry, and legal services. No matter how these industries develop, process, transmit or store information—by the use of books, magazines, newspapers, films, file cards, magnetic tapes, videodiscs or silicon chips—the dominant characteristic of the new information industries is that they are knowledge-intensive.

Accepting the advent of the information age is not nearly as difficult as finding a term which describes the technology in all its variations. Writers have coined several different terms for the information

¹³ A letter, for example, was a form of written communication, but could be "transmitted" only by the means of transportation available at the time. Until the advent of computers linked by telephone lines—and later, satellites—instantaneous transmittal of written messages was impossible. See Grossman, *Data Communications*, ELECTRONIC DESIGN, Sept. 1, 1977, at 86, 86; McDermott, *Modern Media*, *id.* at 98.

¹⁴ For example, a computer linked to Nexis and the New York Times Information Bank can provide, in seconds, access to news articles printed years before. Miller, *Information Please, and Fast—Reporting's Revolution: Data Bases*, WASH. JOURNALISM REV., Sept. 1983, at 51, 52.

¹⁵ These workers are distinguished "from those who manage or sell or account for the goods made by others in firms labeled 'manufacturing.'" Birch, *Who Creates Jobs?*, 65 PUB. INT. 3, 14 n.2 (1981).

¹⁶ Livingston, *Observations on the Role of Services in International Trade*, FLETCHER F., Winter 1982, at 91, 92-94.

¹⁷ Such institutions range from the Department of State and agencies within the intelligence community, which process information necessary to protect and promote national security, to the Census Bureau, which organizes information of use to other federal agencies.

revolution: "teleinformatics,"¹⁸ "informatics,"¹⁹ *informatique*,²⁰ *télématique*,²¹ and "communications."²² Although these terms are not synonymous, they all express the convergence of information and communications technologies, the common denominator of the information revolution.²³ In addition, this Perspective's title uses a term which is useful for purposes of discussing policy problems: "International communications and information policy" suggests the merger of communications and information into one field of endeavor.²⁴ This struggle to define terms is offered, however, more to describe the problem than to settle on a term.

As mentioned above, the problems raised by the information age have in the past been discussed in isolation. For example, transborder data flows²⁵ have most commonly been discussed in relation to trade

¹⁸ Eger, *The Global Phenomenon of Teleinformatics: An Introduction*, 14 CORNELL INT'L L.J. 203, 204 (1981).

¹⁹ The Intergovernmental Bureau for Informatics (IBI), formed under the auspices of the United Nations, defines "informatics" as "the rational and systematic application of information to economic, social and political development." INTERGOVERNMENTAL BUREAU FOR INFORMATICS, IBI Doc. No. DG 1-04, INFORMATICS: ITS POLITICAL IMPACT 2 (1980). Note, however, that the Barnhart Dictionary of New English defines "informatics" simply as "another name for information science." BARNHART DICTIONARY OF NEW ENGLISH SINCE 1963, at 224 (1st ed. 1973).

²⁰ While the French term *informatique* translates into English as "informatics," it is generally used to refer to data processing. See Stratte-McClure, *French Telecommunications: Digital Technology and the Télématique Program*, SCI. AM., Sept. 1980, at 25, 25 (advertising supplement).

²¹ The word "telematics" (in French, *télématique*) has been coined to describe the "interconnection between computers and telecommunications." S. NORA & A. MINC, L'INFORMATISATION DE LA SOCIÉTÉ [REPORT ON THE COMPUTERIZATION OF SOCIETY] 4 (1978). The Nora-Minc report was commissioned by the President of France in 1976 "to stimulate thinking on how the computerization of society should be carried out." *Id.* at xvii. The report developed the "*télématique* plan," which became France's blueprint for information policy as well as technology. See also Stratte-McClure, *supra* note 20, at 25; Gillette, *Telematics: The Integration of Computing and Communications*, COMPUTERWORLD EXTRA!, Mar. 18, 1981, at 33.

²² Oettinger, *supra* note 6, at 191. Oettinger coined the word "communications" to describe the merger of computers and communications. *Id.* Nora and Minc make an interesting point about the difference between "communications" and *télématique*: "The fact that the American term stresses the computer and ours the telecommunications aspect is not accidental. It expresses a set of power relationships that in France give the upper hand to the latter." S. NORA & A. MINC, *supra* note 21, at 197 n.1.

²³ One notable example of this convergence is the development of American Telephone and Telegraph (AT&T), the "communications" giant. AT&T now has computer switching systems that handle more communications traffic in a faster, more efficient manner than the mechanical switching systems of just a few years ago. See S. KLEINFELD, THE BIGGEST COMPANY ON EARTH: A PROFILE OF AT&T 301 (1981).

²⁴ Perhaps a more accurate word than "international" would be "transnational," because the impacts of the new technologies are felt "across" ("trans") national boundaries rather than solely "between" ("inter") nations.

²⁵ Transborder data flows can be "broadly defined as the electronic movement of data between countries." Fishman, *supra* note 1, at 1.

barriers or personal privacy protection.²⁶ Discussions in the United Nations Educational, Scientific and Cultural Organization (UNESCO) about the free flow of information and the New World Information Order²⁷ have concentrated on the philosophical struggle between those nations that want to promote information flow and those nations that consider restrictions on information flow, such as prior consent, to be fundamentally important.²⁸ When there is clear agreement on a subject's definition, "compartmentalized" discussions such as these may be desirable and useful. But when, as here, there is no clear agreement on definitions, discussions limited in scope may shed light only on the interests of one group, while failing to deal with the obstacles presented by related outside interests. Until the participants in the information age regularly relate to each other, the progress made by any one group will be haphazard, uncertain and ultimately unprofitable—or at least considerably less profitable than it could be.

III. PARTICIPANTS IN THE INFORMATION AGE

A. *The Financial Community*

The financial community has traditionally consisted of banks, savings and loan institutions, credit card companies, economic and econometric consulting firms, securities and investment institutions, and other providers of financial services. Today, however, this "community" is owned and dominated by conglomerates whose original interests had little to do with financial services.²⁹ Another recent

²⁶ See, e.g., Recommendations of the Council Governing the Protection of Privacy and Transborder Flows of Personal Data, OECD Doc. C(80)58 (Oct. 1, 1980); Schiller, *Sources of Opposition to U.S. Information Supremacy*, in TELECOMMUNICATIONS POLICY HANDBOOK 258 (J. Schement, F. Gutierrez & M. Sirbu, eds. 1982); Markoski, *Telecommunications Regulations as Barriers to the Transborder Flow of Information*, 14 CORNELL INT'L L.J. 287 (1981). Yet, the need for free information flow across national boundaries also affects such matters as the ability of a nation to conduct its diplomatic affairs, the ability to receive worldwide press coverage, and the ability to develop an educational system.

