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THE ROLE AND CONTROL OF INTERNATIONAL COMMUNICATIONS AND INFORMATION

REPORT

TO THE

SUBCOMMITTEE ON INTERNATIONAL OPERATIONS

OF THE

COMMITTEE ON FOREIGN RELATIONS UNITED STATES SENATE

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JUNE 1977

Printed for the use of the Committee on Foreign Relations

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Introduction by Senator George McGovern, Chairman, Senate Foreign Relations Subcommittee on International Operations

Trade, aid, climate and environment, food, military might, morality in foreign policy, the role of Congress and the Executive in formulating international policies, energy, commodities . . . the list of intriguing and important issues that now come under the umbrella of foreign relations discussions has added new importance to the need for Americans to know more about how they and their nation mesh with the rest of the world.

Senator Percy, the Ranking Minority Member of this Subcommittee, and I have noted with some concern that up to now, one broad set of issues has hardly been discussed. It is the role and control of international communications systems and their technology, as well as the role and control of the information that is transmitted.

We think it can fairly be said that the public, the Congress and the Administration do not yet understand the impact of:

—increasing dependence on the communication of information by nations, people, businesses and other international institutions;

—the control of information and the technology to transmit it, in a world where satellites connect sophisticated "crisis centers" with towns which have no paved roads;

—changes in the economic system, where international financial transactions which might affect millions of people are accomplished in a fraction of a second;

—the potential for breakdowns in worldwide communications systems which could lead to serious international conflicts.

The increasing foreign policy implications of international communications policy are diverse in scope and appear diffuse. This "Committee Print" has been prepared in an attempt to provide a clear and succinct outline of the present situation. It might be viewed as a primer—a first introduction to a very complex and evolving subject.

I do not expect that there will be unanimous acceptance of the implications or the ideas suggested here, particularly those in a scenario developed by Arthur D. Little, Inc. p. 55. They are raised solely to create further discussion and consideration of the subject.

A reading of this Committee Print, however, should raise new perceptions about our strengths and vulnerabilities. It implies that, while information is among our richest resources, it is a resource often ignored in American foreign policy debates. The material stresses that our highest vulnerability may be lack of planning and understanding of the issues. A key question to ask: "Must there be an international crisis to get the United States to act on information resources?"

IV

THE CURRENT SITUATION

Virtually all international activity is, to some degree, dependent upon communications. We have accepted that as "obvious" for years.

Businesses, tourists and governments use information to plan and decide their actions.

The most visible sources of decision-making information are the international news media. For instance, news about an impending war might change tourists' travel plans to the countries in question.

One "obvious" example of the importance of the control of communications networks and the control of the information that they carry, occurs virtually every time a coup overthrows a sitting government. High priority is given to seizing the nation's communications facilities. How else would most people know the coup had occurred? How better to assure control by the new regime?

Traditionally we have thought of international communications and the flow of information first in terms of mass media, telephone and telex, and secondarily in terms of tourism, student and cultural exchanges.

POTENTIALS FOR DISPUTES

There is a school of thought that looks upon future international communications and information issues as looming large because they encompass four important areas for potential international disputes.

1. *Economic.*—The free flow of information can become a source of economic development. Constricting the flow could be a possible weapon of economic warfare.

2. *Strategic.*—The free flow of information can be used for political purposes, including propaganda. The argument has been made that Cold Wars, in large part, can be defined as information wars. Constriction of the flow can serve an equally important strategic purpose for many nations. Yet, the more people know about citizens and policies of other lands, the less likely they are to be suspicious of the unknown.

3. *Human Rights.*—The free flow of information can have a direct bearing on individual privacy, particularly as data about individuals are electronically transmitted from computer to computer across international boundaries. Likewise, constriction of the flow can limit individual freedom of action and communication.

4. *Freedom of Information.*—The free flow of information, as is guaranteed in several international declarations, continues to be supported by many nations. On the other hand, a large number of countries claim a need for censorship and control of information for reasons they consider to be valid. These frictions can set the stage for heated disputes as the world becomes more dependent upon information.

Thus, under any number of possible scenarios, national policies which determine who controls—(a) the existing hardware, (b) technology coming "on stream" and (c) the information to be transmitted—can directly affect how countries and individuals relate to each other.

It is too early to tell what the new era of international communications will mean. At this point, some indications appear to be contradictory. For example, at the same time as new satellites and undersea cables portend a period of abundant communications channels, a rise in censorship could reduce usage of the new channels.

We felt relatively comfortable with the old forms of technology, even the communications satellite. What is new and unsure is how merging the technologies and policies of the present with computer technologies and policies that now are being evolved will affect our lives and international relations. Further, there has been a politicizing tendency in international communications conferences, which in the past were devoted to technical matters such as the allocation of bits and pieces of the radio spectrum to individual nations or stations. These forums today (like many other international meetings) are changing. In effect, the lesser developed countries are saying they want a bigger slice of the pie.

The Third and Fourth World have found an ally in the Soviet bloc. For several years, the Russians have been trying in several forums to get written into an international document the precedent that all nations have the right to control information coming into their country and that which goes out. Once such an international precedent had been set, there would be a concerted attempt to shackle the Voice of America, Radio Free Europe, Radio Liberty and the mass media of the western world. Some observers believe this form of information control is worthy of discussion in the context of the Helsinki Accords.

NEW INFORMATION ORDER

Meanwhile, most developing nations feel quite comfortable with government control of information. They say a vital part of the "New International Economic Order" is a "New International Information Order." Many contend information is as vital to development as petroleum.

The "information poor" nations have yet another concern which has been labeled "the imbalanced flow of information." These nations do not have external broadcast services: they claim VOI, BBC and similar western operations (and to some extent eastern broadcasters such as Radio Moscow or Radio Peking) boom their shortwave signals into their countries and the poorer nations do not have an opportunity to present their own point of view to local citizenry. Further, they say, most of the major news services are controlled by the west and that they view the world through alien eyes.

This is not an esoteric subject. The basic conflicts between open societies dedicated to a free flow of all information and controlled societies in the Second, Third and Fourth Worlds have raised heated debates and actions.

Many nations do not allow western correspondents of their publications freedom of entry. Others do allow reporters in but subject them to harrassment and censorship.

A major UNESCO project is to create strong media in the developing world. In 1975 and 1976, this took the form of a "draft declaration" which would have had the effect of sanctioning censorship worldwide and could make media the mouthpiece of governments. While this draft declaration appears to be dead issue in its abhorent form, UNESCO continues to be the action organization for nations which believe controlled information is the only logical policy.

Among the most prominent issues raised at meetings of non-aligned nations is the creation of a Third World News Agency. In its worst incarnation, such an agency could be used by governments to completely deny U.S. media access on the argument that their own news

organizations (working in conjunction with the Third World News Agency) should be the sole source of news about member nations. This conceivably could cut off access to unbiased news reporting about much of the world now available to U.S. citizens.

At a January meeting of an arm of the International Telecommunications Union, the U.S. and virtually every other nation agreed to a treaty which in the judgment of a number of interested parties in and out of government condoned the theory that nations have the right to give prior consent to broadcasts beamed at their populace from outside their borders. The treaty has yet to be submitted to the Senate. The issues agreed to at this 1977 World Administrative Radio Conference (WARC) were narrowly defined technical questions concerning direct broadcasts from satellites. It is argued that the precedent nonetheless was set for prior consent. If this principle is expanded upon at the 1979 WARC when the entire broadcast spectrum is up for grabs, there could be a seriously damaging blow to the concept of free flow of information across world borders.

The U.N. Committee devoted to the peaceful uses of outer space continues to discuss principles of the use of direct broadcasts from satellites.

ECONOMIC AND SECURITY IMPLICATIONS

The question of international communications and information is of grave import to the United States, where Department of Commerce statistics show that the information sector of the U.S. economy has grown to include over 40 percent of the GNP (if education is included). It continues to spiral upward.

Since the U.S. is the leader in supplying information technology as well as the products of the technology—such as computers and the information itself—any restriction on the use of these could affect our politics, economy or even our national security.

Among our greatest business resources (and the possible difference between future red or black ink in our trade balance) is the sale of information. When it comes to computerized information we lead the world. This information is transmitted through telecommunications equipment.

There is a clear security and intelligence factor. To a great extent the SALT agreement is a communications agreement—we don't bother the Soviet's satellites, they don't bother ours. But the Soviets are developing killer satellites.

In an era when we are completely dependent on sophisticated communications, the potential is here for nearly complete isolation in a crisis. Many of the military and State Department communications links, as well as business communications facilities, are leased from unfriendly governments. Throughout the world there is a growing corps of government officials who see control of communications as a key lever to be used against the West.

Thus, while our information and communications strengths are imposing, unless we are aware of our weakness, we will not be prepared to overcome our vulnerabilities. We shou'd not become muscle-bound, particularly in a period when several nations are moving toward international communications policies which may be at ódds with the best interests of the United States.

In a few universities, government agencies, businesses and consulting firms, the issues and questions are just beginning to be formed. But

one fact is clear; the U.S. does not have an international communications policy. At the moment there is no drive to develop one. There is no agenda.

To bring these issues more clearly in focus, the International Operations Subcommittee of the Senate Foreign Relations Committee has scheduled hearings June 8, 9, and 10, 1977. As background for those hearings, this Committee Print includes a listing of questions that might be addressed along with several previously unpublished documents. With each succeeding document the material becomes more technical and specific.

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"Alternatives to Intelsat—Competition in Global Satellite Telecommunications" is a previously unpublished scenario developed by Arthur D. Little, Inc., for the Office of Telecommunications Policy in the White House in June 1976. (Note: No claim is made that the events outlined in this scenario will actually take place. The format is used solely to establish awareness of issues and interrelationships.)_____	55
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U.S. PRIVATE MEDIA ABROAD*

A. Ubiquity of U.S. Mass Media

If a single adjective had to be chosen to describe the current state of the international dissemination of American mass media, it would be difficult to escape using the word ubiquitous. That American news agencies, magazines, films and TV programs have spread themselves worldwide must be obvious even to the most casual observer. Some of the statistics on this phenomenon are mind boggling: data available in the mid-1970's revealed that Time was then more popular in Canada than in the United States, UPI was being translated into 48 languages, the world's movie theaters were devoting more than 50 percent of their screen time to American films, the amount of TV programs exported from this country was estimated to exceed 100,000 hours a year, the International Herald Tribune was circulating in some 70 countries, and so on.[1/] It is virtually impossible to escape the reach of U.S. media in the world. Even Peking's official news agency, Hsinhua, has exchange agreements with U.S. news services and Moscow has done business with the American television networks.

Just how big is this business? A precise answer is difficult, indeed impossible, for separating mass media from other forms of com-

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* This study was prepared on contract for CRS by William H. Read, a Research Fellow of the Harvard Program on Information Resources Policy and author of America's Mass Media Merchants (Baltimore, Johns Hopkins University Press, 1977).

1/ William H. Read. "Multinational Media," Foreign Policy, n. 18, Spring 1975. p. 157, 159, 163.

munications is complicated; are in-room Hilton Hotel magazines a mass medium? And by what definition would any medium be declared American? Films frequently are coproduced by representatives of different countries, shot on location near and far with both American and foreign actors and distributed by multinational firms with headquarters in the United States and subsidiaries abroad.

What at the outset may seem an insurmountable problem of definition is actually a reflection of the milieu in which the so-called mass media exist. So before taking a look at some obvious mass media organizations, such as news agencies and television program exporters, at least a cursory overview of the current state of commercial American communications with other countries is warranted.

To begin, we should remind ourselves that the United States is in a fundamental period of transition. Zbigniew Brzezinski has written of the "onset of the Technetronic Age" and Daniel Bell has forecast a post-industrial society 1/ in which information is the critical resource. These works, as well as others, tell us that, as we once rearranged our society from a country of basically rural inhabitants to urban dwellers, we are today restructuring ourselves in anticipation of the 21st century, and a principle means of

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1/ Zbigniew Brzezinski. Between Two Ages: America's Role in the Technetronic Era. New York, Viking Press, 1970. p. 9.

Daniel Bell. The Coming of Post-Industrial Society: a Venture in Social Forecasting. New York, Basic Books, 1973. 507 p.

accelerating that process is communications. We have become already a communications-intensive society. Indeed, a single communications carrier, AT&T, is the biggest of our big businesses (three times the assets of General Motors).[1/]

Moreover, nearly half the telephones in the world are in the United States; we consume more than four times as much newsprint as Japan, the world's second largest consumer; we have more radio sets than people, and the citizenry of this country have purchased something on the order of $10 billion dollars worth of television sets.[2/] In the future, communications is expected to provide us with electronic mail, a moneyless economy and hip-pocket telephones. To a degree all these things now exist (telecopiers, credit cards and bellboy phones) and more is on the way.

Nearly all our communications activity is in the private sector where commercial motivations have turned communications into a growth industry. After having saturated the domestic market, many commercial communications companies inevitably set sail for foreign countries, or, especially in the case of Canada, just slipped across the border.

1/ See "Fortune's Directory of the 500 Largest Industrial Corporations", Fortune, v. LXXXIX, n. 5, May, 1974: 230-260.

"Fortune's Directory of the Largest Non-Industrial Companies", Fortune v. XC, n. 1, July, 1974: 112-130.

2/ Figures compiled from:
United Nations. The Statistical Office of the United Nations. Department of Economics and Social Affairs. U.N. Statistical Yearbook, 1971. New York, United Nations Publishing Service, 1972. 818 p.

The spread of American mass media predictably occurs in conjunction with other communications activity which in turn is associated with a myriad of interests abroad. Examples of these associations abound -- tourism (more than 24.8 million Americans traveled abroad in 1973), multinational corporations (187 U.S. firms are doing significant amounts of business around the world), book translations (14,344 English language books were translated in 1969) and the list could go on to include military personnel abroad, foreign students here, and so on.[1/]

A dramatic example is the rapid growth of satellite communications which helped make possible international direct dial telephoning, worldwide television audiences for sports events like the Olympic games, and transoceanic facsimile, a process which moves the adage "a picture is worth a thousand words" into the space age.

1/ Ibid. For statistics on tourism and book translations, see International Tourist Travel, Tables 154-5, pp. 458-76 and Tables 208-10, pp. 790-95.

The number of multinational corporations is given in: Raymond Vernon. Sovereignty at Bay: the Multinational Spread of U.S. Enterprises. New York, Basic Books 1971. 326 p.

Growth of the Global Satellite System 1/

Year	Countries with Antennas	Number of Antennas	Satellite Pathways	Leased Equivalent Half-Circuits	Television Half-Channel Hours
1965	5	5	1	150	80
1966	6	8	1	172	152
1967	11	15	10	1,049	450
1968	13	20	19	1,525	1,372
1969	24	41	82	2,984	1,826
1970	30	51	131	4,388	2,428
1971	39	63	181	5,834	3,562
1972	49	79	255	7,527	6,792
1973	52	85	293	9,814	6,817
1974	60	104	359	11,507	7,361
1975 2/	71	123	n.a.	n.a.	n.a.
1976 3/	82	157	n.a.	n.a.	n.a.

Communications Satellite Service was introduced:
Atlantic Region June 28, 1965
Pacific Region January 27, 1967
Worldwide July 1, 1969

Less dramatic perhaps, but quite significant are the words of a personnel director of 123,000 non-American employees who work in 117 countries for a U.S. multinational:

> "it's amazing how we have ... over these 25 years that the World Trade Corporation has been formed, (been successful) in getting people, especially in their IBM work, to think very much alike . . ." 4/ (emphasis added).

1/ COMSAT Annual Report to the President and the Congress, 1975. Washington, COMSAT, 1975. p. 4.

2/ COMSAT Pocket Guide to the Global Satellite System. Washington, COMSAT, 1977, p. 14.

3/ Ibid.

4/ Quoted from a speech by Russell E. Cogan, Director of Personnel, IBM World Trade Corporation, to IAA Luncheon, April 9, 1974, Princeton Club, New York.

What are the foregoing implies is that in examining specific mass media products which circulate abroad we are focusing on only a few pieces of a vast communications mosaic. Yet we must not forget these media are but pieces.

1. Mass Media Merchants

The Bureau of Economic Analysis in the Commerce Department has grappled also with the question of just how much communications goods and services this country exports. The bureau's efforts reproduced below show that from 1960 to 1973 the dollar value of these goods has tripled; those exports worth over a billion dollars favorably affect the U.S. balance of payments position.

U.S. Exports and Imports of Goods and Services
(Millions of dollars)

	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973
U.S. exports of goods and services:														
1. Rental and sale of films and tapes	187	199	220	229	257	275	299	301	300	288	299	296	339	335
2. Communication services	68	70	45 1/	46	85	105	134	159	192	244	304	314	342	396
3. Exports of books, magazines, maps, and other printed matter	136	149	160	175	201	225	260	279	291	311	326	332	346	389
U.S. imports of goods and services:														
1. Rental and sale of films and tapes	15	10	10	10	10	10	12	13	13	13	13	13	13	13
2. Communication services	67	69	48 2/	48	89	115	133	161	197	247	291	336	378	450
3. Imports of books, magazines, maps, and other printed matter	46	49	58	62	69	77	97	103	115	126	160	165	216	229

1/ Beginning with the 1962 estimates, transactions of some companies were no longer included in our estimates because those companies created foreign branches to provide communication services abroad.

U.S. Department of Commerce, Bureau of Economic Analysts, October 1974.

These statistics provide some insight into the magnitude of the field of commercial mass communications between the United States and other countries and they suggest that, at least for some segments of the industry, external business is significant if not vital. For proprietary and competitive reasons, it is difficult to obtain all the information that would be necessary to present a detailed financial picture of the situation. But it is reasonable to assert that some U.S. communications firms find the international marketplace profitable and, therefore, have a commercial incentive to be major transnational communicators.

Who are these major, commercially motivated, worldwide mass media communicators? The list could be long, but here it has been pared to the Associated Press, United Press International, the New York Times and Washington Post-Los Angeles Times supplemental news services, the International Herald Tribune, The Wall Street Journal, Time, Newsweek, Reader's Digest and the motion picture/telefilm exporting industry. Much, of course, is missing. Neither the non-profit National Geographic which circulates 700,000 copies in Canada and 1.5 million elsewhere abroad, nor the Rome Daily American and other small English-language newspapers are included, to cite only a few. Since commercial and worldwide are the selection criteria used here, the final choices are relatively few.

a. General News Agencies. Of the world's five general news agencies, two are American--the Associated Press (AP) and United Press International (UPI).

Furthermore, they are more competitive than the Soviet TASS news agency whose ideological biases are a severe limitation, the British Reuters which does not have a photo service and the French Agence France-Presse which is comparatively small. The non-Americans enjoy some peculiar advantages stemming mainly from special relationships established between their home governments and foreign countries; such advantages normally were manifested in preferences, not exclusion. There are very few places where the others operate and from which AP and UPI are excluded. Neither AP nor UPI has a Peking bureau, for instance, although not long after President Nixon's 1972 trip to the People's Republic of China (PRC) both agencies negotiated exchange agreements with the Chinese news agency Hsinhua. In addition, AP and UPI correspondents now occasionally visit the PRC.

The services the American news agencies provide worldwide are well known to anyone who reads newspapers and listens to news broadcasts. What may be less will appreciated is the extent to which these services are available around the globe. From the following self-portrait provided by UPI, we get an international overview of one of these organizations:

> United Press International is the world's largest independent news gathering organization... UPI delivers its news, newspictures, newsfilm and audio services to more than 6,500 subscribers in 114 countries and territories. It operates 238 bureaus in 62 nations and employs approximately 10,000 full and part-time reporters, photographers, editors, telgraphers and technicians. UPI news dispatches are translated into 48 languages. The UPI communications network is a system of intercontinental radio teleprinter channels totalling more than 1,200,000 miles. It is a two-way complex that speeds news to and from every part of the world in a matter of seconds. An estimated

> 4,500,000 words of copy are transmitted by UPI every day ... The UPITN syndicate service to television stations handles an estimated 20,000,000 feet of newsfilm per year on a global basis. UPI Audio provides audio coverage--actualities and voice reports--from wherever the news breaks worldwide to more than 700 radio and television stations throughout the U.S. and abroad... The Ocean Press wirelesses news bulletins to ships at sea... The Special Services bureau gathers material for magazines, radio, and television networks and various specialized publications on a regional, nationwide or international basis . . . 1/

Of course, UPI and AP (the latter has similar sized foreign operations) were not always giant international communications organizations. Yet by the mid 1970's UPI had reached a point that permitted its President Roderick W. Beaton to state that, "Foreign news media are relying more and more on UPI for global coverage" and his comment (made in the company's 1973 Progress Report) is supported by the fact that close to half of UPI's 1300 newspicture subscribers are outside the U.S.

b. Supplementary News Services. Just as the general news agencies have been joined domestically by so-called supplementary news services, two of these additional news carriers -- the New York Times and the Washington Post-Los Angeles Times services -- today have foreign operations, too. The Times is the larger of the two, both in number of foreign subscribers (136 versus about 60) and size of file (40-50,000 words versus 20,000). Some of the material is available in Spanish, French and German.

1/ Extracted "From United Press International," a factsheet produced by UPI.

From these sources, foreign newspapers reprint international and national news, as well as articles on science and culture, and commentary. Local politics and sports are of little interest abroad, but the latest developments from the White House as reported by the Post, an economic story from Japan by an L.A. Times correspondent, or the national mood as assessed by James Reston are welcomed by an increasing number of foreign newspapers.

In practice the process is approximately as follows. A Hong Kong correspondent of the New York Times writes and then cables to New York a story about the Peking leadership. His dispatch is edited for the next edition of the Times but also is picked up by the Times news service which sends it across the nation and around the world almost instantaneously. One result is that the story appears not only in the newspaper of origin but in the South China Morning Post, one of Hong Kong's own English language dailies, too. In this instance the reading public of that British colony has seen China through American eyes.

With only about 200 foreign outlets combined, the supplementary news services do not rival in size the general news agencies which have several thousand subscribers abroad plus distribution to numerous national news agencies. But among the ranks of the 200 are many of the world's most prestigious newspapers. And even though these papers at times print little of what they get (Le Figaro, for instance, publishes none of the supplemental copy it buys) the material is useful for background and as source material for stories that eventually are written and published.

c. International Herald Tribune. The supplemental services get very good play abroad in the International Herald Tribune (IHT). This is not surprising since the New York Times and the Washington Post each have a one-third interest in the newspaper.

The Trib, as it is commonly called, is the survivor of what originally was a Paris-based edition of the now defunct New York Herald Tribune. It is still published in Paris but a former sense of localism has evaporated as the paper has reached out in recent years to some 70 countries where it circulates about 125,000 copies daily. Much of its readership, like that of the news magazines, is comprised of a new breed who might be called internationalists. They are a generation born in many lands, but bound together by a set of common factors. Nearly all have had the benefit of higher education, many have studied abroad (frequently in the U.S.), nearly all speak English (ever more a lingua franca), and members of this new breed of internationalists generally are employed by a multinational corporation are engaged in other work that generates an interest in foreign (often American) political and economic affairs.

The IHT provides a unique service to these readers. According to one of its own staffers writing in the Columbia Journalism Review, the newspaper has been "variously described fo. its size (an average of 14-16 pages) as the 'most readable and informative daily published anywhere' (Time); 'the only truly European paper despite being American' (a Common Market official); in many ways a 'superior production to

our national dailies' (Britain's New Statesman); and 'superbly edited' (columnist William F. Buckley, Jr)."[1/]

Such generous praise does not infer that the Trib is a forerunner of a new wave of international journalism, but the newspaper does seem to have firmly staked out a position, which it intends to broaden. A printing plant has already been established in London and plans were reported to set up another in Frankfurt; there even has been serious talk of an Asian edition published in Tokyo.

d. The Asian Wall Sreet Journal. America's second largest newspaper,[2/] The Wall Street Journal, has already begun operations in the Orient. On September 1, 1976, The Asian Wall Street Journal came rolling off presses in Hong Kong. WIth an initial circulation of over 10,000, the new publication was intended to serve an elite readership of top management and senior government officials throughout Asia and Australia. While the format is very similar to the domestic U.S. editions of the Journal, the news content of the 12-page Asian Journal is different in that stories are reported and selected on the basis of their significance to Asian readers.

The Asian Wall Street Journal is a joint venture with four other newspapers in East Asia. The South China Morning Post of

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1/ James O. Goldsborough. "An American in Paris: The International Herald Tribune." Columbia Journalism Review, v. 13, no. 2, July/August 1974. p. 37.

2/ Only the daily (Monday-Friday) circulation of the New York Daily News (1,941,917) exceeds that of The Wall Street Journal (1,406,192). Source: Editor and Publisher 1976 Yearbook (New York: Editor and Publisher, 1976).

Hong Kong, the Nihon Keizai of Japan, The Straits Times of Singapore, and the New Straits Times of Malaysia are all minority partners.

The Asian Journal is the second major investment abroad by its corporate parent, the Dow Jones Company. In 1967 Dow Jones joined with the Associated Press to form an international news service, the AP-Dow Jones Economic Report. Together they also operate a companion service known as the AP-Dow Jones Financial Wire. These two news services are aimed at serving a growing world market for economic and industrial information. During its first decade of operation, AP-Dow Jones had signed up subscribers in 34 countries.

e. The Magazines. Of all the American mass media products that circumnavigate the globe, the best known probably are three magazines -- Time, Newsweek and Reader's Digest (RD). The news magazines have especially high profiles and are closely identified with this country. While one suspects Time would most often be mentioned first if you asked a foreigner to name an American magazine, Reader's Digest has by far the greater foreign circulation.

The Digest is published in 22 countries outside the United States with a total foreign circulation of 11,615,000 copies in 13 languages; with multiple readership of each copy it literally reaches tens of millions of non-Americans. The Digest claims, in fact, to be the most popular magazine in several foreign countries, including all the Spanish-speaking nations.

The Digest's first exports went to Britain in 1938. Two years later the first foreign language edition, Spanish for Latin America, was launched mainly because the patriotic publisher of the magazine, DeWitt Wallace, wanted to make a contribution to combatting Axis infiltration of the Southern Hemisphere even if it proved costly. Instead of an anticipated deficit, his Spanish edition for Latin America was an immediate, profitable success. Following the war, overseas expansion was rapid for the Digest, which, in effect, became a multinational corporation. What businessmen usually refer to as foreign subsidiaries, RD terms, "national editions."

Non-American local editors for 25 different countries revise each national edition for local consumption. Their principal resource is a pool of material generated from the worldwide network of RD's editorial offices from which they may select articles for publication or adaptation. They can also originate copy themselves. These editors have general guidelines to present "articles and features, edited in concise form, covering a wide variety of subjects of both specific and general interest, appealing equally to men and women, and balancing local and international topics." The actual amount of editorial variations among editions is said to be about 30 percent.

The formula has been so successful that others -- notably Playboy and Cosmopolitan -- reportedly have been working to build up similar national editions in some European countries. Furthermore, there has been evidence that many foreign readers -- probably because

the Reader's Digest they receive is in their native tongue and editorially attuned to local sensitivities -- perceive RD as an indigenous publication.

By definition, the news magazines cannot have the editorial flexibility upon which the Digest's phenomenal success depends. Nonetheless, both Time and Newsweek have adapted themselves to the changing international environment.

On March 12, 1973, Time's cover was a fluttering multi-colored flag-of-flags, more precisely a flag artistically stitching together the nine flags of the Common Market countries. The cover both symbolized and helped announce a new European edition whose prospectus was stated by its editors this way:

> Each week Time Europe will contain additional pages of news and analysis of special interest to our European readers ... Time readers, an estimated 25 million of them, form a significant international community, linked by their weekly involvement with Time. We believe they come to Time for news of the U.S., and for news of the world as seen from an American perspective. This service will remain unchanged ... But we also realize that Europe's interests each week are not always the same as U.S. interests. That is why we have started this edition, whose additional pages will reflect more particularly the European perspective. 1/

The new edition said more than the mere fact that Time has travelled a long international road since its first overseas distribution in 1941. The edition, in a subtle way, said that henceforth, each week 430,000 copies of Time, distributed from Scandinavia to South Africa (the actual geographic reach of the edition) would embrace

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1/ Quoted from: Time Europe. "To Our Readers: Announcing a European Edition", March 12, 1973. p. 8.

the concept of Europe. Time had become a force -- although not necessarily an outspoken advocate -- for European integration.

The formula for Time Europe (basically 6-8 pages added to the U.S. edition) is virtually identical to that of now defunct Time Canada, an edition whose one-time circulation of 557,000 made it relatively even more pervasive in Canada than the magazine's domestic edition was in the United States. With circulations of 180,000 in Asia and 155,000 in Australia and New Zealand combined, Time is said to be considering a special regional edition for that part of the world. But there is apparently no serious thought yet of reviving an ill-fated earlier attempt at a special edition for Latin America, where Time's circulation is 115,000.

While Time thought regional, its chief competitor, Newsweek, thought international. On January 1, 1973, Newsweek introduced what it described as "the world's first truly international newsweekly." What is meant is that Newsweek International, which circulates about 400,000 copies abroad weekly, is editorially designed for a world-wide audience. In the magazine's own terms, "The crucial criterion by which every story considered for our International Editions will be judged: Is it of compelling interest to our readers in Paris as well as Frankfurt, in Sydney as well as Singapore? Newsweek is attempting to build an audience among a growing international elite of businessmen and government decision makers whose information needs are similar in an interdependent world. The magazine's contents are on average 50 percent different from the material published in its

domestic parent. Among the exclusive material in Newsweek International are columns written by distinguished foreign journalists and analysts. Newsweek International has refined its American accent, say its editors -- a development which certainly reflects the reality of the U.S. posture in an interdependent global environment.

Long before any of the magazines began modifying their editorial contents to better suit the needs of foreign readers, all had mastered the art of tailoring advertising space to specified geographical areas. And this has been a special strength of the American magazines whose business acumen is perhaps underrated in evaluating their successful penetration of foreign markets.

f. Visual Media. Because there has been an amalgamation of films and television programs on film and videotape, the export of both movies and television programs is promoted by a single organization, the Motion Picture Export Association of America, whose member companies produce both TV shows and theatrical movies. An American visual industry is thriving -- both at home and abroad -- but an important distinction can be made: movies are multinationals, while TV shows are nationals. The former is an internationalized art while the latter is an exportable domestic product.

With the recent resurgence of a few successful, made-in-Hollywood movies, it once again is possible to speak accurately of an American film industry. However, during the 1960's the American movie industry had largely gone abroad through a vast network of subsidiaries that made, distributed, and exhibited movies. A student of the international

film business, Professor Thomas H. Guback of the University of Illinois, has written that, "Perhaps no industry in the United States is so heavily dependent upon foreign markets as is the film industry. By the late 1960's", he said, "foreign earnings represented about 53 percent of total film rentals."[1/] While movies may not have reached the plateau of high culture and thus become "a national", they are very much international. Guback cites the case of "Last Tango in Paris", a film coproduced under an Italian-French treaty. It starred Marlon Brando, was heavily financed by a subsidiary of United Artists and, in the end, was distributed by that American film company.[2/]

Today we are confronted with a problem of definition if we attempt to determine to what extent "American" movies are shown abroad. Recent inquiries of the export association confirm that even persons directly involved are hard-pressed to say what is an "American movie", beyond perhaps defining it as a film in which the majority ownership is by U.S. firms. Although precision may be exclusive, it seems fair to conclude, however, that the internationalized art -- and business -- of film making bears a significant American imprint.

A problem of definition has not yet significantly affected the other side of visual media, television programs. There is a growing

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1/ Thomas H. Guback. "Film as International Business." Journal of Communication, v. 24, Winter 1974. p. 92.

2/ Ibid. p. 97.

trend toward TV coproductions with and among other countries. But the great bulk of programming remains of single national origin and, of the total amount of TV shows exported by all countries, the United States has a lion's share.

A Finnish researcher, Tapio Varis, has compiled the first useful international TV inventory in which he estimates that American foreign program sales total between 100,000 and 200,000 hours yearly, distributed more or less equally among Europe, Latin America and Asia.[1/] Britain was second with fewer than 20,000 hours.

Exporting is a very profitable, indeed a vital aspect of the TV production business. Foreign sales in 1973 totaled $130,000,000. Canada, Australia, Britain and Japan were the best customers, although not necessarily the biggest volume buyers. Canada and Britain, for instance, have quotas limiting the number of programs they purchase, but the prices they pay are the highest.

The pricing system is one reason American programs are televised in more than 100 countries, for the producing companies charge what the market will bear. Variety reports that the price range per half hour episode ranges from a high of $4,200 for Britain to a low of $20 for Haiti.[2/]

1/ Tapio Varis. International Inventory of Television Programme Structure and the Flow of TV Programmes Between Nations. 1973. Tampere, Research Institute, University of Tampere, Finland, 1973. p. 195.

2/ See: Variety. "Global Prices for TV Films," v. 273, no. 9, January 9, 1974. p. 112.

What do these countries get for their money? Pretty much the same thing Americans get at home. In a six-language catalogue listing 138 programs and TV series, one of the major exporters, Viacom International Inc., says it offers "laughter, suspense, romance, excitement, happiness, information, knowledge, nostalgia and news (to an) audience (that) is everywhere." The 1973 Varis study indicated that the only countries with television systems that did not broadcast some U.S.-produced programs were China, Mongolia, Albania, North Vietnam and North Korea.