²⁷ According to one commentator, "under the NWIO [New World Information Order], the LDCs [less developed countries] would have equal access to the world's store of knowledge and other information resources and would control foreign media reporting from their countries." Bortnick, *International Information Flow: The Developing World Perspective*, 14 CORNELL INT'L L.J. 333, 344 (1981).

²⁸ See, e.g., *id.* at 345-48; Righter, *Battle of the Bias*, 34 FOREIGN POL'Y 121 (1979); Schiller, *supra* note 26, at 266-70.

²⁹ Sears, Roebuck and Company, for example, is the largest savings and loan holding company in the United States. CITIBANK, N.A., CONSUMER BANKING QUIZ (on file in the Nw. J. INT'L L. & BUS. offices) [hereinafter cited as CONSUMER BANKING QUIZ]. If Sears were to be ranked by size among commercial banking institutions, it would be the sixteenth in the nation. *Id.* Gulf + Western Industries, Inc., not only owns a bank and a consumer finance company, but also owns a major motion picture company. *Id.*

development is the financial community's reliance on communication and information technologies. In the 1800s, banks and stock markets were both competitive and sensitive to economic change, but their reactions were limited by relatively slow communications.³⁰ As the telecommunications industry developed, financial information traveled faster, banks and stock markets grew, and their reaction time decreased.³¹ Today, most funds transfers and other financial transactions are conducted via telecommunications connections: links between communications satellites and data processing networks, which permit long-distance access to stored data.³² Thus, the prevalence of electronic funds transfers is one result of the information age. The spread of United States banks overseas is another. Transactions which once took days or hours now require only minutes or even seconds. As a result, the dependence of the banking industry on telecommunications and information technologies has become absolute. A failure of the banking telecommunications network would spell disaster not only for individual financial institutions, but also for their conglomerate parents and the international community in which they participate.

Thus, while the Federal Reserve Act³³ may govern the speed of United States bank activities overseas,³⁴ more important influences on the financial community are policies governing the use of communication satellites. Yet regulation of satellites is not the preserve of the financial community. Such issues are discussed bilaterally and multilaterally by governments, as well as by the private sector, in the contexts of trade, economic assistance to developing nations, public

³⁰ See Smith, *The Wiring of Wall Street*, N.Y. Times, Oct. 23, 1983, § 6 (Magazine), at 44.

³¹ For example,

[f]ifteen years ago, the New York Stock Exchange had to close down one day a week under the pressure of trading 11 million shares a day. Next month, the Big Board expects the split of the American Telephone and Telegraph Company into eight companies to add, for a period of several months, about 15 million shares to a daily trading volume that often reaches 100 million shares. Along with the huge volume has come unprecedented volatility. Computer technology gives money managers instant access to vast arrays of trading data. And with such advances as the 40-button telephone-computer console, traders can now sweep hundreds of millions of dollars out of one group of stocks and into another in a matter of minutes.

Id. at 46.

³² Indeed, with the new technology, individuals can now use personal computers to trade stocks—and soon, to handle banking transactions—from the home. *Id.* at 109. This will revolutionize the financial community further. As Walter B. Wriston, chairman of Citicorp, noted:

What will be the value of a seat on the New York Stock Exchange or a brick-and-mortar bank branch in an environment where every home has access to the Dow Jones and its bank accounts simultaneously? In this kind of world, electronics become money, credit, securities or savings and are more real than places.

Id.

³³ Ch. 6, § 1, 38 Stat. 251 (1913) (codified as amended in scattered sections of 12 U.S.C.).

³⁴ *Id.* at §§ 601-604 & 611-632.

diplomacy, restrictions on transborder data flows, news media interests, and satellite systems development. How, then, can the financial community enter into such discussions?

B. The News Media

Another participant in the information age is the news industry, which includes television, radio, newspapers, magazines, newsletters, wire services, and other broadcast and print media. Over the years, United States news media institutions have expanded overseas and developed publications tailored to international audiences. The *International Herald Tribune* and *Newsweek International* are typical examples. These publications cater to the international elite: government leaders, diplomats, business executives and other decisionmakers. One positive effect of this information flow is that it facilitates international negotiations, because diplomats often share common sources of information. News media entities have also expanded beyond their traditional fora. The Reuters wire service, for example, has installed video display terminals at banks and exchanges around the world, thereby creating a global trading network independent of traditional financial institutions.³⁵ The New York Times Company not only owns various newspapers, but also has developed a cable communications network and the New York Times Information Bank, a comprehensive news data bank.³⁶

The success of news media operations, however, depends not only on the ability of journalists to communicate within the industry via telecommunications networks, but also on their unhindered freedom to discover and report the news. Some nations impair media operations by requiring journalists to be licensed or accredited, by denying their visas, or by requiring prior consent for the publication or broadcast of information.³⁷ Such hindrances are prohibited in the United States by

³⁵ Reuters' Monitor service provides information about "the foreign exchange, money, commodities and shipping markets." Bulkeley, *Electronic Gear Aims to Help Folks Cope With Data Deluge*, Wall St. J., Aug. 14, 1981, § 2, at 25, col. 1; CONSUMER BANKING QUIZ, *supra* note 29.

³⁶ See *Times Buys 2 Cable TV Companies*, N.Y. Times, July 26, 1980, at 24, col. 6; *Times Offers Data Service*, N.Y. Times, Sept. 28, 1981, at D2, col. 5.

³⁷ For a discussion of ways in which host nations harass or manipulate foreign correspondents, see, e.g., Buie, *et al.*, *Foreign Governments Are Playing Our Press*, WASH. JOURNALISM REV., Oct. 1983, at 21.

For a discussion of government ownership of news media in various nations, see GLOBAL JOURNALISM: A SURVEY OF THE WORLD'S MASS MEDIA (J. Merrill ed. 1983) at 29-34 (discussing governments and journalism generally), 81-107 (discussing government ownership and control of the news media in Soviet bloc nations).

the first amendment,³⁸ which guarantees freedom of speech and the press.³⁹ The few words of that amendment express values cherished by citizens of the United States. These values ultimately control United States policy judgments in all areas of the information arena. From the United States' point of view, not only do these values encourage the free flow of information upon which the news media depend for their livelihood, but the importance of these democratic values justifies diplomatic efforts to encourage other nations to adopt them.

Yet protecting the media's freedom abroad is a challenge, because the international community generally is not receptive to the democratic value of free information flow. Disputes in UNESCO and other international fora over issues related to the Third World concept of a New World Information Order also indicate this lack of receptivity.⁴⁰ Some governments use many other domestic censorship methods which are designed to restrict the flow of information to Western news media. Such methods include harassment of foreign reporters, monopolies granted to state-owned news media, denial of visas to foreign correspondents, and excessive hospitality through carefully supervised tours and access to "approved" news sources.⁴¹ Even more insidious is self-censorship, which can result from the harassment or threat of expulsion of journalists.