American domination of the international TV program marketplace is not difficult to understand: the high technology medium was developed here and soon saturated the national market; shortly thereafter it sought foreign expansion. Some foreign governments, particularly in less-developed countries, indirectly encouraged its spread by contracting for U.S. technical assistance, and even permitted American financial investments in local TV. But investment ventures collapsed for, as one TV executive remarked, no government would long allow foreigners to control their TV stations.

How long American hegemony in TV program exports will prevail is uncertain, for already restrictions and growth of TV systems in developed countries have eroded the U.S. position. Eventually, perhaps, TV exporting, like movies, will become internationalized, albeit not without an indelible American imprint.

2. Flow Patterns. Up to this point, we have seen that in pursuit of profits in new markets a host of domestically well-developed

private communications organizations including certain mass media have expanded significantly into foreign countries.

The usual pattern of international development began with random foreign sales. American mass communicators, ideologically committed to the concept of free flow of information, initially took a laissez faire attitude toward international distribution. Some still do. For instance, the President of U.S. News & World Report, John H. Sweet, said his magazine's 40,000 foreign circulation is the result of a decision "to just take whatever circulation comes to us on a completely voluntary basis and let it go at that."[1/]

But as random sales figures grew large and meaningful for some organizations, the potentiality of the international marketplace beckoned and they more or less drifted into international operations. Their usual method was to seek access to, not control of, foreign markets. Generally they wanted neither privilege nor restrictions, just a fair opportunity to do business.

Three sets of forces then had to interact in order to stimulate significant foreign dissemination: audience interest, open access and profit potential. Audience interest depends on cultural factors; open access is a political matter; profit potential is an economic consideration. Communications companies also add a fourth crucial dimension: a distribution capability which is a hallmark of many American corporations. Taken together, the combination frequently has been a very successful formula.

1/ Quoted from a letter to the author dated February 19, 1973.

When analyzed in these terms, the question of how these media achieved their present position can be answered. Time's case is a good illustration of the process.

Time has an even larger circulation in Britain than does the respected and more sophisticated Economist (68,000 vs. an est. 50,000). But its national imitators in France (L'Express, circ. 583,000) and Germany (Der Spiegel, circ. 898,000) far outdistance the American weekly's circulation, 38,000 and 41,000 respectively in those countries. In the case of Britain, Time's content gives it an edge, but in the other two countries where content differences are less, the cultural factor (principally language) is determinant. In communist countries, Time's circulation is virtually non-existent because access is denied for political reasons, while in less developed countries its dissemination often is limited by economic factors. Economic limitations are neither merely the relative high cost of the magazine nor the lack of advertising incentive, but they are linked more basically to overall development of a country.

Even in large Third World countries, the audience base is very narrow for such publications. But it should be noted that when the base, however small, is politically accessible and without severe cultural barriers, the extent of circulation within that narrow base may be considerable. Data supplied by Time Inc. suggests, for example, that its news magazine is widely read by the handful of elites in English-speaking black Africa, but little read by similar groups in French-speaking African countries.

As was indicated earlier, news magazines do not have the flexibility of less direct media like news agencies. What we may call indirect mass media can more easily overcome some factors potentially restrictive to their international flow. The most indirect are the news agencies which must pass through at least one set of hands (the local newspaper or broadcast station) and sometimes two (a national news agency first, then to local outlets) before reaching any foreign audience. This two, or sometimes three-step flow helps overcome barriers that otherwise curtail direct media exports. The ability to be indirect where possible--to co-produce, sell to national news agencies and edit national editions--apparently leads to greater international distribution. Since it does not necessarily produce greater revenue, however, even the news agencies prefer to sell their product directly whenever possible.

In sum, what makes for the substantial flow of American mass media through the international system is the technical communications abilities of large U.S. firms whose media wares are more-or-less adaptive to those foreign cultural and political environments in which they can profitably do business. This is true for non-American media as well.[1/] Furthermore, it explains why the private U.S. mass media do not spread themselves evenly around the world and, in the case of radio, why they do not even bother to enter the international field.

1/ See: Foote Cone and Belding. Overspill Media in Europe. London, Foote Cone and Belding, April 1974. 44 p.

B. The Impact of U.S. Mass Media Abroad

The international flow of U.S. media products has had varying impacts abroad. For example, a youngster was killed in Britain while vainly trying to duplicate a feat he'd seen on an episode of the imported "Batman" television show. Students bloodied while battling Chicago police during the Democratic National Convention in 1968 correctly chanted, "The whole world's watching". The New York Times disclosed the contents of the Pentagon Papers to friend and foe alike.

There are also more favorable examples. "Sesame Street" is viewed by many children in foreign countries, too. Thanks to television, millions upon millions around the world were witnesses to Neil Armstrong's historic "... one small step for mankind". As a result of the wide media publicity accorded his diplomatic successes, former Secretary of State Henry A. Kissinger was embraced by news reporters all over the world as a miracle worker.

Here is a tiny bit of the mountain of evidence through which we must sift in quest of an elusive answer to the question: What is the impact of American private mass media abroad?

Usually the question is refined into two more precise inquiries; what image of the United States do the mass media export? Do the media support U.S. foreign policy by stimulating favorable public opinion abroad? There have been quantitative attempts at answers. For instance, opinion polls taken abroad by the U.S. Information Agency (USIA) and reported in visual media industry journals in 1964

found that American movies and TV programs created overall favorable impressions among foreigners.[1/] There are also less empirical conclusions such as the certainty that foreign public opinion was influenced by briefings Secretary Kissinger gave to the handful of American newsmen who accompanied him on trips abroad. The trouble is that neither of these examples tells us very much. The first is imprecise and the second merely says that well-articulated policies are widely disseminated by the press. But, of course, what we really want to find is the ever-elusive communications cause-and-effect relationship. Although we are without a scientific model with which to pursue this goal, we can, nevertheless, reach some valid conclusions.

They are: (1) American media influence foreign media; (2) an international (or transnational) information elite has developed; (3) mass media contribute to the spread of an Americanized world culture, and (4) the media are helping shape an interdependent world.

1. Media Influence Media

Is there a major city anywhere in the non-communist world without an English-language daily newspaper? How many national imitators are there of the Time and Life formats? A dozen, a score, half-a-hundred? Where in the world are there radio stations that do not broadcast news on the hour or television stations that flout the

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1/ Reported in the Motion Picture Daily and The Film Daily on December 8, 1964.

unofficial dictum of programming in half-hour blocks? Our mass media merchants have not only exported their wares, but also their styles and formats so that even anti-American journalists abide by the pyramid style of news writing.

After observing the influence of American mass media on their foreign counterparts, sociologist Jeremy Tunstall of London's City University has concluded that "The media are American."[1/] And if both he and Marshall McLuhan, who has argued that the medium is the message, are correct, then the direct influence of U.S. media abroad may well be very powerful in that they have a significant impact on key institutions of other societies, namely foreign mass media.

Tunstall's study led him to put forth a master hypothesis which states:

> There is no country or territory in the world whose newspapers, magazines, films, records, radio and television have not been influenced by those of the United States; and in most countries this influence has included, during the formative stages of the medium locally, the importation of substantial quantities of American-made products. 2/

This hypothesis, while sweeping and therefore subject to criticism in certain situation-specific cases, is difficult to challenge.

An example of this indirect influence is the case of LATIN, the Third World's first regional news agency, which was started in 1970 with the intent of reporting Latin American affairs from a Latin American

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1/ Quoted from draft article: Jeremy Tunstall. "The Media Are American." London, The City University, 1974. 37 p.

2/ Ibid. p. 3.

perspective. A recent study of the regional agency, which besides covering Latin America also distributes stories from the Reuter and New York Times news services, found that "LATIN is becoming quite similar in news coverage to the large foreign (read American) news agencies already operating in Latin America."[1/]

Why has this occurred? The case of LATIN is apparently no different from that of other non-American commercial mass media. the world commercial is emphasized, for the reigning champions of mass communications-for-profit are American firms. And to successfully compete against them, the old saying of "if you can't beat 'em, join 'em" is operative.

a. Audience. Who are the people who read Newsweek in Brussels and Bangkok, watch "Hawaii Five-O" in half the countries of the world, and depend on AP and UPI to be global watchmen? The question begs and answer for, after all, the final impact of any communications is upon individuals.

There is mounting evidence that direct media, especially magazines, are one of the principal bonds among what may be called an international information elite. Preliminary research done by the U.S. Information Agency reveals that this global elite is "linked by many common factors transcending national, cultural or regional

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1/ John Spicer Nichols. University of Minnesota School of Journalism and Mass Communications. "LATIN--Latin American Regional News Agency." San Diego, Association for Education in Journalism, August 1974. p. 17.

differences. "These factors," an Agency document says, "have mainly to do with increasing similarities in their education, in exposure to contemporary ideas, and through increased use of international media" (emphasis added).[1/]

This is borne out by research done by the media themselves. A demographic profile of Time's non-American readership in 1974, for instance, depicted its typical reader as a 37-year-old university or technical school graduate, who was probably a business executive earning more than $13,000 a year which enabled him to own a car, buy life insurance and travel occasionally to foreign countries. Similarly, Reader's Digest says its international editions appeal "to an affluent, well-educated, well-informed quality audience."

It is important to note that this transnational elite is a tiny group of individuals, comprising minorities within the elites of their own countries. Nonetheless, who would doubt that these individuals who travel on Boeing 747s and DC10s, stay in Hilton and Sheraton Hotels and read Time and Newsweek are a highly influential, albeit loosely structured group of internationalists.

Much less is known about the audiences who consume indirect mass media, such as news agency material and TV programs, although we do know, a priori, that they are neither illiterate masses nor the indigent of the world.

1/ U.S. Information Agency. The Nature of USIA Audiences and How Best to Reach Them. Agency study prepared by Peter Janicki. Washington, July 1973. p. 2.

Furthermore, we know very little about the extent, if any, to which our media exports reach a second-tier of nationalist-oriented elites. When we learn that the Chancellor of Germany speaks with the President of France in English, that the Prime Minister of Pakistan was educated at Berkeley and a leading Greek politican was once an American university professor, we may conclude that our society is thoroughly plugged into the world's elite power structure. To a high degree we are. But there also is a wave of vernacular-speaking, locally educated elites emerging in the Third and Fourth Worlds. Their day seems to be arriving and they may well be virtually untouched by our mass media as well as other Western institutions.

b. World Culture. Henry Luce's oft-quoted remark that we live in an "American century" has both proven accurate and apt to its originator, for U.S. mass media, including, Luce's own Time-Life publishing empire have been involved in the process of Americanizing the world. The "American way" has been bandied about the world so much that today in many instances we more appropriately speak of international, or multinational ways. Our workers belong to internationally federated unions, our big companies are multinational corporations, the Smithsonian museums are loaded with foreign artifacts, our Little League World Series are won by Asians, our boxers fight in Africa, our monuments include the original London Bridge transposed to Arizona, and so goes the endless list of this country's involvement with

other nations. So heavily are our institutions involved with foreign societies that we have spread our American culture worldwide.

An additional -- and unintended -- by-product of the effectiveness of the U.S. mass media abroad is the growing exodus of Latin Americans to the United States as illegal immigrants. A letter to the New York Times from a reader in Nassau, Bahamas in 1975 suggested that poverty and oppression were not the only forces influencing these people to enter the U.S. It cited the role of the U.S. media as an important contributing factor:

> Radio, TV, movies, comics, magazines, commercial billboards, newspapers, all put out and projected on a massive scale, hammer insistently, day after day, on the brains of the Latin American people; each trying to sell U.S. products and U.S. lifestyle. Hollywood movies, for example, present the U.S. as a country of affluent people who travel in shiny limousines and live in elegant homes, giving us the impression of a land of abundance, prosperity and happiness. 1/

The mass media play a leading role in this process for they transmit ideas and images about ways in which societies may be structured and organized. They set agendas, confer status and are watchful for dangers and opportunities. They are, in sum, an integral part of what some have angrily called the "Coca-Colonization" of the world and others see as movement toward formation of a harmonious international community.

Are Americans homogenizing the world through the use of mass media? Yes, say a chorus of vocal critics whose voices are rarely

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1/ New York Times, February 4, 1975, p. 32.

heard at home for precisely one of the reasons about which they are outraged -- the communications flow is one-way.

The President of Finland, Urho Kekkonen, has charged that the international flow of information is so imbalanced tht it does not possess "the depth and range which the principles of freedom of speech require."[1/] Canadian nationalists became so upset with Time for "shoving the American view down Canadians' throats", as a prominent figure in their movement put it, that a successful campaign was launched to strip the American news magazine of a special tax advantage which had allowed it, along with Readers' Digest, to operate on the same basis as indigenous publications. As a result, Time Canada ceased publication in 1976 (but the U.S. edition of Time still circulates widely in Canada.)

At the United Nations the issue of controlling the as yet unperfected medium of international direct satellite broadcasting into foreign homes has given the Third World an opportunity to accuse the United States of engaging in "cultural imperialism." And, of course, despite detente and the Helsinki accords, the Soviet Union still seals its borders against private U.S. media which Moscow once termed part of "imperialism's foreign political propaganda machine". In 1974 the U.S.S.R accused U.S. private media of being

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1/ Remarks made by President Urho Kekkonen at a symposium on the international flow of television programs at the University of Tampere. Later quoted by International Broadcast Institute, no. 3, London, 1973. p. 1.

"poisoners" of efforts to improve bilateral U.S.-Soviet relations.[1/]

Apparently because they felt that a majority of countries of the world had become hostile to American mass media activities abroad, the Russians made an almost successful, by several accounts, effort to change a key rule of the game. At the 1976 UNESCO general conference in Nairobi, the Soviet Union introduced a resolution that would hold "states responsible for the activities in the international sphere of all mass media under their jurisdiction". The proposal runs counter to the democratic principle of free flow of information which is embodied in the United Nations' 1948 declaration on human rights. After considerable deliberation the Soviet proposal was shelved. But the U.S. had gained nothing more than a tactical victory, for the Third World, whose votes were decisive, made it clear that unless positive steps are taken to curb the effects of "cultural imperialism," the outcome will very likely be different at the next biennial UNESCO meeting in 1978.

While the Soviet position is unacceptable to us, and any suggestion that the principle of free flow of information be redefined

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1/ For Soviet analysis of private media as part of an alleged U.S. propaganda machine, see: Georgi Arbatov. The War of Ideas in Contemporary International Relations. Moscow, Progress Publishers, 1973. pp. 153-254.

The label "poisoners" was pinned on major Western newspapers, especially the New York Times, by Soviet commentator Yuri Zhukov in a "Letter from the Ideological Battlefront," printed in the Moscow monthly magazine Znamya, October 1974, as reported in the New York Times on October 11, 1974.

is troublesome, we nonetheless must recognize that the international flow of mass communication is imbalanced and the United States is the major source of origination. This phenomenon, coupled with other vast and varied U.S. international involvements, gives credence to the notion that a world culture imprinted "made-in-America" exists today.

2. Shaping an Interdependent World

While today we often think of global interdependence in terms of the international sharing of material resources, a good case can also be made for the interdependence of information. As the world in which we live grows increasingly more complex and interrelated, our information requirements expand proportionately. In fact, in the United States, the most technologically advanced of all societies, material development has been accompanied by an information explosion to the point that our libraries bulge and the phrase "information overload" is not an infrequent complaint. This phenomenon notwithstanding, we still maintain a fundamental belief in the primacy of shared knowledge to improve the common welfare. We have a multiplicity of systems for disseminating information (as knowledge is called when communicated) and not the least of these means are the mass media. The values, images and data they transmit help shape our lives. So too these media today are contributing to the process of shaping world order, for the news media especially are transnational converyor belts of <u>needed</u> information. There exists, what an economist might call, "a demand profile" for American media products abroad.

U.S. private mass media are far from perfect channels of international communications. They neglect some regions, are forbidden to operate in others, and efficiently distribute inappropriate information to still other audiences. Nonetheless they are regular, repetitive, normally dependable sources of information. Just as major government leaders need "hot lines," lesser mortals also require communications networks to share information useful in shaping their portion of an interconnected, if not yet fully interdependent world. U.S. mass media are major contributors to such networks.

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II. THE VIEW AHEAD: DIRECT SATELLITE BROADCASTING AND INTERNATIONAL COMMUNICATIONS*

A. The Technology

Technological innovation and experimentation now underway are contributing to the creation of a rapidly changing communications environment. The potential impact of direct satellite broadcasting, in particular, on international relations may be great enough to change many assumptions about the ways in which governments and people interact. It might therefore be useful in this context to contrast traditional television systems and direct satellite broadcasting.

Conventional television broadcasting uses communications satellites only to relay signals from large, central ground stations in the originating country to similar stations in either the same country or a foreign country.[1/] Once these signals are received, they are then retransmitted by conventional terrestrial broadcast facilities such as coaxial cable or microwave relay. In other words, once a program originating abroad is received in another country, its further distribution can be completely controlled, edited or otherwise censored before it is broadcast by domestic stations and networks.

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* This study was prepared by Joel M. Woldman, Specialist in U.S. Foreign Policy in the Foreign Affairs and National Division of CRS. It is a revised and updated version of part of a study of U.S. international information and cultural programs and activities done for the Senate Foreign Relations Committee in 1975.

1/ Communications satellites can also be used to transmit radio signals from the point of origination to a conventional shortwave relay station elsewhere. It is not yet possible, however, to transmit directly from a communications satellite to existing radio sets; only signals from conventional transmitters can be received by today's radios.

Direct satellite broadcasting, by contrast, would permit the transmission of a signal directly from a satellite to a home receiver, which may be augmented by a more or less expensive and visible special antenna or conversion device. Community broadcasting, an intermediate step between conventional and direct satellite transmission, involves the reception of satellite signals by relatively small and inexpensive ground stations (often directly connected with a TV monitor), costing far less than the central ground station in general use today.

As evidenced by the recent ATS-6 (Advanced Technology Satellite-6) experiments in the United States, Brazil, and India, satellite broadcasting into community-type receivers is technologically a reality today, although transmissions from a satellite capable of such broadcasting could not necessarily be received by all community receivers, since the satellite and receiver would have to be compatible. Direct satellite broadcasting into the kinds of home television (and radio) receivers currently in use, however, either unaugmented or without special antennae, has not yet been developed.

Officials at the U.S. National Aeronautics and Space Administration (NASA) believe that with sufficient financial backing, U.S. scientists or those of other countries could develop satellite broadcasting systems capable of transmitting directly into augmented (specially modified) home receivers. At the present time, however, such broadcasting is not considered technologically possible anywhere in the world, in part because of the variation in frequency standards.

Further developments in broadcast satellite technology may be hindered by related economic and political factors. In the United States, the Federal Government announced in 1975 that it had no plans to fund further research in this area,[1/] and private communications enterprises have not found it economically attractive to support a massive research effort. The United States already has a well-developed, commerically viable television relay system. Since this arrangement permits a more efficient amalgamation of locally- and nationally-sponsored commercial networks than would a satellite system, there is little financial incentive to expand the domestic system. Nor does an international commercial direct satellite network appear financially promising so long as the political issue of control over international broadcasts is unresolved; the existing satellite relay system is sufficient for present demands.

Other nations whose domestic television systems are not as well developed as that of the United States, however, might find it more practical to establish satellite community-type receiver systems. Japan, Canada, Indonesia, and the Soviet Union have reportedly considered such systems. Concern has been expressed, however, that such domestic systems might be vulnerable to broadcasts from other countries if compatible foreign satellites were launched.

1/ NASA had no funds in its FY 1977 budget for this purpose. Nor did the space agency have budget authority for direct broadcast satellite research in FY 1978, as of May 1977.

Under a contract with the Japanese Government, General Electric (Japan) and Toshiba have developed a pre-operational semi-direct broadcast satellite which would be powerful enough to transmit high frequency signals to antennae less than three feet wide. Mounted on the roofs of apartment buildings, these antennae -- in effect, small combination earth stations and frequency converters -- would amplify and transmit a color TV signal via cable to individual conventional receivers in the building. Although the "footprint" (reception area) would be wider than the islands of Japan, the signal transmitted by the satellite could not be received elsewhere without the special antennae and frequency converters. It is now expected that the satellite would be launched in late 1977 or early 1978. Initial testing is scheduled to begin in 1978, but with community receiver systems, rather than directly to homes.

B. The Political/Legal Problems of Prior Consent and Censorship

The United Nations has made little progress toward an agreement on international satellite broadcasting since 1972, when the issue of controls crystallized following the Soviet Union's submission of a draft convention on the subject to the General Assembly.[1/] Most nations

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1/ For a summary of the debate on this issue in the United Nations and its specialized agencies, see Ithiel de Sola Pool, "Direct Broadcast Satellites and the Integrity of National Cultures", in Control of the Direct Broadcast Satellite: Values in Conflict. An Occasional Paper of the Aspen Institute Program on Communications and Society Series on Communications. Palo Alto, California, 1974. pp. 27-58. Also see Eileen Galloway, "Direct Broadcast Satellites" (unpublished paper presented at Seventeenth Colloquium on the Law of Outer Space, Intenational Astronautical Federation, Sept. 30 - Oct. 5, 1974, Amsterdam, the Netherlands). 22 p.

with the exception of the United States and, to a lesser extent, the United Kingdom, Belgium, and Japan, appear to be greatly alarmed by the prospect of direct foreign television broadcasts via satellite into home receivers with no provision for host government control or prior censorship. These countries have argued for some kind of consent requirement, with positions ranging from the Swedish-Canadian joint proposal advocating the right of each government to maintain its own regulatory network without actually specifying the mechanism, to the Soviet-sponsored draft convention requiring prior consent before any broadcasts could be beamed by satellite across national boundaries. They fear that free international television broadcasting privileges could result in attempts at political propagandizing, cultural penetration, and commercialism. As a result, strong support has been developed within the United Nations for some type of international control, with debate concentrating on whether or not governments have the right to limit the foreign telecasts potentially available to their people.

In November 1972, the United States cast the only vote in the U.N. General Assembly against referring the matter to the Outer Space Committee. The United States has consistently maintained that any prior consent requirement would violate the principle of free flow of information and ideas as expressed in Article 19 of the Universal Declaration of Human Rights, and that adoption of any binding principles at this time could inhibit future technological development. This position, in turn, derives from the U.S. tradition of freedom of speech as guaranteed in the first amendment to the Constitution.

In this regard, however, Americans tend to forget that other nations do not necessarily interpret this principle as they do and that the problem is often viewed in more relativistic terms outside the United States. Moreover, as noted above by William Read, many foreign governments feel that U.S. communications media already threaten to dominate international information flows and to subvert or destroy less securely established national cultures. A distinguished British student of culture and society has voiced the concern of many foreign intellectuals and their governments that the development of powerful new communications techniques such as direct satellite broadcasting may "enable a few to speak to and apparently for the many, and unless powerful safeguards are constructed, to drive out of competition the more varied and authentic voices that are the true discourse of any society and of humanity." 1/

We have already seen that the bulk of mass media information does originate in the developed countries, especially the United States. Direct satellite broadcasting could reinforce this essentially one-way flow if it were not controlled in some way by the media-consuming countries. Professor Thomas Buergenthal provides one assessment of the problem:

> Put in the context of the present debate over direct television broadcasting, a state may probably validly contend that another state does not have the right to beam certain types of programs into its territory, that it should offer more balanced programs, that it should

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1/ Raymond Williams. "On High and Popular Culture". The New Republic. v. 171, Nov. 23, 1974: 16.

> make arrangements for some equal time or provide a right to reply, that it limit the duration of its broadcasts, and that it ban advertisements....But it probably cannot legitimately assert that its prior consent is required before any television or radio programs may be beamed into its territory. The recognition of an absolute right of prior consent would negate the very existence of the international right to receive and impart information across national borders. 1/

Working Group II (on Direct Broadcast Satellites) of the Legal Subcommittee on the United Nations Committee on Peaceful Uses of Outer Space reported in April 1977 to the Subcommittee that agreement had not yet been reached on three of the most critical draft principles under review, including that of prior consent. Given the many technical and political factors involved in the apparent intransigence exhibited by both protagonists and foes of the free international flow of information, it is difficult to predict when the issue might be resolved.

Yet technology may not patiently wait for politics to catch up with it; the present hiatus in the development of direct satellite broadcasting may be a temporary phenomenon. Dispassionate observers feel that political controls will evolve either simultaneously along with the technology or shortly after the technology is developed. International regulation of radio broadcasting was achieved in much the same manner. A speculative scenario written in 1970 seems basically reasonable:

1/ Thomas Buergenthal, "The Right to Receive Information Across National Boundaries", Control of the Direct Broadcast Satellite: Values in Conflict, p. 80.

> Neither the worst fears nor the brightest dreams are likely to be realized in the future ages of communications satellites....The experts agree today that the direct broadcast satellite will not appear suddenly, but rather will be a late phase of a progressive development of space technology and of economic and technical capacities for ground reception. What can be expected in the early stages is launching of regional distribution satellites to serve a limited number of community receiving installations. With such a system it would be possible for governments to have, if they desired it, substantial control over what their people see and hear.
>
> At the same time, the advent of these satellites will lead to regional or continental structures where nations will gain (very likely through their national broadcasting organizations) a working knowledge of international cooperation in the field of programs. From this experience, international rules of mutual tolerance and neighborliness will develop, permitting maximum advantage to be taken of the new instrument. It is only in extreme cases -- which hopefully the pressures of national public opinion will render more and more rare — that governments would eventually have recourse to the ultimate weaponry that police controls always give them: the jamming of broadcasts and the interdiction of reception. 1/

In a related development, steps were taken earlier this year at a conference in Geneva which have moved the process one step further along. The technical parameters for direct satellite broadcasting were determined by experts from 111 countries during a five-week International Telecommunications Union (ITU) World Administrative Radio Conference (WARC) on satellite broadcasts in the 12-Gigahertz

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1/ Jean d'Arcy. Challenge to Cooperation", Saturday Review, Oct. 24, 1970: 24-25.

2/ For a more comprehensive discussion of thettechnical aspects of this conference, see, Arthus Erikson, "Aiming Satellite TV at Rooftops," Electronics, v. 50, March 3, 1977: 69-70.

band that ended in mid-February. Channel allocations and satellite positions were established for countries in ITU Regions 1 (Europe and Africa) and 2 (Asia and Australasia). North and South American countries (Region 3), unlike the majority of delegates from Regions 1 and 2, heeded U.S. advice to postpone detailed planning until the technology had been perfected. They assigned no channels but did set aside positions for satellites in Region 3.

As a practical matter, it would be difficult once the technology had been perfected for the U.S. or any other country to broadcast in the reserved channel positions for Regions 1 and 2 without prior consultation or permission of the target countries. There has been no change, however, in the U.S. stand favoring the free flow of information and opposing prior censorship by host governments of material broadcast directly by satellite. In fact, this position was reaffirmed by the U.S. Government during the March-April 1977 meeting of the Legal Sub-committee of the United Nations Committee on the Peaceful Uses of Outer Space. Yet the 1977 WARC decisions by the countries of ITU Regions 1 and 2 have raised once more the persistent question as to whether or not the traditional U.S. position is still a realistic one.

C. The United States and the New Communications Technology

The time may be near when distance will have become largely irrelevant in communications terms and the technical questions now associated with these new communications developments will be resolved. We cannot yet predict with any accuracy the specific nature of the

changes to come or exactly when they will occur. It does, however, seem safe to assume that by the end of this century -- within 25 years -- man will have developed the capability to communicate verbally and visually at minimal cost and with maximum efficiency with all parts of the globe. How the United States, both through governmental and non-governmental programs, should plan to use this new technology and the power which it will confer deserves the most serious and detailed consideration.

For the purposes of this study, we can only speculate as to how the new technology will change the conditions of international communications and expand the capability of the United States as a nation and as a government to communicate its views and ideas to the rest of the world. We should not necessarily assume that official programs are the answer. As one experienced practioner of "public diplomacy" has reminded us, "Marshall MacLuhan's global village does not derive from the worlds of the British Council, USIA or the Alliance Francaise."[1/]

In fact, the new technology may result in an even greater imbalance between official and private communications than presently exists. If current patterns persist, U.S. private media will continue to dominate the international flow of information. Yet as private activity proliferates, other countries may follow the example of Canada in its efforts to diminish the influence of U.S media. Moreover, the expansion of U.S.-

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1/ Alan Carter, "The State of Art: Communication and Foreign Affairs", Foreign Service Journal, v. 47, September, 1970: 31.

owned multinational corporations, including some media conglomerates, may intensify foreign resistance to the spread of U.S. culture as epitomized by the products of its industries.[1/] Eventually, this phenomenon may pose diplomatic, as well as economic problems, should growing numbers of foreign governments decide that further "Coca-colonization" with all its ramifications can no longer be tolerated.

Some thought was recently given to the possibility of setting aside a worldwide satellite circuit which would be made available to the broadcasters of the world as a U.S. gift in observance of the American Bicentennial. This circuit would have been open round-the-clock for a period of three years as a vehicle for international communication and mutual exchange of television programming for any country which wished access. It has been speculated that existing regional broadcasting unions, such as the European Broadcasting Union, the Asian Broadcasting Union, and similar groups elsewhere could manage the facility. Although the U.S. and Canada do not belong to such a union, it was speculated that they could participate on an ad hoc basis, as they already do in their relations with other regional groupings. This imaginative proposal was not put into effect.

A system similar in concept already exists in Europe, where the European Broadcasting Union makes an open satellite circuit available to member stations of its Eurovision network in order to use each other's

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1/ Asok Mitra, "Information Imbalance in Asia--I", Indian and Foreign Review, v. 12, July 1, 1975: 13-15.

programs. The Soviet-dominated Intervision also has access to this service and, in fact, uses far more of the Eurovision offerings than it provides in return. Most of the programs consist of essentially apolitical sporting events and cultural programs which usually have an international focus. Some recent examples of Eurovision programs made available over this network arrangement include a number of international soccer matches, the world figure skating championships from Colorado Springs (offered by the BBC), the Grand National horse race from the United Kingdom, and a Eurovision song contest from Stockholm.[1/] These programs can be either broadcast live with local or foreign commentary, or taped for later broadcast.

While the idea of relatively free international exchange of television programming is an attractive one, and could be managed with existing technolgy and controls, it faces serious obstacles. There are problems of copyright and land transmission costs which would require a full feasibility study. In countries in which ground stations are physically close to the central television directorate, the material derived from the system could inexpensively be taped and transmitted along conventional land lines and relays. But countries which have located their ground stations at some distance from major communications loci would have to absorb the sometimes considerable expense involved in sending the foreign material to a point where it could enter the indigenous telecommunications system. Moreover, the cost of making

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1/ Weekly Circular Letter No. 88. 401, of the European Broadcasting Union, Geneva, March 7, 1975. (Mimeo)

an INTELSAT (International Telecommunications Satellite Organization) circuit available free of charge to foreign users is also considerable, and a source of funding to support such an undertaking would have to be found.

This proposal is just one example of the way in which international telecommunications media could be used to increase international exchange of ideas and the exposure of the peoples of the world to each others' cultural and artistic expression. Such a system is technologically feasible today. In addition, the question of prior consent would not arise because the host government would have total control over the material and its subsequent transmittal over the local television network. Yet as noted above, the cost would be considerable. In addition, there is a question as to how much ultimate benefit would accrue to those who might supply the funds.

D. A U.S. International Communications Policy?

Whatever changes the media experience in the years ahead, there would appear to be a clear need for long-range consideration of an international communications role for the United States which takes into account the predictable development of the new communications technology. Somewhere in the upper reaches of the U.S. Government, be it the National Security Council, the Office of Telecommunications Policy, or perhaps an as-yet-unestablished Futures Planning Office at the Department of State, an attempt might be made to anticipate some of the problems which these technological changes may bring. Since change does not often come from within, consideration might also be given to creating

an Advisory Commission on International Communication, with representation from the executive branch, Congress, the media, corporate and academic worlds, which might anticipate future developments, rather than simply react to crises as they arise. Undoubtedly, other means might also be found to consider solution to this potential problem.

In December, 1968, during the last days of the Johnson administration, a Presidential Task Force on Communications Policy led by Under Secretary of State for Political Affairs Eugene V. Rostow presented its final report to the outgoing chief executive.[1/] Among other things, the report recommended the creation of a new policy entity in the executive branch capable of dealing with the many problems which would arise in connection with the telecommunications role of the United States in the years ahead. It was anticipated that such a body would provide a long-range planning, policy-formulating, and mission-support capability which could better integrate the various telecommunication roles currently played by the executive branch.[2/]

It would appear, however, that these and other related recommendations contained in the Task Force Report have not generated the actions considered essential by the many experts and specialists who contributed to that effort. On the basis of a number of interviews with officials of various government agencies concerned with international telecommunica-

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1/ U.S. President's Task Force on Communications Policy. Final Report. Washington, U.S. Govt. Print. Off., 1968. 1 vol. (various pagings)

2/ Ibid., Chapter IX (The Roles of the Federal Government in Telecommunications), pp. 27-29.

tions in general and satellite broadcasting in particular, it seems that the kind of coordination and policy planning which now exist still fall short of the Rostow Task Force recommendations.