One way for developing nations to hasten their development is to unify their populations by building a communications infrastructure. This task is the challenge presented by the New World Information Order.⁴² The desire of developing nations to expand and modernize

³⁸ U.S. CONST. amend. I: "Congress shall make no law . . . abridging the freedom of speech, or of the press"

³⁹ *See, e.g.*, *New York Times Co. v. Sullivan*, 376 U.S. 254, 269 (1964) ("The general proposition that freedom of expression upon public questions is secured by the First Amendment has long been settled by our decisions.").

⁴⁰ For example, the debate over government control of the press was fueled when in 1976 the Soviet Union introduced to the UNESCO General Assembly a draft Declaration on Mass Media. That Declaration, and a later revised version, restated the principles encompassed by the New World Information Order. Bortnick, *supra* note 27, at 345-46. Resolutions passed by the members of the IBI also demonstrated a willingness to regulate transborder data flows in order to protect "national sovereignty, cultural identity and technological progress." *International Data Flow: Hearings Before a Subcomm. of the House Comm. on Government Operations*, 96th Cong., 2d Sess. 5-8 (1980).

⁴¹ *See supra* note 37.

⁴² According to one commentator,

[t]he NWIO promotes these broader concerns by emphasizing the need to achieve a balance between developed and developing nations that will enable the LDCs to become active participants in the world marketplace and partners in an increasingly interdependent world. The LDCs view this balance not simply in terms of the news media, but equally in terms of access to scientific and technical information, telecommunications facilities, and the distribution of the frequency spectrum.

Bortnick, *supra* note 27, at 344-45.

their communications systems and news reporting certainly is consistent with the United States' democratic values and merits the United States' support. The danger to free press, however, is that some nations believe that the goal of improving news communications should involve repression of the independent Western news media. The solution may be for the news industry to assist in training foreign journalists and to provide technical expertise to developing nations. Only when the developing world has the ability to compete in the information age will it recognize the strength and utility of the democratic values which the United States seeks to encourage.

Other challenges to the news industry will be presented by the new technological changes which affect its operations. In the near future, depending on the speed and direction of development, citizens of the United States and other nations will be able to select news, cultural entertainment and scholarship from sources around the world by accessing information networks with personal computers. But, what kind of information will be available through this worldwide network and who will choose the content and control the transmissions? What is the difference between "cultural entertainment" and "cultural pollution," and who decides? How can the news media engage in such discussions?

C. The Education Community

A third participant in the information age is the education community. Including both teaching and research institutions, the education community encompasses primary and secondary schools, colleges, universities, training centers, rehabilitation centers, research and development institutions, think tanks, foundations, technical institutes, associations, and libraries.

The education community is at the heart of the information revolution. The development of new technologies will produce rational and positive progress only if people can put the technologies to use and adapt to new patterns of living. The information revolution is constantly and rapidly changing what individuals must know and what skills they need to participate fully in society. The information age is partly an education age, for only with lifelong education and training will individuals be able to adapt and adjust.

To meet this need, profit-making institutions are entering what was traditionally the not-for-profit education market. For-profit corporations both provide on-the-job training and urge employees to obtain

advanced education at company expense. The resources of these corporations often far exceed those of the not-for-profit education community, thereby helping to improve the overall educational level of United States citizens today.⁴³

Still, there remain numerous examples of the education community's inability to provide needed training. In 1959, there were ninety-six nations in the world⁴⁴ and the United States was the dominant force in the international community. Today, there are 167 nations⁴⁵ and the United States is no longer the sole dominant force. Yet in the 1970s, the study of foreign languages in the United States declined steadily.⁴⁶ This decline has led to a lowered awareness of the rest of the world.⁴⁷ A former director of the Central Intelligence Agency voiced concern that the downgrading of "international" education in the United States is threatening both recruitment efforts and the competence of employees in the foreign policy and intelligence fields.⁴⁸ A new term, "functional illiteracy," has been coined to describe the problems plaguing an education system which is producing citizens not even capable of shopping for groceries or performing simple arithmetic.⁴⁹ Yet the information age requires a new kind of literacy, which includes an understanding of technology. In the face of such challenges, how can the education community begin to find a solution?

D. International Telecommunications Organizations

Telecommunication, which literally means "communication at a distance,"⁵⁰ is defined in the International Telecommunication Convention as "[a]ny transmission, emission or reception of signs, signals, writing, images and sounds or intelligence of any nature by wires, radio, optical or other electromagnetic systems."⁵¹ The telecommunications industry has traditionally included entities engaged in electrical

⁴³ See, e.g., Teltsch, *Noncash Giving on Rise to Needy Organizations*, N.Y. Times, Dec. 27, 1982, at A2, col. 1 (corporate gifts of property increasing); *Corporate Philanthropy*, *Id.*, May 18, 1982, at D6, col. 5 (survey shows greater willingness by corporations to make charitable gifts).

⁴⁴ BUREAU OF INTELLIGENCE AND RESEARCH, U.S. DEP'T OF STATE, STATUS OF THE WORLD'S NATIONS 1 (1983).

⁴⁵ *Id.*

⁴⁶ *The Editorial Notebook: Why Johnny Isn't Learning French*, N.Y. Times, June 9, 1978, at 26, col. 1 (federally funded foreign language program in elementary schools is dying out).

⁴⁷ *Id.*

⁴⁸ *The Future of International Education: Hearings Before the Subcomm. on International Operations of the House Comm. on International Relations*, 95th Cong., 2d Sess. 417 (1978).

⁴⁹ P. IRWIN, ADULT LITERACY: PROBLEMS AND ALTERNATIVES 3 (Congressional Research Service 1983).

⁵⁰ WEBSTER'S NEW COLLEGIATE DICTIONARY 1198 (1977).

⁵¹ International Telecommunication Convention, Malaga-Torremolinos, Jan. 1, 1973, 28

transmission of information by telegraphy, telephony, radio and television.

For a century, the International Telecommunication Union (ITU) has been the focal point for the international regulation of telecommunications.⁵² Its purpose is to enable the domestic and international telecommunications services of each nation to develop effectively without interfering with other nations' services.⁵³ The ITU has established standards and practices to govern telecommunications equipment, operations and tariffs,⁵⁴ and has provided a clearinghouse for the coordination, exchange and publication of technical information for the planning and operation of services.⁵⁵

The ITU today is facing the same disruptions felt in other areas because of the blurring of traditional distinctions between telecommunications and computer technologies. At the same time, dependence on telecommunications to achieve national and international objectives, especially peace among nations, has increased substantially. For example, earth exploration satellites now use remote sensing to survey resources, forecast crops and provide meteorological data.⁵⁶ Sophisticated aircraft navigation with the use of satellites increases the safety of air transportation.⁵⁷ As the uses of data communication increase, the pressures to allocate frequencies in a finite electromagnetic spectrum will mount.⁵⁸ Those nations such as the United States, which now have the capability to use much of the frequency spectrum, are being pressured by developing nations for their "place in the spectrum," even though these nations are not yet ready to use some fre-

U.S.T. 2495, T.I.A.S. No. 8572, Final Acts of the World Administrative Radio Conference, Geneva, 1979, Radio Regulations, art. N1/1, § 1.2.