Direct satellite broadcasting is an area of telecommunications which has already attracted considerable attention because of its vast potential as an efficient and relatively inexpensive means of transmitting information. As noted above, the problems related to this medium which are under active discussion in the United Nation and other international bodies appear to be extremely complex and difficult. Despite the current deadlock on the principle of prior consent, however, there are some experts who feel that a convention on this kind of broadcasting might be achieved within less than five years. Moreover, also as noted above, technological experimentation on direct satellite broadcasting continues, especially in Japan. If the current lack of private commercial interest in the United States in the technology persists, Congress might consider whether or not to follow the recent advice of the National Academy of Sciences and authorize NASA to resume its own development program in this potentially important medium.[1/]

At the present time, attention to the international communications implications of direct satellite broadcasting appears to be limited to consideration of the immediate political/legal question of an international convention regulating such activity. The agencies most

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1/ Covault, Craig, "NASA Urged to Study Satcom Program, "Aviation Week & Space Technology, v. 106, March 14, 1977: 41-42.

directly involved are the Department of State, the Office of Telecommunications Policy (OTP) in the Executive Office of the President, NASA, the Agency for International Development, the Department of Health, Education, and Welfare (HEW), and the Federal Communications Commission (FCC).[1/]

The political/legal aspect -- especially the prior consent question -- is being handled most directly by the United Nations Affairs section of the State Department Legal Advisor's Office. Between 1972 and autumn of 1976, policy formulation took place in the wider context of an interagency working group on direct broadcast satellites. The working group (which did not have any formal charter) met irregularly several times a year under the chairmanship of a member of the State Department Policy Planning Staff. Its function was to prepare for United Nations working group meetings on the subject and then review the implications of the U.N. decisions. Its membership consisted of representatives of several State Department bureaus plus the NSC, NASA, HEW, OTP, USIA, AID, and occasionally, DOD and the FCC -- all the U.S. Government agencies with an interest in satellite broadcasting.

The interagency working group concluded its operations in the autumn of 1976 after systematically reviewing alternative approaches to the existing U.S. position on the principle of the free flow of information and U.S. opposition to arguments in favor of prior consent. Having examined

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1/ This section is based on CRS interviews with relevant officials of the agencies cited.

various options, the working group came to the conclusion mentioned earlier that the United States should continue to support its traditional position. These conclusions were presented to the new Carter administration. The Adminstration's concurrence in these views was reflected in the statements of the U.S. delegation at the April 1977 meeting of the Legal Subcommittee of the U.N. Committee on the Peaceful Uses of Outer Space.

The State Department's Bureau of Educational and Cultural Affairs (CU) originally took an active role in bringing together government and private representatives to encourage broad discussion of the problems and potential of this revolutionary new communications medium. CU and the State Department's Bureau of Intelligence and Research sponsored a conference at Airlie House in February, 1973 on "International Communications: The Free Exchange of Information and Ideas and the Integrity of National Cultures." The conference helped to crystallize thought within the Government on a range of issues which transcended the political/legal concerns of the moment, and to consider them in a wider cultural context.

The office of Telecommunications Policy in the Executive Office of the President has concentrated its activity on direct broadcast satellites in the legal and technical problem areas. Like the FCC, it also treats direct broadcast satellites as a domestic issue, since the development of such a system might have far-reaching impact on the present structure of communications within the United States. Although

members of the FCC are following these developments, they will probably not become intimately involved in policy plannning until direct satelli broadcasting is actually operational within the United States. Nevertheless, FCC Commissioner Robert E. Lee did head the U.S. delegation to the 1977 WARC meeting in Geneva.

Both AID and HEW are interested in experimentation and development of direct satellite broadcasting for educational, training and social service purposes. Those two agencies are and have been actively involved in the planning and implementation of the ATS-6 experiment, in conjunction with NASA, the agency which had the responsibility for building and orbiting the satellites in this series. AID, however, is not as interested in the satellite per se as in the ways in which they can be used in conjunction with other more conventional communications technology to assist in economic development. Similarly, HEW sees direct broadcast satellites as a means of providing additional educational and health services to segments of the U.S. population currently suffering varying degrees of deprivation because of their physical distance from major urban areas.

Although progress is being made in terms of specific programs and areas of experimentation, there does not appear to be a locus of policy-making within the Government which has been able to transcend the several short-term problems associated with direct broadcast satellites.

This does not mean, however, that efforts might not be made to return to some of the concerns expressed, for example, in the Rostow Report of 1968. The U.S. lead in the development of telecommunications

technology, and the role that U.S. communications systems and products play in the international transfer of information constitute foreign policy resources of great significance. Recognition of this advantage might be the starting point for the consideration of a comprehensive, or an incremental U.S. Government policy on international mass communications.

The United States has long taken for granted the ease with which it has been able to communicate with the non-communist world. The day may not be far off, however, when foreign charges against the United States of cultural imperialism will be accompanied by a ground swell of cultural protectionism even in societies now open to us. The first signs of such a development are already evident in such widely differing examples as Canada and many Third World states, especially as we move closer to the next World Administrative Radio Conference (WARC) in 1979, at which all existing radio (and television) frequencies will be reviewed and -- in part -- reallocated.

The problem may or may not become critical during the next five to ten years, but technological, economic and political prudence would suggest that the time to consider a policy and a strategy to maximize freedom of access and deal coherently with the ways in which the United States -- as a government and as a people -- communicates with the world during the coming generation may be now.

ALTERNATIVES TO INTELSAT — Competition in Global Satellite Telecommunications

INTRODUCTION

Scenarios

Presented here is a scenario, designed to illustrate some of the issues, attitudes, areas of possible conflict and similar characteristics of events that might arise in the development of international telecommunications during the next 15 years.

Scenarios come in different forms and with different intents. The one given here is devoted to stimulating awareness of the complexity and extent of interactions that can develop as new technology is applied in certain aspects of international telecommunications. To achieve this purpose, we have been prepared to sacrifice matters such as technical detail for the sake of issue illustration. In particular:

- The scenario is <u>in no sense</u> a forecast--or a description of a desired pattern of events or an effort to "prove" or support a specific viewpoint. The intent is to illustrate issue areas; and for this purpose we have felt free to employ relatively extreme and even unlikely positions at times in the script.

- While there is an underlying technological forecast, which represents our best estimate of likely technical developments in the future, this forecast is not allowed to intrude in obvious fashion into the scenario. To do so would simply distract attention from the primary focus.

- A narrative style is employed deliberately, in order to avoid the dullness too often characteristic of technical literature. With this style, some of the structure found in most technical documents will be missing--there is no specific statement of the assumptions employed, for example, and the motivations of participants are not explicitly analyzed or hypothesized in detail, etc. Instead, the writing seeks to recreate some of the sense of confusion about events, intents and motivations that are so characteristic of real life.

- Although the story told is <u>not</u> intended to present a view of the most likely pattern of future events, an effort has been made to maintain step-by-step pluasibility. This was done through assuring that each incident reported has a basis in existing announcements or documents (such as the INTELSAT and INTERSPUTNIK agreements), in expert opinion on the type of event described, or through direct analogy to specific historical events that have occurred in the past in telecommunications or very similar industries.

To help readers prepare for the scenario, some brief background material is provided next. Thereafter, the scenario is presented. Finally, a commentary is provided for discussion of some of the key elements of the scenario, the rationales behind specific attitudes and events, and similar matters.

Background

Other things being equal, a single, integrated global telecommunication satellite system will be more economical and will provide better and more reliable service than two or more systems. Also, cooperation and mutual dependence among the users of a single system can encourage international friendship, while competition between two systems might become a divisive influence between the two groups of users. This is recognized in the preamble of the INTELSAT agreement of 1971, which says (paragraphs 1, 4, 5, and 6):

> "Considering the principle set forth in Resolution 1721 (XVI) of the General Assembly of the United Nations that communication by means of satellites should be available to the nations of the world as soon as practicable on a global and non-discriminatory basis, . . .'
>
> "Desiring to continue the development of this telecommunications satellite system with the aim of achieving a single global commercial telecommunications satellite system as part of an improved global telecommunications network which will provide expanded telecommunications services to all areas of the world and which will contribute to world peace and understanding,
>
> "Determined, to this end, to provide, for the benefit of all mankind, through the most advanced technology available, the most efficient and economic facilities possible consistent with the best and most equitable use of the radio frequency spectrum and of orbital space,
>
> "Believing that satellite telecommunications should be organized in such a way as to permit all peoples to have access to the global satellite system and those States members of the International Telecommunication Union so wishing to invest in the system with consequent participation in the design, development, construction, including the provision of equipment, establishment, operation, maintenance and ownership of the system. . ."

On the other hand, some nations believe that the disadvantages of membership in such a system outweigh the advantages. Debates leading up to the INTELSAT agreement show that some smaller nations, especially among the emerging nations of the third world, fear dominance by the United States or a small group of rich, industrialized nations. The USSR evidently has additional strong reasons, for it has not joined INTELSAT, and has filed notifications with the International Frequency Registration Board (IFRB) of the International Telecommunications Union (ITU) that practically describe a second global telecommunications satellite system.

Most observers believe that the USSR has no real intention of erecting such a system. According to prevailing opinion, the Soviets do not put communications satellite technology high on their list of national priorities and recognize that a second system would be uneconomical. Some claim that their probable reason for hinting at such plans is to improve their nation's status and position preparatory to applying for INTELSAT membership. But as there are practically no restrictions on INTELSAT membership, there would appear to be little reason to try to bargain from a strong position.

The purpose of this scenario is to examine the implications of Soviet plans to erect a second global international telecommunication satellite, whether such plans are likely or not. How will they implement such a plan? How will it affect world order? How will if affect INTELSAT? What policy issues will arise from coexistence and competition between two systems? Who will be more seriously affected?

The question of how the USSR will implement such a plan could be answered in several ways. One body of opinion says that unless the USSR puts a great deal more effort into satellite communications than is presently apparent, it will never erect a second global system. Another body of opinion believes that the USSR has shown, by putting a number of military and communication satellites in orbit and by joining MOLNIYA satellites into an operating network,* that it has mastered all the requisite technology and needs only decide to proceed. In the scenario which follows, we have assumed a compromise that turns out to be costly for the USSR. In effect, we assumed that the USSR has the basic technology, but initially underestimates the effort needed to refine and perfect it. As a result of our assumptions, the USSR achieves the desired result only at the expense of a high rate of failure in or immediately following launch.

How will a second global telecommunication satellite system affect world order? In the normal course of events, more communications, faster transportation, and more international trade will increase international interdependence and strengthen bonds of amity. In this scenario, the existence of two communication satellite systems slows down this process in many small ways. Rivalry between two groups of sponsors may even be said to drive them apart at certain times. But this particular aspect of relations between nations is not significant enough to alter the course of events drastically.

In this scenario, the effect of a second system on INTELSAT is modest until a merger is effected. Up to that point, the principal effects are to delay the availability of truly global communication satellite service to some nations, and to make sure that all INTELSAT services are competitively priced, individually as well as collectively. Other effects are also noted in the commentary.

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*The world's first domestic telecommunications satellite system was constructed by the USSR. It uses a series of satellites dubbed MOLNIYA in elliptical, rather than geostationary, orbits. The system is intended to provide service over the vast regions of Siberia and Soviet Asia, where terrestrial telecommunication networks are poorly developed. The system has been extended to the Mongolian People's Republic and to Cuba.

An important policy problem is whether the declarations in the preamble of the INTELSAT Agreement quoted above prevent a member from belonging to a rival system, given that the rival system has been brought into being and provides services to countries not served by INTELSAT. This leads to another problem later: to what extent will the same declarations motivate INTELSAT members to support a merger which – at least with regard to near-term economics – is somewhat disadvantageous?

The most seriously affected, in this scenario, are the members of the new system. The USSR is put to great trouble and expense to uphold its position as an important world power in satellite telecommunications and to maintain influence over less powerful fellow-members of the other system. These members get international global telecommunications satellite service somewhat later, and pay more for somewhat poorer service, than if they had all joined INTELSAT in the first place.

The tone of this scenario has elements rather hostile to the USSR. It starts with the fact that the USSR has rejected the opportunity to join INTELSAT, an opportunity which has already been found acceptable to nearly 100 nations, many of whom have cultures and ideologies far from ours. This action, and the steps recently taken with regard to starting a second system, are attributed to attitudes generally regarded in our society as less than admirable. However, the purpose is not to insult or offend the USSR, but to hypothesize a series of situations consistent with past events in which crises and confrontations follow in quick succession. The author of this scenario will be as relieved as anyone if future events disprove his assumptions.

Argument

The USSR has never proclaimed plans for a global satellite communication system. However, in 1971 the USSR and eight other nations signed the "INTERSPUTNIK" agreement which establishes a second international space communication organization. They also filed a notification with the IFRB of plans to put seven telecommunications satellites in stationary orbits illuminating most of the area covered by INTELSAT, thereby suggesting an undisclosed intention to construct a global system paralleling INTELSAT. So much is past history.

This scenario proceeds to assume that the INTELSAT member countries underestimate the determination of the USSR to proceed with this system, and that the latter is well established and operating on a global scale before effective negotiations to bring the USSR into INTELSAT can be initiated. Although the second network is very costly to maintain, a number of countries join and use it, with various consequences on geopolitics and world trade.

In the late 1980's, after Poland, Cuba, the People's Republic of China, and others have joined INTELSAT, the Soviets reveal that they have provided a technical basis for a merger of the two systems. The West starts negotiating with renewed vigor for an integrated

system. The terms on which the USSR wishes to join INTELSAT include several that are contrary to the provisions of the INTELSAT Agreement, and a long period of negotiations ensues. As a step toward unification, INTERSPUTNIK and INTELSAT agree to fill temporary needs caused by growth or failure by leasing transponders to each other, while continuing to operate otherwise as independent systems. Eventually the INTERSPUTNIK signatories mollify their conditions to the point where, after some modification of the INTELSAT Agreement, the goal of a single global telecommunication satellite system, accessible to all nations, can be reached.

Primary Driving Forces

(1) The dominance of global telecommunications and computer technology by the United States arouses apprehension and jealousy as well as admiration in the rest of the world, and feeds their nationalistic feelings.

(2) The USSR continues its program, foretold in 1971-1975, of establishing a global communication satellite system. By a brute-force approach and a prodigal investment in orbiting spares, it achieves a level of performance and reliability sufficient to meet the commercial communications needs of many nations.

(3) Although the competitive network is on the whole uneconomical, the pricing policies of INTELSAT (resulting in part from the national interests of European postal/telegraph/telephone administrations) cause certain INTELSAT services to be priced far above even fully-distributed costs.* This gives an economic entry wedge to INTERSPUTNIK.

(4) The United States and most other INTELSAT signatories underestimate the USSR's sensitivity about the technical inferiority and unreliability of INTERSPUTNIK equipment and its reluctance to let its communication traffic pass through stations run by Western nations. Consequently, they overestimate the willingness of the USSR to join INTELSAT and of the INTERSPUTNIK signatories to bargain for a merger.

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*When several services (or products) are provided by one firm and some of the firm's resources (plant, labor, and materials) are used in providing more than one service, the estimated cost of providing a single service is not unique; it depends on how much of the cost of each resource is charged to each of the services it is used to provide. If the cost of each shared resource is divided among all services in proportion to the part of that resource used in providing each service, the cost is called *fully distributed.*

End Point

Thirteen years from now, after several years in which INTELSAT and INTERSPUTNIK exchange some use of orbiting resources, a merger of the two systems is effected. The terms of membership and participation are close to those of the pre-merger INTELSAT, except that contribution of the orbiting elements of INTERSPUTNIK to the merged system is accepted as the initial investment of the former INTERSPUTNIK members.

SCENARIO

Historical Beginnings

The COMSAT Annual Report of July 1975 noted that INTELSAT has three Atlantic, one Pacific, and one Indian Ocean satellite in service. It also has four orbiting spares. About 13,000 half-circuits are in use, interconnecting 147 antennas, 121 earth stations, and 72 countries.

The USSR has launched MOLNIYA's II and III. Together with existing facilities, this provides a satellite network for USSR domestic traffic and traffic to contiguous (Eurasian) countries in the USSR sphere of influence and to Cuba.

In June 1975, the USSR gave a first notification to the IFRB of intentions to launch a TV broadcasting satellite (STATSIONAR T) in a stationary orbit over the Indian Ocean. (It had demonstrated its ability to position satellites in synchronous orbits with MOLNIYA IS and COSMOS 637, both launched in 1974.) This satellite will be incapable of application for telephony. Later in the year, further notifications for STATSIONARs II and III were published; these will provide telecommunication service and are to be positioned over the Western and Eastern limits of the Indian Ocean, respectively. Added to INTELSAT IV and Indonesia's projected domestic-service satellite, a frequency congestion problem over the Indian Ocean is in the making.