⁵² The ITU was formed in 1934, as a result of a merger between the International Telegraph Union (created in 1865) and other unions. Rutkowski, *United States Policymaking for the Public International Forums on Communication*, 8 SYRACUSE J. INT'L L. & COM. 95, 98 n.1 (1980).

⁵³ International Telecommunication Convention, *supra* note 51, at art. 4, § 1:

The purposes of the Union are:

- (a) to maintain and extend international cooperation for the improvement and rational use of telecommunications of all kinds;
- (b) to promote the development of technical facilities and their most efficient operation with a view to improving the efficiency of telecommunications services, increasing their usefulness and making them, so far as possible, generally available to the public;
- (c) to harmonize the actions of nations in the attainment of those ends.

⁵⁴ Rutkowski, *supra* note 52, at 102.

⁵⁵ *Id.*

⁵⁶ McDermott, *supra* note 13, at 98, 102-03.

⁵⁷ SCIENCE POLICY RESEARCH DIVISION, CONGRESSIONAL RESEARCH SERVICE, UNITED STATES CIVILIAN SPACE PROGRAMS 350-52 (1983).

⁵⁸ M. SMITH, THE 1979 WORLD ADMINISTRATIVE RADIO CONFERENCE: IMPLICATIONS FOR U.S. PREPARATIONS FOR FUTURE ITU CONFERENCES AND SPACE SERVICES 23 (Congressional Research Service 1981).

quencies or, as a result of technological advancements, may never use them.⁵⁹ Because the frequency spectrum is finite, the ITU's job of governing the allocation system will be increasingly difficult.

The ITU's decisions regarding standards and tariffs also affect other communications issues discussed in UNESCO and the Organization for Economic Cooperation and Development (OECD), such as regulation of transborder data flows and free information flow generally.⁶⁰ Yet, very little has been done to relate these discussions to one another or to discussions in other international fora, such as the United Nations Outer Space Committee, where other related issues are debated. For example, one of the issues at the ITU Plenipotentiary Conference which concluded on November 4, 1982,⁶¹ concerned the extent to which the ITU should provide technical assistance to developing nations for telecommunications projects.⁶² But no such decision should be made without also considering the bilateral and multilateral assistance already provided by individual nations, the private sector, UNESCO, the United Nations Development Program,⁶³ and other international entities.

These communications and information issues must be balanced against conflicting national needs of sovereignty and dependence. As technology becomes more sophisticated and the interdependence of nations increases, tensions will mount unless ways are found to balance interests and treat all nations fairly.

⁵⁹ *Id.* at 34-41.

⁶⁰ See, e.g., Markoski, *supra* note 26, and the examples therein of how decisions by the ITU's International Telegraph and Telephone Consultative Committee (CCITT) can affect the provision of international telecommunications services.

⁶¹ For a description of the 1982 ITU Plenipotentiary Conference, see Gardner, *U.S. Should Look for "Compatible Alternatives" to ITU*, COMMUNICATIONS DAILY, Nov. 17, 1982, at 1, 1-5.

⁶² *Nairobi Meeting a Disappointment for U.S. Team*, BROADCASTING, Nov. 15, 1982, at 38.

⁶³ The United Nations Development Program (UNDP) was established in 1966 when two existing U.N. technical assistance programs were merged in an effort to improve the coordination and effectiveness of U.N. technical aid activities. The UNDP's primary objective is to provide systematic and coordinated assistance for technical, economic and social development throughout the world, emphasizing programs in the poorest nations. The UNDP receives funding from the voluntary contributions of more than 144 governments. It is responsible for the coordination of all U.N. grant technical assistance, while relying on the U.N. and its specialized agencies to implement most of its projects. UNDP-sponsored programs provide more than \$550 million annually in technical aid and other activities for 150 countries. See DEVELOPMENT COORDINATION COMMITTEE, INTERNATIONAL DEVELOPMENT COOPERATION AGENCY, DEVELOPMENT ISSUES: U.S. ACTIONS AFFECTING DEVELOPING COUNTRIES, 1983 ANNUAL REPORT OF THE CHAIRMAN OF THE DEVELOPMENT COORDINATION COMMITTEE 153a-156.

E. The International Trading Community

If communications and information are the lifelines of the world, then international trade is its lifeblood. The information revolution has affected general trade by enabling commercial activities to be conducted more rapidly and efficiently. In addition, trade in information-processing products—computers, terminals, software and related equipment—has increased faster than almost any other trade sector. A recent report estimates that the local market for such products was \$73 billion in 1981, and predicts that revenues will reach \$125 billion to \$150 billion in 1986 and \$190 billion to \$230 billion in 1991.⁶⁴ The report also estimates that the United States market, with a current value of approximately \$36 billion, or half of total world revenues, will grow at the world rate over the next five years.⁶⁵ From 1986 to 1991, however, the value of the United States market will increase by an average of approximately eleven percent, while the rest of the world's market will average a growth rate of approximately nine percent.⁶⁶

This growth in trade has broad implications. Increased trade means more jobs, but may require labor force retraining; consequently, as the information age revolutionizes the workplace, the impact of information technology on employment levels will become a concern. Should business retrain present workers, or simply replace "obsolete" workers? Should tax-deductible depreciation allowances similar to those now given for plant and equipment be developed for the labor force? Who should bear the costs—society as a whole, the business community, or the individual?

The information age will affect international trade in other ways as well. The challenge now for United States industry is to design, produce, market and distribute communications products and services, thereby reinforcing the United States' economic, political, social and cultural advantage. If it fails, the United States will find itself in the position of being a consumer of these products and debtor to those countries who produce them. Information technologies are growing rapidly under government impetus in countries such as Japan and France,⁶⁷ and the resulting competition with the United States is a

⁶⁴ *World Market for Information Processing Products to Double in 5 Years*, INTELTRADE, May 15 & 30, 1982, at 1, 1.

⁶⁵ *Id.* at 2.

⁶⁶ *Id.*

⁶⁷ Indeed, the competition from Japan can be felt throughout the Western Hemisphere: Latin America is being incorporated into the strategies by which Japanese companies plan to grow. Meanwhile, Latin Americans are gaining the resources and skills necessary to make use of the new technologies. All this is made possible by the continual forward movement of

threat which must be met with more than rhetoric.