A STATSIONAR satellite was launched in December 1975 but apparently never went into service.

The USSR filed notification of plans for seven more synchronous-orbit satellites. The locations and antenna patterns would provide global coverage but are clustered around the USSR: a line of sight from Moscow would reach eight of the ten projected satellite positions.

Western telecommunications experts believe that the USSR is pushing the STATSIONAR and the resulting INTERSPUTNIK global communications system to gain leverage for barganing with INTELSAT for favorable terms of membership. But the West does not have a very high estimate of the bargaining leverage of the USSR for several reasons:

- Global satellite communications is a natural monopoly. There is no way that two systems in parallel can operate as effectively and as economically as a single system with comparable total resources.

- Western communications technology and computer technology are considerably ahead of those of the USSR, so the West believes INTELSAT is technically better than anything that the USSR can provide.

- Western countries, particularly the United States and the United Kingdom, will continue to be the biggest users of the global network, simply because the Iron Curtain countries do not have that much communications traffic with non-contiguous parts of the world.

In spite of this, the USSR has made no serious attempt to join INTELSAT. However, among INTERSPUTNIK signatories, Poland and Hungary have shown some signs of interest in joining INTELSAT.

1976

Near the middle of the year, the USSR successfully launches and puts into service a STATSIONAR satellite, designated STATSIONAR II, in a stationary orbit over the eastern shore of Africa. This satellite is designed for voice and message telecommunication traffic and also for audio and video broadcast relay. It provides service to Europe and the western part of the USSR.

In November, a STATSIONAR T, a television rebroadcasting satellite, is launched but fails to go into orbit. (In the accepted model numbering system, T replaces I.)

1977

In January, the USSR successfully launches a TV satellite, STATSIONAR T, which will rebroadcast television from Moscow from a stationary orbit over the Indian Ocean to a network of community distribution terminals throughout the USSR and Siberia.

A pro-communist government has just been elected in Italy, and Italy leases service from the INTERSPUTNIK group.* Italy is not an INTERSPUTNIK signatory but initially receives service, just as the USSR and the People's Republic of China were receiving service from INTELSAT in 1975. Italy declares her intention to join INTERSPUTNIK as a signatory. Under Article XIV of the INTELSAT Intergovernmental Agreement, Italy consults the Assembly of Parties through the Board of Governors. The intention of the Intergovernmental Agreement is clear: Article XIV is concerned with radio interference and also with

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*USSR, Bulgaria, Cuba, Czechoslovakia, the German Democratic Republic, Hungary, Mongolia, Poland, and Romania.

economic harm to INTELSAT; it will accommodate signatories' use of *specialized* telecommunications services outside of INTELSAT, with the implication that *general* services shall be supplied by INTELSAT. However, there are no effective sanctions to invoke against straying signatories. Furthermore, by agreeing to simple changes and constraints on orbital positions, antenna patterns, frequency assignments, and radiated power levels, the USSR eliminates the possibility of interference with INTELSAT, because the INTERSPUTNIK traffic to and from Italy will be on routes not effectively served by INTELSAT, and Italy proposes to keep up its INTELSAT membership.

The non-communist INTELSAT signatories initially unite in opposition. The United States and the UK analyze the language of the preamble to the INTELSAT Agreement, explaining that it expresses a moral commitment by the signatories to unite in a single global system, and one only. COMSAT Corporation releases a technical study showing that the two proposed systems must inevitably cost more than a single (INTELSAT) system providing equivalent services. The Communications Workers of America takes a strong position against the Italian move. The IEEE *Spectrum* – the news, editorial, and non-specialist technical monthly of the world's largest professional society of electronics engineers – devotes most of an issue to airing both sides of the controversy, but its editorial position is against Italy.

However, Sweden, speaking on behalf of the Scandinavian INTELSAT group, advances a more liberal position. She points out that only a very small part of the additional cost estimated in the COMSAT study falls on INTELSAT, while most of it is borne by INTERSPUTNIK and its members and subscribers. Gradually, the United States and other INTELSAT members realize that attempts to thwart Italy will certainly be countered by numerous and successful attempts by the USSR and INTERSPUTNIK to prevent nations in the USSR sphere from joining INTELSAT. The long-range implications of such interdiction are far worse than the short-term losses from Italy's and a few others' joining INTERSPUTNIK.

INTERSPUTNIK gains momentum. Albania becomes a member. Ethiopia and North Korea become subscribers, and several others in the communist sphere appear to be about to do the same. They are tempted largely by the USSR's covert offers to give them (or underwrite most of the cost of) the earth station and, in some instances, a ground network to feed it.

It would be very simple to make an INTERSPUTNIK earth station INTELSAT-compatible, but the stations that the USSR gives to INTERSPUTNIK clients outside the Iron Curtain are about as incompatible as modern engineering can make them.

1978

In March, the USSR successfully launches STATSIONAR III over the Indian Ocean. Its technical characteristics are similar to those of STATSIONAR II, but it is located about 3,000 miles farther east.

A May launch places STATSIONAR V, similar to II and III, over the Indian Ocean in an orbit not far from the orbiting spare INTELSAT IV.

In October, STATSIONAR IV is put into orbit over the Atlantic. It can reach all of Africa and South America, as well as most of Europe, the western part of the USSR, and the East Coast of the United States and Canada.

INTELSAT is still debating Italy's proposed membership in INTERSPUTNIK. It dawns upon a number of members that excessive censure of Italy may make it difficult to recruit Poland, Hungary, and other INTERSPUTNIK members into INTELSAT. They finally content themselves with reiterating the principle of a single global telecommunication satellite system, available to all, with no specific censure of Italy.

Italy joins INTERSPUTNIK, and Yugoslavia shortly follows suit. Poland, however, immediately accelerates her efforts to join INTELSAT.

1979

At the beginning of the year, STATSIONAR II fails. No apparent attempt is made to replace it; however, STATSIONAR VI, a new USSR design, is successfully positioned over the Indian Ocean. It has directional antennas, one aimed at the most densely populated part of the USSR west of the Urals, and the other covering most of Siberia.

Soon after, STATSIONAR T fails. Five months later, a replacement is successfully launched. It is observed that this satellite radiates a lot of heat; clearly, it contains a nuclear power source. It radiates more power than any previously orbited satellite, which is reasonable in view of its purpose of providing TV coverage over large, sparsely populated areas. Conservationists in the United States deplore the radioactive pollution of space. Although this is not the first orbiting nuclear device, the conservationists make it clear that they will resist efforts by INTELSAT or anyone else to orbit another.

Transmissions from STATSIONAR VI remain at undiminished power levels during an eclipse; this is viewed as confirming that it contains a primary power source.

INTERSPUTNIK's charges for channels for telephone service are in general slightly higher than INTELSAT's. However, its rates for channels required to interconnect digital computers with each other and with remote terminals are significantly lower, as are its charges for specialized packet-switching message service (individually addressed, one-way alphanumeric messages, such as are needed for network distribution of telegrams, electronic fund transfer orders, electronic "mail," etc.).

A number of small and responsive political entities like Hong Kong, the Benelux group, and the Bahamas lease INTERSPUTNIK service as a preliminary step to membership and provide a way for users to take advantage of these services. Three factors block the rapid

expansion of this market penetration. First, a user must connect to one of the interconnecting points, and this involves appreciable costs. Second, the USSR computers lack the reliability and versatility of the U.S. machines they are competing with. Third, a flurry of repricing by INTELSAT rationalizes the situation. As a matter of policy, INTELSAT will not price below marginal cost and attempts to avoid pricing below fully distributed cost. INTERSPUTNIK has no such general policy. However, INTELSAT's costs are, in any real terms, much lower than INTERSPUTNIK's, mostly because its satellites have more channels, longer life, and higher reliability. Most users realize that the services they can interconnect to via INTELSAT are better. They also realize that the USSR is unlikely to underwrite services forever at prices much below those that INTELSAT and its users can offer while making a reasonable profit; and those prices are well below INTERSPUTNIK's cost. Before long, nearly all the former INTELSAT clients decide to return to or stay with INTELSAT, but a few keep a redundant skeleton backup with INTERSPUTNIK.

Poland joins INTELSAT.

1980

INTERSPUTNIK has a bad year in 1980. An attempt to place a STATSIONAR in orbit over the Pacific succeeds, but equipment failure prevents it from ever going into telecommunication service. Evidently no further ground spare is available, for the next STATSIONAR launch is aimed at an Indian Ocean orbit. This also fails. Within a period of five months, STATSIONARs III, IV, and V (over the Indian, Atlantic, and Indian Ocean respectively) all fail. At the end of the year, the USSR has in service only a single telecommunication satellite (STATSIONAR VI) over the Indian Ocean and its television satellite, STATSIONAR T. INTERSPUTNIK's prospects look bleak.

The two global systems are not, of course, the only providers of international or transoceanic service. A number of domestic, special-purpose, and experimental satellites are devoted to telecommunications or have some telecommunications capability. Leaving aside the United States and Canada entirely, we still have: the Franco-German Symphonie project; a West German direct-broadcast geostationary TV satellite; the CEPT/EBU European satellite; a Brazilian domestic system; an experimental Japanese domestic system; an experimental Australian domestic system; a Malaysian regional system; a Chinese domestic system; and experimental prototypes for a near-eastern Arab states system. Collectively, these carry more traffic than the global systems.

1981

In February, the first soviet telecommunication satellite over the Pacific, designated STATSIONAR VII, is successfully launched. It has considerably more channel capacity than previous STATSIONARs but still lags about a decade behind INTELSAT. In March, a similar satellite is successfully placed in orbit over the Atlantic to replace STATSIONAR IV. Another launch places a similar satellite in an orbit over the Indian Ocean, presumably to replace STATSIONAR III.

The USSR jams three INTELSAT satellites for several hours. The USSR claims it was the accidental consequence of a full-scale test of a semi-automated, military, homing electronics countermeasures system; it apologizes but will accept no liability. Control of one INTELSAT satellite goes haywire. Most of the satellite's fuel is exhausted before it can be restabilized in orbit, and its useful service life is thereby nearly ended. Although the INTELSAT control code is not difficult to interpret and, in fact, is nearly public knowledge, it is designed for maximum protection against accidental activation. The Soviets' explanation therefore does not convince the West. The CCIR (Consultative Committee for International Radio) is outraged, but helpless. The INTELSAT client countries become aware of how vulnerable their communications are to deliberate interruption.

Most of the European countries believe that the United States is capable of taking control of any INTERSPUTNIK STATSIONAR, but both the Secretary of State and the Secretary of Defense denv any such intention.

For reasons that are not clear, a second STATSIONAR is launched in November over the Pacific. This provides trans-Pacific coverage. After some initial testing, the satellite is turned off, evidently to serve as an orbiting alternate for STATSIONAR VII.

The USSR installs equipment which permits most U.S. telephone subscribers to dial directly to most exchanges in Moscow and a few other major Russian cities. Operator dialing from the United States to the USSR had been available from early 1977, and before that from the UK and other European countries.

A young physicist loses his job at the Moscow Institute and is subjected to other harassment following several telephone calls from representatives of the Federation of American Scientists (FAS). The U.S. Department of State, citing this and other incidents, warns U.S. citizens that most and probably all overseas calls to the USSR are recorded, and that telephone communication to Soviet citizens with other than bland and objective content can cause them much unnecessary grief. An interview with Dr. Jeremy Stone quotes remarks critical of the State Department's lack of aggressive action.

The amount of overseas telephony to the USSR is small. The number of voice channels from the United States to the USSR is only 2% of the number to the UK, 10% of the number to Japan, and less than half of the number to either the People's Republic of China or Cuba. The only time of day when one has any chance of putting through a direct dial call to Moscow without repeated trunk busy signals is between 3 and 5 a.m. EST (mid-morning Moscow time). Although more overseas circuits could easily be made available from either INTERSPUTNIK or INTELSAT, the Soviets do not provide interconnections at their end.

1982

In the first half of the year, one of the Indian Ocean STATSIONAR satellites (VI) fails, but a replacement for STATSIONAR V is successfully launched. In the second half of

the year, two additional launches are attempted, but both fail. Later analyses suggest that they were attempts to place a second satellite over the Atlantic and to replace STATSIONAR VI.

Cuba's relations with the United States are much improved, and Cuba joins INTELSAT. Several other small INTERSPUTNIK subscribers, including Hungary, do likewise. Syria and Angola desert INTERSPUTNIK in favor of INTELSAT.

Most nations of Western Europe, and the nations of the new world that share the same culture, have a tradition of high respect for the integrity of communications and will tend to protect them even during hostilities or the cessation of diplomatic relations. There are many expressions of this attitude, from the special privileges accorded to heralds half a millenium ago to the maintenance of telephone cables between the United States and Cuba today, and the gravity with which we regard domestic wiretaps and mail interception. Many attitudes in the USSR, on the other hand, seem to derive from a different cultural tradition, where communication is not regarded as an important human right but as a privilege which is limited or set aside for reasons that we consider less important.

Thus, although the Soviets correctly assess the economic disruption caused by their jamming of INTELSAT in 1981 as not very important, they grossly underestimate the emotional reaction. Their mild apologies seem arrogant. Public opinion in the West, much of the uncommitted world, and some Communist nations such as Yugoslavia and Cuba hardens against the USSR. In the face of continuing pressure, the USSR begins to realize the extent of the unfavorable impact of its tactics and initiates some conciliatory feelers in the ITU, other forums of the UN, and several embassies. Most Westerners still feel that, although the USSR recognizes the amount of ill feeling it has generated, it still does not understand why.

1983

INTELSAT launches a satellite that combines the technology of multiple high-gain narrow-beam antennas, digital demand-assignment and time-division multiple access, and a simple and rugged orbiting switch. It operates in the 12- and 14-GHz range.

In primitive communication satellites, all ground stations transmit to and receive from the same satellite antennas. The use of directional antennas now permits widely spaced earth stations to transmit to and receive from separate input and output channels in the satellite. The signals entering one antenna can be radiated (after amplification and shifting to a non-interfering frequency) from several antennas; the latter can steer 24 beams to designated spots on the earth, 19 of which have a footprint of less than 100,000 square miles.

However, until switching was available in the satellite, the region on the earth in which a signal could be received was predetermined by the channel over which the signal was transmitted to the satellite. The user could lease more than one channel, but the coverage area of

each was fixed. For example, an African subscriber might lease the equivalent of 4 voice channels to the neighborhood of Japan, 6 to the Indian Ocean, 16 to Europe, and 12 to the Americas, a total of 38 channels.

Now, with a ground-controlled switch in the satellite, the output destinations of the channels can be varied at will. The signal from a single earth transmitter is separated in the satellite and redistributed for retransmission in the 24 directional transmit channels, each of which can carry any designated fraction of the original input signal. Users may now commit themselves only to a total channel utilization without having to specify the destination until they actually make use of the channels; the hypothetical African subscriber might lease only 24 channels, directing 4 to Japan, 6 to the Indian Ocean area, and 14 to Europe in the morning; 16 to Europe, 1 to Japan, 2 to the Indian Ocean, and 5 to the Americas in the middle of the day; and 12 to the Americas, 10 to Europe, and 2 to the Indian Ocean in the evening. This is valuable in coping with daily traffic changes due to large time zone differences; in the early morning, most subscribers want to talk toward the east, while in afternoon and evening they direct their conversations westward.

Early in the year, a STATSIONAR is placed in orbit over the Indian Ocean near the orbit of the failed STATSIONAR VI.

Two more launches follow; the first is a failure, but the second succeeds in placing over the Atlantic an advanced-designed INTERSPUTNIK satellite with nuclear rather than solar power. After initial testing, it also is turned off, evidently to serve as an orbiting spare to the existing Atlantic satellite.

The INTERSPUTNIK TV broadcasting satellite over the Indian Ocean fails. A replacement is launched within a few weeks, but it is unable satisfactorily to meet the requirements for television transmission and is never actually put into service.

INTERSPUTNIK's first Pacific satellite, STATSIONAR VII, fails. STATSIONAR X is immediately put into service.

The USSR is adamant on not allowing direct connections between INTERSPUTNIK and INTELSAT. However, ingenious subscribers who use message services in both networks discover how to make interconnections without asking. An Italian firm operating as a computer service actually provides covert but publicly recognized patches from one system to another. INTERSPUTNIK protests, and the protests are reinforced by the USSR. Italy insists that (1) interconnecting a computer in Italy with peripherals, data sources, and interactive terminals via both networks is within the range of use acceptable to both INTELSAT and INTERSPUTNIK, (2) a certain amount of "communication" is a necessary and accepted part of data processing and computation, (3) they offer this service with the understanding that it is to be used primarily for data processing, and (4) it is economically impossible to monitor the traffic to discover which users are exploiting the Italian computer as a stage in a store-and-forward message system.