This is an area in which the United States government could play a central role as catalyst and risk spreader. One example is trade in microelectronics. Within that industry are three identifiable components: the silicon chip, which is the brain of the system; the software, which programs the system; and the device itself, into which the chip is incorporated. The United States must decide whether to seek self-sufficiency in the whole technology, or whether to specialize in one component and rely on the international market to supply the rest. On the one hand, self-sufficiency provides an integrated industry and a psychological feeling of control, but it requires substantial investment and a long lead time for research and development. On the other hand, specialization may cost less in time and money, but its success depends on the reliability of the international marketplace to supply compatible components. Such decisions cannot be left to chance; meanwhile, other nations are not spending time in contemplation.⁶⁸

Furthermore, the partnership in the trading sector between government and business has never been adequately developed in the United States. Unless some way is found to promote investment in information technologies—through a working partnership consisting of business, labor and government—the United States stands to lose more than just a trade advantage. But, how will this partnership evolve? When will business, labor and government engage in the discussions necessary to bring it about?

Japanese industry. Collaborating with the government, Japanese companies are willing to discard older technologies as fast as newer ones can be developed, while financing the development of the new technologies by gaining strong and sometimes dominant positions in the world market for older ones. Japan's Overseas Economic Cooperation Fund provides very low-interest loans to Latin Americans to finance large technological purchases . . . Japan's tax laws provide additional incentives for technological transfer. And Japan provides its companies with generous insurance against foreign losses.

Reich, *Hi-Tech Warfare: Fixated on Russia, We Risk Losing to Japan*, NEW REPUBLIC, Nov. 1, 1982, at 17, 19. See also Stratte-McClure, *supra* note 20.

⁶⁸ As one journalist noted:

Today no one holds a commanding lead in the technological race. The United States remains respectably ahead in pure research and high-tech applications for defense and aerospace. Britain and France have entered the "information age" several steps ahead of the Japanese with their innovative videotex systems. But Japan has virtually wiped out international competition in consumer electronics—and its manufacturers have taken dead aim at the global office-automation market. The country is also a leader in robotics and optical electronics. And Japanese industry is rapidly closing the gap with the United States in computers, semiconductors and genetic engineering. Perhaps more important, Japanese firms are now the world's undisputed masters of manufacturing technology—the science of how to make products more efficiently—and they are using that know-how to make older businesses more competitive.

Japan's High-Tech Challenge, NEWSWEEK, Aug. 9, 1982, at 48, 48.

F. Bilateral and Multilateral Assistance Organizations

A communications infrastructure is central to any nation's ability to conduct its internal affairs. Developing such an infrastructure can require anything from building a telecommunications system which provides telephone and telegraph facilities, to training journalists and technicians, to building roads which connect villages and towns. Although information technologies have flourished in some nations, the needs of other nations remain unmet.⁶⁹

In the effort to assist the developing world to become equal partners in the international community, the United States developed a bilateral development assistance program⁷⁰ and, in 1961, formalized it by enacting the Foreign Assistance Act.⁷¹ The Agency for International Development (AID) is charged with running United States bilateral assistance programs.⁷² This assistance, however, has been provided in a haphazard and unfocused way. While development assistance programs are authorized by the Foreign Assistance Act, AID as an entity has no enabling legislation to provide it with a life of its own apart from its programs. The agency depends on annual authorizations and appropriations for its very existence.⁷³ In addition, AID's fundamental

⁶⁹ According to one report:

Despite the huge investments being made in telecommunications to meet pent-up demand for service, one-third of the countries in the world still have fewer than one phone per 100 people and less than 50,000 phones in service. Only a dozen countries have more than 5 million phones, and half of those countries have not yet achieved a 30% density of telephones. Less than 20% of the countries outside of North America have more than 15 phones per 100 people.

ARTHUR D. LITTLE, INC., *WORLD TELECOMMUNICATIONS STUDY II, 1980-1990: A SUMMARY* 3 (1980). See also Bortnick, *supra* note 27, at 335-36.

⁷⁰ For information on the history of the U.S. bilateral assistance effort, see D. MICKELWAIT, C. SWEET & E. MORSS, *NEW DIRECTIONS IN DEVELOPMENT: A STUDY OF U.S. AID* (1979).

⁷¹ Pub. L. No. 87-329, 75 Stat. 719 (codified as amended at 22 U.S.C. §§ 2151-2443 (1982)).

⁷² Established in 1961 pursuant to the Foreign Assistance Act of 1961, AID is the principal U.S. government agency designated to carry out bilateral economic assistance programs in the Third World. Pub. L. No. 87-195, § 621, 75 Stat. 424, 445 (1961). AID administers programs under two general categories: development aid, which is intended to meet long-term development needs of the world's poorest populations; and economic support funds, which are designed to provide fast-disbursing economic aid to achieve political and economic stability in areas where the United States has special security and political interests. In 1979, the International Development Cooperation Agency (IDCA) was established by the Reorganization Plan No. 2 of 1979, 3 C.F.R. 510 (1980), *reprinted in* 5 U.S.C. app. at 1168-69 (1982) *and in* 93 Stat. 1378 (1979), to coordinate all U.S. economic activities with the Third World. AID became a component of IDCA, and its administrator reports to the director of IDCA and the President. 3 C.F.R. at 511; 5 U.S.C. app. at 1169. At the present time, however, Peter McPherson is serving as both the administrator for AID and the acting director of IDCA.

⁷³ Although the Foreign Assistance Act of 1961 directed the President to establish an agency to carry out U.S. economic aid programs, the 1961 Act, § 622(c), 75 Stat. at 446, also made the Secretary of State responsible for the supervision and general direction of U.S. economic and

mandate has been to address basic human needs.⁷⁴ As a result, the agency has been discouraged over the years from providing the funds to build infrastructures such as roads and communications facilities. Yet if a nation has no communications infrastructure, how can its people take their goods to market or even find out where the markets are? Thus, to be truly effective, assistance to the "poorest of the poor" must include the building of infrastructures.

Multilateral assistance has for some years also been provided through the United Nations, multilateral financial institutions, and regional organizations. Because of the efforts of the United Nations Development Program and United Nations Specialized Agencies such as UNESCO, the World Health Organization and the Food and Agriculture Organization, a great deal of assistance has been provided to developing nations.⁷⁵ In addition, multilateral assistance has been provided by the International Bank for Reconstruction and Development (the World Bank) and its soft loan window, the International Development Association, the International Monetary Fund, and regional multilateral banks such as the Inter-American Development Bank and

military aid programs. By making AID a part of the State Department rather than an independent agency, lawmakers felt that economic aid programs could be better coordinated with general U.S. foreign policy objectives and more effectively integrated with other U.S. activities overseas. S. REP. NO. 612, 87th Cong., 1st Sess. 37, *reprinted in* 1961 U.S. CODE CONG. & AD. NEWS 2472, 2507-08.

⁷⁴ The phrase "basic human needs" first appeared in U.S. economic assistance legislation in 1978, when Congress modified the existing objectives of U.S. development assistance policy described in § 102, 75 Stat. at 424, of the Foreign Assistance Act. The basic human needs approach represented a further evolution of the "New Directions" policy instituted by Congress in 1973. John J. Gilligan, chairman of the Development Coordination Committee and administrator of AID during the Carter administration, defined "basic human needs" as "the objective of development . . . [It] is a growth strategy which emphasizes the beneficiaries of economic growth and stresses broadly based increases in productivity of human resources." DEVELOPMENT COORDINATION COMMITTEE, INTERNATIONAL DEVELOPMENT COOPERATION AGENCY, DEVELOPMENT ISSUES: U.S. ACTIONS AFFECTING THE DEVELOPMENT OF LOW-INCOME COUNTRIES, FIRST ANNUAL REPORT OF THE DEVELOPMENT COORDINATION COMMITTEE 21 (1979). He later stated that the basic human needs strategy "focuses on the production and supply of adequate quantities of basic goods and services and on the access of the poor to those goods and services through increases in employment and income." DEVELOPMENT COORDINATION COMMITTEE, DEVELOPMENT ISSUES: U.S. ACTIONS AFFECTING THE DEVELOPMENT OF LOW-INCOME COUNTRIES, THIRD ANNUAL REPORT OF THE PRESIDENT 23 (1978). There is, however, some disagreement about precisely what needs are basic and how to assign priorities to those needs.

⁷⁵ Since the 1950s, UNDP and other U.N. organizations have provided more than \$7.7 billion in economic assistance to developing countries. These institutions have steadily increased the amount of aid they provide, particularly during the late 1970s and early 1980s, and assistance reached a peak in 1982 when they provided nearly \$800 million. AGENCY FOR INTERNATIONAL DEVELOPMENT, U.S. OVERSEAS LOANS AND GRANTS AND ASSISTANCE FROM INTERNATIONAL ORGANIZATIONS, THE 1983 ANNUAL REPORT OF THE CHAIRMAN OF THE DEVELOPMENT COORDINATION COMMITTEE, STATISTICAL ANNEX 1 (July 1, 1945-Sept. 30, 1982) 191.

the Asian Development Bank.⁷⁶ Finally, regional multilateral entities such as the Organization of American States and the Organization for African Unity have provided assistance for their respective regions.⁷⁷

An aid program, especially in telecommunications, ideally should be planned to account for the bilateral efforts of individual countries, multilateral efforts by the international community, and the trade picture for that developing nation. In order to avoid duplication, complementary assistance programs could be planned by individual nations, multilateral organizations and private business entities. To a degree, this does happen today. The United States, however, does not organize and oversee its participation in bilateral and multilateral assistance programs with any consistency. Further compounding this problem is that trade's impact on aid (and vice versa) has not been thoroughly studied or anticipated.⁷⁸

The communications and information revolution is exacerbating the development gap between the rich and poor nations of the world. Developing nations' attempts to redress the imbalance through support for a New World Information Order and a New International Economic Order⁷⁹ are evidence of this gap. The information age promises to solve many of the problems of the developing world, but also threatens to increase the tensions between the industrialized and developing nations. Unfortunately, each country's stages of development may vary so no one plan will work for all. Ways must be found to lessen these tensions and encourage the developing world's participation in this new age. But, how can bilateral and multilateral assistance organizations bring this about?

G. National Security Agencies

In its broadest sense, United States national security could involve any activity or interest designed to promote and protect this country's

⁷⁶ For specific levels of assistance from these multilateral institutions to individual countries, see *id.* at 191-238.

⁷⁷ For a description of the activities and functions of these organizations, see 1 THE EUROPA YEARBOOK 1983: A WORLD SURVEY 247-56.

⁷⁸ Note, however, that the Foreign Assistance Act does recognize the need for such coordination. Section 601(b)(1), 75 Stat. at 438, states that the President shall "make arrangements to find, and draw the attention of private enterprise to, opportunities for investment and development in less-developed friendly countries and areas." 22 U.S.C. § 2351(b)(1) (1982). See also FOREIGN AFFAIRS & NAT'L DEFENSE DIVISION, CONGRESSIONAL RESEARCH SERVICE, 96TH CONG., 1ST SESS., ISSUES AND OPTIONS IN THE COORDINATION OF U.S. FOREIGN AID POLICY: REPORT PREPARED FOR THE HOUSE FOREIGN AFFAIRS COMM. 9 (Comm. Print 1979).

⁷⁹ See, e.g., Cooper, *A New International Economic Order for Mutual Gain*, 26 FOR. POL'Y 66 (1977); Ward, *Another Chance for the North?*, 59 FOR. AFFAIRS 386 (1980-81).

national interests. The term is used here, however, to describe those activities which affect United States governmental relations with other nations. In this sense, the United States national security network includes the departments of State and Defense, the United States Information Agency, the Board for International Broadcasting, AID, and the intelligence agencies. The network uses foreign policy, public diplomacy, defense policy and intelligence gathering to protect the United States in the international community. Information and communications form the core of this network.

The information age, by changing both the character and content of United States international relationships, has challenged the State Department to rethink its traditional approach to diplomacy. The State Department has 283 posts overseas and runs the farthest-flung empire in the world, although it is the smallest cabinet-level department of the United States government.⁸⁰ In 1959, when there were ninety-four nations in the world, the State Department employed approximately 22,920 people.⁸¹ In 1983, with 167 nations on the planet, the State Department only employs approximately 23,961 people.⁸² At the same time, the Department's responsibilities have increased astronomically due to the increase in the number of nations with whom the United States maintains diplomatic relations and a substantial increase over the past decade in the number of Americans traveling abroad.

The Department has made great strides in improving its technological capabilities in data processing and communications,⁸³ no mean feat when accurate, rapid and stable communications are required not only in large posts like London and Tokyo, in stable, industrial societies, but also in small posts in out-of-the-way places in the developing world, where the electricity fails regularly and a trip to a village a few miles from the capital takes five hours of rugged driving over dirt roads often washed out by heavy rains. The Department, however, still has not developed a plan for ensuring that members of the career Foreign Service understand the implications of the information age discussed above. The core of an effective foreign policy is information about the

⁸⁰ Interview with Roger B. Feldman, Comptroller, U.S. Dep't of State, in Washington, D.C. (Sept. 15, 1982).