INTERSPUTNIK and the USSR fail to get a commitment from Italy or INTELSAT to clamp down. Threats to cut off the Italian user's service backfire in two ways:

- INTERSPUTNIK, like INTELSAT, renders service through the intermediary of TELESPAZIO, which was granted a 25-year concession to operate Italian commercial satellite communications in 1965. Although TELESPAZIO is a corporation, it is directly and indirectly controlled by STET, a state-controlled holding company. Italy regards the threat as a diplomatic insult and reacts accordingly.

- The majority of the Italian firm's clients behind the Iron Curtain are doing legitimate computing and data processing, and the threat backfires within the USSR.

The USSR attempts to exert control with pressure on subscribers behind the Iron Curtain. This curbs certain users in the USSR, but countries like Poland, Romania, Hungary, and Yugoslavia invoke so much bureaucratic red tape that the USSR's efforts are made ineffective.

The USSR proposes that, for humanitarian reasons, the UN establish and maintain a global catastrophe warning network. The USSR has already built an experimental skeleton earthquake warning network into INTERSPUTNIK and offers to turn over its control to the UN. The USSR also unveils a plan to add hurricane and tornado warning, based on its own weather and reconnaissance satellites. The UN accepts the suggestion in principle but does not actually assume control of any of these functions.

Several facts emerge from debate in the UN:

- The more advanced nations of the world are already doing all of the suggested functions themselves, cooperatively, using INTELSAT, INTERSPUTNIK, or, in a few instances, both.

- The only real beneficiaries would be a very few of the poorer and less industrialized nations, many of whom have no ground stations and either are not members of a global satellite network or belong through a group.

- Considering the countries which could benefit, INTELSAT would be a better vehicle than INTERSPUTNIK for providing the service.

In the meanwhile, however, the USSR has provided a very cheap catastrophe network terminal (not really suitable for general telecommunications access) to a number of smaller countries. As its price is clearly far below cost, the USSR is, in fact, subsidizing the terminal.

1984

A more advanced USSR design, with communication capabilities equivalent to those of INTELSAT IV, is put into a stationary orbit over the Indian Ocean early in the year. A second is successfully launched about seven months later; after testing, it is assigned as an orbiting spare for the two other broad-coverage Indian Ocean satellites. Another STATSIONAR launch, probably to replace the Pacific satellite, fails. However, a third television broadcast satellite, considerably more powerful than the two previous STATSIONAR T's, is put in orbit over the Indian Ocean.

The smaller nations in the world are alarmed at the enormous size, influence, and power of INTELSAT and INTERSPUTNIK. They make an abortive attempt to break up the global services by defining four different kinds of traffic and stipulating that they shall be managed by different administrations. The four categories are:

- Duplex real-time person-to-person (telephone, videotelephone, etc.);
- Real-time simplex broadcast television and radio, etc.;
- Duplex real-time computer-to-human (interactive computer terminals) and computer-to-computer traffic; and
- Simplex (one-way) record and store-and-forward message, facsimile, electronic mail, etc.

Simultaneous attempts are made through national legislatures, the management of INTELSAT, diplomatic channels, and the UN, but the effort is fruitless. In the end, the great economy of joint use of common switched facilities by diverse services dominates all other considerations. The few exceptions to this expected greater economy all turn out to be due to pricing far out of proportion to costs. These exceptions count for a large part of the "private" network usage. Public revelation of these price anomalies leads to some repricing. One by-product is the stemming of the disproportionate growth of "private" systems.

The UN refuses to operate a catastrophe network which is exclusive either to INTERSPUTNIK or INTELSAT. Despite a general policy decision to forbid interconnection, most INTELSAT members agree to an exception for this one purpose. Only the People's Republic of China, a big INTELSAT user but not yet a member, is firmly opposed. The anticipated struggle within INTELSAT never develops, however, for INTERSPUTNIK refuses joint use.

1985

Another advanced-design STATSIONAR is launched over the Pacific. After an initial period of testing, it is retired as an orbiting reserve. INTERSPUTNIK now has an active

telecommunications satellite and an orbiting spare over both the Atlantic and the Pacific, in addition to four active telecommunications satellites over the Indian Ocean with largely redundant coverage. For the first time, the USSR has adequate orbiting spares to provide reliable global coverage.

The reliability is amply demonstrated in April, when the active satellite over the Atlantic fails and is replaced immediately by the orbiting alternate. The Soviets' technical development strength is further attested in June and August, when in two tries they successfully put another advanced-design STATSIONAR into orbit over the Atlantic. Thus, by the end of 1985, INTERSPUTNIK has one active and one reserve over the Atlantic, one active and one reserve over the Pacific, three active and one reserve over the Indian Ocean, one over the Indian Ocean with highly directional coverage, and one TV rebroadcasting satellite over the Indian Ocean, all operating successfully.

Nevertheless the economic base for INTERSPUTNIK remains weak. The countries served by it, but who have not joined INTELSAT, have never depended much on global telecommunications. Also, INTERSPUTNIK satellites have had less channel capacity and shorter lives than INTELSAT's, and their launch failure rate has been high. Thus, although INTERSPUTNIK has built and launched more satellites than INTELSAT, it has only a fraction of the latter's channel capacity. At this point, the People's Republic of China joins INTELSAT. The economics for INTERSPUTNIK are still further weakened, and the USSR can no longer pretend that it is a viable economic entity.

Yet, from now on, nobody doubts that INTERSPUTNIK is able to maintain global coverage without serious interruptions, with a technology less than ten years behind that of INTELSAT and apparently catching up. Its service is less versatile and less reliable than INTELSAT's, but not so much so that it is no longer viewed as a viable competitor. However, in the decade 1976-1985 inclusive, only 65% of STATSIONAR launches were successful. The mean time to failure of the nine whose service life has ended amounted to only 32 months.

Overall, INTERSPUTNIK has had little effect on INTELSAT. The West has always had a technological lead with higher effective radiated power, use of the 12- to 14-GHz bands, multiple steerable beams, demand assignment and time-division-multiple-access, orbit switching, and a variety of lesser innovations. The only respect in which the Soviets lead technically is that they have used small nuclear electric power generators and have announced plans to orbit a larger one capable of supplying more than 30 kilowatts. Actually, INTELSAT has the technology available to orbit a nuclear supply, but considers the risks to be excessive and finds such power unnecessary because of success in achieving high effective radiated power output using narrow, steerable beams with gains approaching 60 decibels.

As far as traffic is concerned, INTELSAT is far ahead. INTERSPUTNIK does not publish traffic figures, but its total traffic is reliably estimated at between 6% and 7% of

INTELSAT's. (A few years ago, it may have approached 10%; but INTELSAT is growing faster.) Thus, the total INTERSPUTNIK traffic is not even as much as one year's growth of INTELSAT traffic and is therefore not a matter of great commercial importance to INTELSAT.

In terms of services to which the networks provide a gateway, INTELSAT is also far ahead, for two reasons: (1) computer technology in the USSR continues to lag, and (2) the political and economic atmosphere in most of the INTERSPUTNIK countries is not conducive to the offering of international business and financial services or the establishment of international conglomerates.

The competitive and entrepreneurial bias of INTELSAT has given it an advantage over INTERSPUTNIK. Where the two systems are competing, INTELSAT has led with competitive pricing, whereas INTERSPUTNIK has attempted to invoke diplomatic and bureaucratic sanctions. Because of its great technical lead, INTELSAT has always been able to price profitably at below the USSR's cost and to market its service so that national members and subscribers could resell to the ultimate subscribers at a handsome profit.

With potential subscribers over whom the USSR does not exercise complete political and economic dominance, efforts to market INTERSPUTNIK have often been perceived by smaller countries as attempts to *prevent* them from benefiting from cheap and profitable INTELSAT service, rather than offers to serve them better and cheaper. However, the dazzling success of INTELSAT in expanding under profit-oriented, capitalistic management and administration is a continuing affront to nations with a communist ideology.

1986

The USSR, speaking for INTERSPUTNIK, puts out feelers about joining INTELSAT, proposing certain conditions:

(1) INTERSPUTNIK members propose to pay for their membership in kind, by turning over INTERSPUTNIK satellites. It transpires that the INTERSPUTNIK satellites and the terminals behind the Iron Curtain (unlike those outside) are fully INTELSAT-compatible.

(2) The flow of certain kinds of trans-national traffic across the Iron Curtain is to be restricted.

(3) The USSR is to be guaranteed a place in the business of operating the new combined INTELSAT, manufacturing equipment for it, and putting satellites in orbit.

(4) The TV rebroadcasting satellites, basically domestic to the USSR, are not to be included.

(5) The USSR demands a bigger interest in INTELSAT than the People's Republic of China.

Condition 1 is irregular, but negotiable. The stumbling block is not that of receiving payment in kind, but simply the small value of INTERSPUTNIK satellites to INTELSAT. INTELSAT's technology is still far ahead of INTERSPUTNIK's, and it has cost the Soviets much more to achieve their orbiting capability than it would cost INTELSAT to replace it. On the other hand, the INTERSPUTNIK satellites are adequate for carrying most of the traffic among the Iron Curtain countries and those in their sphere of influence.

It is difficult to do anything about Condition 2, for several reasons. First, regardless of the intended destination of any radiation from a communications satellite, nearly all of it can be monitored from other ground stations by anyone who is willing to erect a large enough antenna, coherently cancel other stronger signals, etc. Second, INTELSAT has an open policy of providing services to members and refuses to dictate to them what they shall use the services for. Third, as shown by the attempts to prevent an Italian firm from interconnecting INTELSAT and INTERSPUTNIK in 1983, it is very difficult to determine use from content alone; INTELSAT has no jurisdiction over source or destination, only over the medium and the message while in transit. Fourth (and probably most important, although the fewest words were said about it in debate), most INTELSAT members do not *believe* in restricting communication.

Debate over the third condition leads to an amusing contretemps. The policies of INTELSAT are clear: opportunities to supply goods and services to INTELSAT are open to all members, mostly on a competitive basis, but with a commitment to spread procurement around among all qualified suppliers to some extent. If the USSR is as good as it claims, it should have no trouble selling to INTELSAT. If it needs to invoke as many protective sanctions and preferential terms as initially asked for, it is a tacit admission that its goods and services are competitively inferior.

To the USSR, the villain is probably not the United States; U.S. participation in and sales to INTELSAT have declined steadily, partly as a matter of national policy to quell the fears about U.S. dominance expressed by smaller nations since the 1960's. Its real fear is China, which has proven to be extraordinarily capable and is now producing components and subsystems as good as any from INTELSAT members outside of the United States, and in some instances rivalling our best.

In the end, vanity gains over other considerations, and the USSR leans toward accepting the same competitive procurement terms as other INTELSAT members.

Condition 4 is trivial and is accepted at once.

Condition 5 is contrary to INTELSAT principles and also somewhat incompatible with Condition 1. The principle of letting each owner share in proportion to the traffic provided

has satisfied the members for almost two decades. This principle avoids the stigmata of imperialist ownership right by force or capitalist ownership right by purchase. INTELSAT is still a gold mine for its members. It is allowable for a member to invest a share *smaller* than his share of use, and receive a return which is proportionately smaller; however, it seems clearly unfair to the INTELSAT members for the USSR to have a larger than proportional share and thereby reap benefits which, by their standards, belong to the other members.

The only straw which INTELSAT can offer is to invite the USSR to increase its share by the terms of Article 6c(ii) of the Operating Agreement, i.e., by accommodating individual members who wish or agree to a smaller share than otherwise allowed by Article 6.

It becomes clear that a long debate is to be aired!

1987

Because the USSR appears to be negotiating in earnest for a merger, the French PTT softens its stand against INTERSPUTNIK and joins, retaining INTELSAT membership also.

INTERSPUTNIK has ample redundant circuits over the Indian Ocean but rather thin coverage over the Atlantic and Pacific. INTELSAT, on the other hand, has tremendous coverage over the Atlantic and good coverage over the Pacific, but somewhat thinner coverage over the Indian Ocean. At the moment, each has more than enough channel capacity to meet its members' requests. It is foreseen, however, that between traffic growth and equipment failure, occasions will arise where needs cannot be met without launching more satellites.

INTERSPUTNIK suggests that the circuit availability of both systems would be improved by a cross-leasing agreement. They suggest an agreement to cover sudden, unforeseen outages, according to which either party would lease to the other available channels in operating satellites or orbiting spares. INTELSAT agrees, provided that the agreement shall be binding only as long as negotiations toward an ultimate merger are progressing.

1988

The cross-leasing agreement is signed. It provides for immediate exchange of technical information and prompt tests of the compatibility of certain INTERSPUTNIK satellites with INTELSAT ground stations and vice versa. The technical problems which arise are minor, except with respect to the subsidized INTERSPUTNIK terminals supplied to third-world countries in the late 1970's and early 1980's, which had deliberately been made INTELSAT-incompatible. The USSR unilaterally undertakes to replace or modify these, but one-by-one in the chronological order of their original installation and according to a program spread over many years. It seems foolish to INTELSAT to spend effort modifying

INTERSPUTNIK terminals in countries already served by an INTELSAT terminal, but considerable persuasion is needed before the USSR revises its schedule and starts instead to modify terminals in countries that are served only by INTERSPUTNIK.

The Scandinavian countries (jointly), Finland, and the UK follow France in joining INTERSPUTNIK, followed by Brazil and Japan.

For a period of weeks after an INTELSAT satellite fails over East Africa, INTERSPUTNIK supplies some circuits from its Indian Ocean equipment. INTELSAT quickly moves an orbiting spare from the Western Pacific into an orbit over the western shore of the Indian Ocean and restores its autonomy. However, the actual provision of service by INTERSPUTNIK is followed by a greatly relaxed atmosphere in the negotiations for a merger.

It appears to INTELSAT that the INTERSPUTNIK circuits over the Pacific are saturated, but INTERSPUTNIK makes no move to ask for temporary help from INTELSAT.

Long-term weather changes in the northern hemisphere have decreased agricultural yields in some of the more northern areas, particularly Russia and Siberia, Canada, and the United Kingdom. China, the United States, and India adapt to the changes with some redistribution of land use but no net loss in output. The wheat harvest is particularly bad in the USSR, however, and it is forced to make purchases as large as in the mid-1970's.

Help comes from an unexpected quarter. One of the sources approached by the USSR to supply grain is the People's Republic of China. China invites the USSR to a series of private talks. After a while, China proclaims the strengthening of relations between the two countries and announces the sale of a large amount of grain to the USSR. In an ostensibly independent move, the Soviets abandon Condition 5, and integration of INTERSPUTNIK and INTELSAT is achieved. Experienced China-watchers agree that Chinese pressure on the USSR made the breakthrough possible.

1990

The USSR displays a customary pattern of secrecy and apprehension, which sometimes seems like paranoia to the Western world, about its share of the new INTELSAT operations. The rest of the world laughs, but those who have to make the new INTELSAT work are not amused. The USSR continues to press for circuit selection that will make it impossible for certain kinds of traffic between Iron Curtain countries to be routed through Western hands. This conflicts with the automated switching and route selection requirements that make the network so economical and effective. A means for conciliating the USSR is devised, but at a price: a system of priorities is established whereby the desired routing is followed under favorable traffic conditions. Under conditions of incipient overload, system failure, substitution of an orbiting backup, or the like, however, the channels with restrictions are allowed to be cut rather than be rerouted.

By the following year, most remaining differences are resolved, and the joint system is operating effectively.

COMMENTARY

Technical Considerations

Can the Soviets put up a global communications satellite system at all? We know that their communications and computer technology lags ours, and that they have learned far more from our joint space missions than we have. On the other hand, the USSR is generally believed to be capable of closing any gap with the West in a narrow technical field if it assigns a sufficiently high national priority. It has also shown a willingness to use brute force, especially larger boosters, to achieve its goals.

This scenario compromises by assuming that the USSR exerts enough effort so that by the 1980's its telecommunications satellite technology is no more than 10 years behind ours, and that in the meanwhile it accepts higher risk in the form of lower reliability (i.e., accepting failure of over a third of its launches) and a service life of less than three years. Even though its system is thus much more costly than INTELSAT, this does not rule out its use for telecommunications. Such are the economics of space communications.

What about orbiting nuclear power supplies? The USSR is believed to be orbiting a multi-kilowatt nuclear-electric power supply today. Technical considerations strongly influence the decision between nuclear and photovoltaic (solar cell) sources. With efficient electronics, superior control, and very reliable solar batteries, we favor photovoltaic sources. In this scenario, we assumed that the USSR wants to get an order of magnitude more electric power than we use, soon, and that it has boosters big enough to put a nuclear supply into orbit. Well-informed critics agree that the nuclear fallout risk from a launch failure or otherwise is small, because the amount of radioactive material is small and it would either fall in the ocean or a remote and unpopulated region or be widely dispersed. However, the general public is not convinced, and INTELSAT is sensitive to this opinion. The USSR is much less concerned.