⁸¹ *Id.*

⁸² *Id.*

⁸³ For example, on February 16, 1983, the State Department inaugurated a new era in overseas communications by transmitting from a computer in the U.S. Embassy in Bonn, Federal Republic of Germany, to the Department in Washington, D.C., the first operational telegram prepared and transmitted electronically without generating any paper. Bureau of Administration, Department of State, Cable No. 03950, Bonn, Feb. 16, 1983.

needs, desires, plans and activities of other nations and international organizations; this information must be collected and analyzed by Foreign Service members trained for that purpose. The failure to recognize the challenges of the information age will impair the Foreign Service, and with it, the ability of the United States to develop and coordinate coherent, rational and effective foreign policy responses.

Public diplomacy, or communicating a country's goals and ideals to the rest of the world, is another important aspect of United States foreign policy. Because it is the means by which governments seek to influence world opinion, public diplomacy depends heavily on the accuracy and reliability of information technologies. In the United States, public diplomacy affects the activities of many segments of society: the news media, the education community, the trade and assistance sectors, as well as national security.

The government agency primarily responsible for the United States' public diplomacy efforts is the United States Information Agency (USIA). Through its international education programming, its international exchanges of information, and the Voice of America broadcasts, USIA tells the world about the United States and tells the United States about the world.⁸⁴ A second public diplomacy agency, the Board for International Broadcasting, oversees Radio Free Europe and Radio Liberty, which broadcast to Eastern Europe and the Soviet Union respectively. The broadcasts, which rely on impressive research services, stress local news. They reach tens of millions of people in the Soviet Union (with broadcasts in fifteen languages) and the Communist bloc nations.⁸⁵ These public diplomacy tools are intended to influence public opinion abroad by providing access to a wider body of facts and information than would otherwise be available. They are not organs of propaganda in the pejorative sense, implying a sinister and deceitful intent to ram "the American dream" or the United States position on a particular issue down the throats of a given audience. Instead, they are designed to permit independent thought and to encourage democratic values.

Unfortunately, as adept as the United States has been in developing information technologies and in harnessing communications, it has failed to communicate effectively with the world at large. Modern information technologies are central to effective public diplomacy, yet the Voice of America still operates in Munich with a vintage 1942 transmit-

⁸⁴ See Message to Congress Transmitting Reorganization Plan No. 2 of 1977, 13 WEEKLY COMP. PRES. DOC. 1519 (Oct. 11, 1977) (President Jimmy Carter).

⁸⁵ BOARD FOR INTERNATIONAL BROADCASTING, EIGHTH ANNUAL REPORT 1982 4.

ter.⁸⁶ The USIA, which has a mandate to develop and execute a comprehensive national policy regarding international communications,⁸⁷ has been consistently underfunded and denied sufficient personnel.⁸⁸ International exchange programs have targeted the elites in each country at the expense of programs for the youth who will be tomorrow's leaders and decisionmakers. Although USIA is itself affected by the debate over a New World Information Order, no real plans have been made to provide training and technical expertise through USIA programs.

AID is another part of the foreign policy network. As has been discussed earlier,⁸⁹ effective bilateral assistance as a component of foreign policy raises questions about AID's ability to meet the challenges of the information age. The "basic human needs" approach to bilateral assistance fails to recognize that information is a basic human need. In the past, neither AID nor the multilateral development banks have generally regarded communications investments as integral to economic development. In order for United States foreign policy to reflect the realities of the information age and this country's national security needs, however, this attitude must change.

Yet another participant in this process is the intelligence community, which uses, analyzes and produces information. Intelligence-gathering depends on information technologies, and has been altered radically by the advent of the new information systems. From the use of sophisticated data processing systems to organize, store and retrieve information⁹⁰ to the use of reconnaissance satellites and other electronic data-gathering methods to collect and analyze information around the world,⁹¹ the intelligence community has a vital stake in the information revolution. As one writer noted, sophisticated new information technologies "have given the American intelligence community an unsurpassed capacity to peel away the layers of secrecy that have

⁸⁶ See Tomlinson, *America's Stifled Voice*, Wash. Post, Feb. 20, 1983, at C7, col. 4.

⁸⁷ Memorandum from the President of the United States to the Director of the U.S. International Communication Agency, Mar. 13, 1978.

⁸⁸ Recently, some progress has been made by providing funding for a major modernization and expansion of the agency's facilities in the fiscal year 1984-85 authorization for the State Department, USIA and BIB. Pub. L. No. 98-164, § 202, 97 Stat. 1017 (1983). See also H. R. REP. No. 130, *infra* note 99.

⁸⁹ See *supra* notes 71-73 and accompanying text.

⁹⁰ For a discussion of the importance of information technology to intelligence-gathering, see Burt, *Technology is Essential to Arms Verification*, N.Y. Times, Aug. 14, 1979, at C1, col. 5.

⁹¹ *Id.*

traditionally surrounded the Soviet Union's military establishment."⁹²

The final component of the national security network is the Department of Defense, which runs the largest communications network in the world. Clearly, its stake in the information revolution is fundamental to its successful development of defense and military policies. Without the ability to gather and analyze information and maintain communications with planes, ships, submarines and United States military installations around the world, the United States defense network would collapse. Thus, the Defense Department is interested in the development of information technologies, the politics of frequency assignments and satellite use, the development of security assistance programs, and the training of Americans in international affairs. Yet, how can the Defense Department and the other components of the national security network ensure that their interests are addressed in any discussions about these aspects of the information age?

H. Suppliers and Users of the New Information Technologies

Information technology encompasses the methods and devices used to process, store and transmit information. The "brain" of an information system is the silicon chip. Together with electronic storage devices, chips can be linked through telecommunications networks, thus enormously increasing the number of people who can have access to information.⁹³ Personal computers that can access data bases are one example.⁹⁴ Other examples are data and word processors which, if

⁹² *Id.* Photo reconnaissance satellites are one example of the benefits the new technologies have brought to U.S. intelligence-gathering activities:

A hundred miles above central Asia, an American satellite suddenly switches into operation. Although it is the dead of night, the spacecraft's camera takes hundreds of photographs of a suspicious construction site near a Soviet inter-continental ballistic missile complex. Minutes later, as the satellite passes over Australia, the infrared photos are transmitted to an American-operated ground station and then relayed to the Central Intelligence Agency in Langley, Va.

Examining the heat-sensitive images with the aid of computers using photo enhancement techniques developed in planetary exploration, C.I.A. analysts quickly note that the ground temperature of the construction site is substantially warmer than the surrounding terrain. The evidence appears conclusive: The Russians have secretly begun building an underground silo in which to house a new, multi-warhead missile.

Id.

⁹³ See Grossman, *supra* note 13, at 89-92.

⁹⁴ For example, the U.S. House of Representatives has developed the House Information Systems operation to provide computer capacity to individual members of Congress and congressional committees. This Perspective was written on a VT 102 Digital Equipment Corporation word processor, which can access various data banks, including SCORPIO and LEGIS. The former is the data bank of the Library of Congress and provides access to sources such as bibliographies, information about national organizations, an index of Library of Congress materials, and Congressional Record abstracts. The House Information Network LEGIS provides, for example,

interconnected throughout a company's or organization's offices, enhance efficiency, productivity, morale and profits.⁹⁵

The new information technologies present almost limitless possibilities for growth, but also present a host of problems. One problem is computer fraud, a new variation on a very old crime. Another problem, one with which the legal profession is grappling, is the industrial-age concept of privacy protection.⁹⁶ For example, information technologies enable corporations to transmit general business information while simultaneously transmitting information about individuals which may be subject to privacy protections.⁹⁷ Moreover, excitement about personal computers and other one-way information retrieval devices is muted by Orwellian privacy implications of hooking personal computers to large mainframe computers by telecommunications links. It would be only a small step from this to two-way information retrieval systems enabling governments or other institutions to retrieve private information about individual users. Finally, controversy persists over the possible health hazards of low-level radiation produced by video display terminals.⁹⁸ These are only a few of the problems which will have to be solved if the information age can be controlled to serve individuals.

The development of these information technologies present the

information about legislation, member scheduling, House and Senate floor activity, and the United Press International file, and has electronic mail capacity.

⁹⁵ Within weeks of the installation in 1983 of the VT 102 system in the House Committee on Foreign Affairs, the staff of the Subcommittee on International Operations, then chaired by the Hon. Dante Fascell, produced in one week a complex conference document used by House and Senate conferees in their deliberations on H.R. 2915, the State Department authorization bill for the 1984-85 fiscal year (now Pub. L. No. 98-164, *infra* note 99). Without a computer, it would have taken a minimum of three weeks to produce such a document.

⁹⁶ Privacy protection laws generally "include provisions that, though by different means, require the user to disclose either general or specific information to the data subject, *e.g.*, where personal information is being processed, where the user obtained the information, and where the user will send the information." Burkert, *Institutions of Data Protection—An Attempt at a Functional Explanation of European National Data Protection Laws*, 3 *COMPUTER/L.J.* 167, 173 (1981). The extent of privacy protection in the United States, however, is not as comprehensive as in other nations. Eger, *supra* note 18, at 211. For example, the Privacy Act of 1974, Pub. L. No. 93-579, § 3, 88 Stat. 1897 (1974) (codified as amended at 5 U.S.C. § 522a (1982)), only "protect[s] the privacy of individuals identified in information systems maintained by Federal agencies." *Id.* at § 2.

⁹⁷ Novotny, *supra* note 1, at 116. This raises complex compliance problems: Not only must the corporation decide what information is protected, but it also must decide which jurisdiction's laws apply. *Id.* at 115-16.

⁹⁸ Compare Wall St. J., Feb. 29, 1984, at 1, col. 3 (pregnancy problems discovered in group of United Airlines workers using VDTs) with Boffey, *Video Terminals Harmless to Eye, Study Asserts*, N.Y. Times, July 12, 1983, at C1, col. 1 (no scientific evidence that VDTs cause permanent damage to eyes or increase risk of cataracts).

knottiest problems of all. As information becomes easily available, what constraints are desirable? Who controls what information goes into the system? Who decides what uses of the system are permissible? At the core of the information revolution is an age-old battle: Should individual freedom or governmental regulation be the guiding principle of public policy? The advent of the information age moves that battle to a new, higher plane with enormous stakes.

IV. CONCLUSION

Throughout this Perspective, questions have been raised about the relationships among the various components of the information age. International finance, news gathering, education, telecommunications services, international trade, development assistance and national security are no longer discrete issues. Decisions concerning satellite communications affect banking, trade, aid, intelligence-gathering, the news media, national defense, and diplomacy. Regulation of transborder data flows affects everything from the conduct of an individual's life to government decisionmaking to the worldwide conduct of business. Changes in information technologies must be considered by the OECD when discussing privacy protections, by UNESCO when discussing controls on the news media, or by the ITU when discussing frequency allocations. The merger of computer and communications technologies, the development of digital communications techniques, and new forms of network integration have created new mobility for vast amounts of data. Advances in these fields are drastically reducing barriers of time and distance.

International communications and information policy issues are so deeply interrelated that the usual governmental practice of compartmentalizing these issues will be counter-productive, even dangerous, to United States interests. Furthermore, the development of information technologies is so rapid that normal governmental procedures never quite control events or issues. It is therefore critical for the United States to formulate a policy which is broad and flexible, and which addresses seemingly disparate, but related, problem areas. If the United States is to respond effectively to the challenges of the information age, it must seek a coherent response—not a babble of dissonant voices representing interests at odds with or unaware of one another.

In an attempt to institute the policymaking and policy-executing machinery to draw information age participants together, the State Department has set up an Office of the Coordinator for International

Communications and Information Policy.⁹⁹ The purpose of this office is to monitor all issues, draw government and private sector participants together for information exchange and action, act as a clearing-house, and, most importantly, guide decisionmaking. Through this office the expertise of all participants can be brought together and synthesized into a coherent policy. The State Department was not chosen for this task by accident: The essentially international character of communications and information issues ultimately requires foreign policy decisionmaking capacity.¹⁰⁰

By developing complementary policies which, taken together, constitute the United States' policy for international communications and information, the State Department can turn the diversity of American society to foreign policy advantage and permit the information age participants to pursue their areas of expertise. Such an international policy must ensure that each participant knows what the others are doing and must be able to effect compromise when participants proceed in contradictory or counterproductive directions. This policy must enable the United States government to forge an aggressive working partnership with private industry to ensure the United States' competitive place in the world. The process will not be easy, but it is necessary if the United States is to survive and grow, and to preserve its democratic ideals.

⁹⁹ For a full discussion of this position and its creation, see H.R. REP. NO. 100, pt. 2, 97th Cong., 1st Sess. (1981); *Hearings on H.R. 1957 Before the Subcomm. on International Operations and the Subcomm. on International Economic Policy and Trade of the House Comm. on Foreign Affairs*, 97th Cong., 1st Sess. (1981). For a discussion of the subsequent legislation codifying this office, Pub. L. No. 98-164, 1984 U.S. CODE CONG. & AD. NEWS (97 Stat.) 1017, 1025-26, see also H.R. REP. NO. 130, 98th Cong., 1st Sess. 50-55 (1983).

¹⁰⁰ See H.R. REP. NO. 130, *supra* note 99, at 50. The Coordinator, a presidential appointee with the rank of ambassador, serves as a liaison between State Department offices and bureaus, other executive branch agencies, congressional committees, and the private sector. *Id.* at 50-51.