Orbiting switches that redistribute the messages in one incoming channel among several outgoing channels are no real problem with pulse modulation and modern microprocessors. Whether they would add much value to the system is uncertain; no justification has been offered, simply the assumption that sufficient reasons will exist for using them.

Bargaining Attitudes

The national and cultural attitudes of the USSR and the United States toward bargaining differ. In most of the negotiations, the USSR bargains with pessimism and leans toward a minimax solution – i.e., one that minimizes its loss if the other party adopts the most obnoxious position. The United States, on the other hand, usually tends to bargain on the

optimistic hope of cooperation, especially in matters not threatening national integrity, and leans toward the best joint outcome, provided both parties act in good faith to sustain the agreement. This policy requires mutual trust and a sharing of information and plans.

When the two nations are bargaining with each other, they may actually be aiming at different end points. The USSR is afraid to accept the U.S. solution, for fear that we will later change our strategy and skin them after the agreement is made. We do not want to accept the USSR's end point, because we believe that a different arrangement would be more desirable for both parties, if we could only trust each other. Hence, each party has a tendency to reject the compromise position which the other regards as rational, equitable, and mutually desirable.

Attitudes Toward Benefits

The USSR and the United States can both appreciate many benefits from a global communications satellite system, but they disagree about their relative importance. Some of the benefits are:

a. Facilitating the world trade of its members;

b. Extending aid and promoting progress in less developed nations because of

   1) altruistic concern

   2) desire to prevent antagonism, which would result in undesired actions;

c. Providing economic return to investors;

d. National and cultural glorification

   1) to present a face of Western democracy as a positive benevolent social force, or

   2) to present a picture of world communism as a positive benevolent social force;

e. Extending control or influence over smaller or developing member countries

   1) by participating and doing for them what they cannot do for themselves,

   2) by influencing their methods, standards, formats, and business and government uses of communications,

3) by facilitating ties with other services in co-member countries in such areas as finance, transportation, manufacturing, and commodity markets,

4) by covert or overt threats to disrupt trade by interfering with communications,

5) by covert or illegal use of information which passes through the network.

The United States rank-orders these benefits from most important to least important in the order a, b, c, d, e. From the way it has chosen to implement its membership in INTELSAT, the United States clearly never expects to do without c. The USSR rank-orders these benefits most probably in the order e, d, a, b, c; from past experience, we can infer that the USSR never expects to do without d but has little appreciation for c.

Cultural Attitudes

The USSR and other nations who do not share the cultural traditions of Western Europe do not have the same respect for the integrity of communications which pervades our society and legal system, and which is embodied in our constitutional guarantees of freedom of speech and press and against self-incrimination. Consequently, they do not share our almost instinctive commitment to expand facilities to meet traffic demand, to trust each other to pass traffic, and to let people say what they will to whom they will, without molestation or fear of reprisal. They also misjudge the reaction to their jamming INTELSAT. Conversely, we misjudge the availability of direct dialing to the USSR as indicating a new policy of more open interpersonal communication.

Merger Economics

The USSR and other countries sharing a Marxist view of economics cannot believe that an organization like INTELSAT, which is built on the model of shared capitalistic ownership of means for provision of service, and whose growth is largely controlled by the need to sell service at a profit to users, can be as effective as one like INTERSPUTNIK with planned growth. They therefore are constantly seeking additional plans and control mechanisms which we find superfluous at best, and often an obstruction. A substantial non-economic motivation is evident in the terms under which INTELSAT eventually integrates with INTERSPUTNIK: to achieve the ideal of a single global network available to all, INTELSAT members agree to a bargain which, in pure economic terms, is of dubious benefit.

Political Policy

The USSR and its closest supporters never hesitate to use INTERSPUTNIK as an instrument of national political and economic policy. They negotiate with INTELSAT as

though we were doing the same, although there is ample evidence from the various Agreements and published accounts of INTELSAT activities to show that such use of INTELSAT is nearly impossible.

Information as a Commodity

There is growing recognition that information and logical decision processes are "things" capable of being restricted, regulated, and taxed in themselves. Many countries have an ad valorem tax on communications services. What if countries in the communications transfer business (see scenario) were to tax communications at the rate of one cent per megabit, the way many countries impose a landing tax of so much per head for all air travelers arriving?

Traffic Generation

The fluctuations and peaks of traffic generated by computers will be changed by the growing power of mini-computers. The typical terminal in a computer network will be in itself, a fairly high-powered computer; and when it talks or listens, it may want a megabit channel rather than few kilobits or tens of kilobits.

Competitive Effects

In 1976, we see INTELSAT growing as a monopoly internationally regulated by its members, who are also its owners and its clients. In principle, one could imagine that global competition would change its pattern of growth. However, the competition offered by INTERSPUTNIK is not enough to have a major impact; it has a minor impact in assuring that all services offered by INTELSAT are competitively priced, individually as well as in the aggregate. Also, it causes some nations to be connected to a truly universal global network somewhat later than they probably would be in the absence of INTERSPUTNIK, but this is more important to the countries themselves than to either the shape or commercial growth and success of INTELSAT.

An Alternative Ending

A possible alternative ending to our scenario might be based on much harder bargaining by INTERSPUTNIK; thus:

1986 – The USSR puts out feelers about a merger of INTELSAT and INTERSPUTNIK, proposing certain conditions:

(1) It proposes to pay for its membership in kind, by turning over INTERSPUTNIK satellites and terminals. The INTERSPUTNIK satellites and terminals behind the Iron Curtain are revealed to be fully INTELSAT-compatible.

(2) The flow of certain kinds of trans-national traffic across the Iron Curtain is to be restricted.

(3) The TV rebroadcasting satellites over the Indian Ocean are not included.

(4) The INTERSPUTNIK affiliates are to have an equal voice in the combined system with the INTELSAT members.

Negotiations for integrating begin in earnest.

1987 – It appears that compromises on Conditions 1 and 2 could be reached. Condition 3 is trivial. With respect to Condition 4, however, INTERSPUTNIK investment and traffic are much less than those of INTELSAT, and for the projectable future the use of an integrated system by the (1987) members of INTERSPUTNIK would be far less than half of the total usage. INTELSAT members balk, therefore, at giving INTERSPUTNIK members a role and interest at par with INTELSAT.

1988 – Nevertheless, because the USSR appears to be negotiating in earnest for a merger, the French PTT softens its stand against INTERSPUTNIK and joins, retaining INTELSAT membership also.

1989 – Sweden, Finland, and the UK follow France in joining INTERSPUTNIK; Brazil and Japan do likewise.

INTELSAT members suggest merger on terms of modified parity, whereby ownership in the combined system is in proportion to use, but the INTERSPUTNIK members collectively are guaranteed veto power. The USSR appears willing to negotiate around this offer but asks for some considerable changes in the proposed organization plan. The People's Republic of China digs in hard against further concessions.

The USSR wheat crop fails badly. China has wheat and is willing to sell to the USSR, but it drives a hard bargain. In addition to the overt conditions, China is believed to insist that the USSR stop asking for terms more generous than the most recent INTELSAT merger offer. The USSR needs the wheat but will not be pressured into the merger; she buys China's wheat and stalls the merger talks.

1993 – It becomes clear that most large INTELSAT members will join INTERSPUTNIK also, following the example of Italy, France, Brazil, et al. Many small users stay with INTELSAT for economic reasons. Among large users, only the People's Republic of China announces as a matter of principle that she will not join INTERSPUTNIK.

Two global telecommunications satellite systems are now in operation. Where they have parallel routes, INTELSAT is cheaper and more reliable and offers more services. To get good global coverage, all major powers (except China) belong to or are ready to join both systems. INTERSPUTNIK is technically satisfactory but is an economic drain on the USSR. Hope for a merger is dwindling, but negotiations toward inter-connection agreements are gaining momentum. It is anticipated that within a few years the two systems may be functionally interconnected, as far as telephone subscribers are concerned, even if still administratively separate.

BASIC QUESTIONS TO BE CONSIDERED

--If information and its communication could represent a strategic resource in international affairs whose value may approach or exceed that of energy, will appropriate U.S. Government policies be formed only after there is an energy-type crisis?

--Can we apply traditional foreign policy and national security concepts to information flows or must we develop new concepts to accommodate a changing world?

--Should there be a national discussion of information policy akin to the discussion of an energy policy?

The following pages present specific current situations and pose further questions to be considered as information and communications policies are evolved.

1. THE SITUATION

As the world becomes more complex and interrelated, public and "official" dependence on the mass media to keep in touch with events and in touch with what people think is greater than ever.

Questions: What should be the policy of the United States government in keeping the free flow of news and commentary across national lines? How should our government react to censorship abroad?

2. THE SITUATION

The Helsinki Accord states, in part: "The Participating States...make it their aim to facilitate the freer and wider dissemination of information of all kinds...(and) encourage the exchange of technical information...." These statements have been interpreted somewhat differently by the various parties involved. Some observers say we should closely watch Russia's observance of these provisions to gauge her intentions vis-a-vis detente.

Questions: How important is the free flow of information in east/west relationships? Should we make information freedom a key point in our relationships with the superpowers?

3. THE SITUATION

Canada has considered measures to block some US television signals transmitted across the border and also expressed concern over US data banks with large files of information on Canadian citizens. Meanwhile, Switzerland actually has enacted legislation outlawing the accumulation in other countries of certain information about Swiss banking and business. This affects US firms, such as credit card companies and international banks.

Questions: Should the US consider similar measures or, to the contrary, fight to halt restrictions on the transfering of such data? Should we consider encouraging the creation of "data havens" in several nations around the world, just as the Swiss have something of a banking haven, or should the US encourage the entire world to be a "data haven"?

4. THE SITUATION

Transmitters for Radio Free Europe, Radio Liberty and the Voice of America are located on foreign soil. Some of the "host" nations have on occasion wanted the transmitters out of their countries.

Questions: How strongly should the United States fight to maintain present facilities abroad? If we are committed to a free flow of information, what should be our policy if BBC, Radio Cairo or Radio Havana wanted to buy or lease land on US territory for shortwave radio transmitters?

5. THE SITUATION

Former President Gerald Ford directed his Domestic Council's Committee on the Right of Privacy to undertake a comprehensive study of the emerging issues of information policy; particularly the relationship between privacy and freedom of information. The President noted the need to better coordinate and direct the way government information policy is made.

Question: Should there be a similar study of the international aspects of information policy, privacy and freedom of information? What should be the role of Congress in determining the shape of future policies?

6. THE SITUATION

The United States has built an Earth Resources Technology Satellite. The satellite's information and pictures, which can pinpoint the location of some minerals and other vital resources, are available to all. Several nations, particularly those without adequate resources to evaluate and interpret the pictures, claim we should not distribute data about their resources. In effect, they say individual nations have sovereign rights to certain information and material about their economy rightfully is theirs to disseminated. Developing countries are concerned that developed nations could exploit the information. Some nations with large mineral resources, for instance, do not want possible "new finds" inside their boundaries (or in other countries) to be made known. This, they claim, could lower the price-per-ton. The question is being hotly debated in the U.N. Outer Space Committee.

Questions: Is there a sovereignty over certain types of information? If so, what kinds of information would fall in that category? How should that be protected? If not, how should such information best be made available for the good of all the world? How are conflicts over sovereign rights to control information to be resolved?

7. THE SITUATION

In the United States, most communications operations are not owned or run by the government. Abroad, in most cases, the reverse is true. Conflicts are resolved by negotiation between the companies and their agents and the government involved.

Questions: What new conflicts will arise between the US approach of private communications ownership and the government ownership so prevalent in other countries? How can these conflicts be resolved? How big a role should the US government play?

8. THE SITUATION

While, in the United States we generally encourage full dissemination of information, there are exceptions. The individual's right to privacy is a reason to somewhat restrict spreading personal information. Also, a corporation has a right to proprietary business information.

In many non-national security areas the government actually encourages international dissemination of technical, industrial, cultural and other information. The availability of federally financed research and development data, for instance, follows, in part, from a philosophy that such information will help foreign economic development and raise standards of living. On the other hand, the Pentagon and Arms Control Agency have suggested the outflow of strategic know-how may be our nation's Achilles heel. We not only export technology, but we bring students from abroad here to learn all there is to know about creating new technology.

Questions: If economic warfare may be one wave of the future, and the time may come when the US wishes to use its economic weapons even more aggressively than in the past, should US policy be to increase control over the international spread of our technological information resources? For instance, should we monitor and license more forms of know-how as we already do in selected areas (nuclear, for instance)? Or should there be a policy to further encourage such dissemination? Is there a point in between that should be sought?

9. THE SITUATION

Nations can control information in ways more subtle than outright censorship or monitoring. Pricing is one method.

Over the years the postal systems of the world have been called by many observers the best example of the free flow of information. Even in times of war you can mail a letter to just about anywhere and expect that it eventually will be delivered (although in some cases it may be read by several people along the way).

In an extreme case of controlling information and communications by pricing, it became apparent early in 1976 that South Vietnam was charging the equivalent of approximately $100 in US money to send a letter by surface mail to the USA.

Questions: What should be US policy regarding the use of economic means to control information abroad? What type of a program would be needed, how would it be run and who would be in charge?

10. THE SITUATION

One strength of multi-national organizations is the internal sharing of information. A US company might do research and development in New England and then relay its conclusions to subsidiaries abroad. This could be through the firm's own private computer network which may run across several nations. If those nations wanted to exert control over the US company (to improve the competitive ability of a "home" firm, for instance) they could tamper with the communications. It appears that Algeria is one nation that does not allow computer-generated data to cross its boundaries, except in rare instances.

Questions: Should there be an international "Law of Communications" Conference similar to the Law of the Sea Conference, to negotiate agreements to provide for a free flow of information? Should there be more bilateral agreements? How far is the United States willing to go to protect what may be perceived as a belief in a free flow of information internationally?

11. THE SITUATION

Arab communications ministers have decided to create their own communication network, which will include several satellites. The Russians and others already have working communications satellites.

Questions: Is it in the best interests of the United States to assist other nations in improving the world's communications networks when there already is an abundance of connections and more competition could be harmful to US interests? Should these systems be compatible? Is there a way to assure continued free access to communications systems?

12. THE SITUATION

In the White House, the State Department, Pentagon, other government agencies, as well as other organizations, there are crisis centers, situation rooms and other communications complexes where officials gather to assess fast breaking and critical events. The quality, as well as the quantity of information is the fulcrum upon which all decisions rest. Information is vulnerable.

Questions: What can we do to prevent the State Department's cablegram system from being jammed, satellites being put out of order by a barrage of laser beams, false information being fed into such systems? What would happen if a crisis occurred and somebody pulled the plug on the world's communications systems? What is being done and what can be done to prevent this from happening?

13. THE SITUATION

The bulk of State Department and US military communications travel over privately or foreign-owned communications networks. In 1976 a European governing body threatened to withhold additional communications links from United States' use until certain matters before the Federal Communications Commission were cleared up. A US army general complained that this was impairing the European mission of his command. Thus a foreign relations consideration, having military implications was, in effect, being handled by a semi-autonomous US governmental body which is not usually thought of as being part of the foreign policy process. While the matter at hand was not of supreme importance it illustrates the problem of jurisdiction in foreign policy matters.

Questions: Who in the US government should set international communications policy? Who should police it?

14. THE SITUATION

According to a Government Accounting Office report, many federal data processing centers and a great deal of their data are not properly protected from threats of sabotage, theft and fire. "They are dangerously vulnerable to terrorist activity," said Senator Abraham Ribicoff, who requested the study.

Question: Should there be a national policy to safeguard the information in US computers from foreign economic, political and strategic warfare?

15. THE SITUATION

The June 1975 Report to the President by the Commission on CIA Activities within the United States, the so-called Rockefeller Commission, said:

"While making large-scale use of human intelligence sources, the communist countries also appear to have developed electronic collection of intelligence to an extraordinary degree of technology and sophistication for use in the United States and elsewhere throughout the world, and we believe that these countries can monitor and record thousands of private telephone conversations. Americans have a right to be uneasy if not seriously disturbed at the real possibility that their personal and business activities which they discuss freely over the telephone could be recorded and analyzed by agents of foreign powers.

"This raises the real specter that selected American users of telephones are potentially subject to blackmail that can seriously affect their actions, or even lead in some cases to recruitment as espionage agents."

Questions: How real is the threat? Are US citizens endangered? Are we prepared to protect our citizens from possible blackmail? Should there be a policy concerning such matters and who should set it?

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