# Transborder Data Flow in the Developing World: A Question of Balance

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This paper is a brief attempt to summarize the possible causes and circumstances surrounding the controversy over "transborder data flows" (TDF), a controversy which eventually will involve many international communicators. While this is not intended to be a rhetorical essay on the politics and priorities of TDF control, these are the central themes that seem to arise whenever one attempts to get a handle on this complex subject. Thus, the approach here is to examine the socio-political and macroeconomic contexts that are the foundation and incentive for international action and controversy within the TDF regulatory scenario.

Transborder data flows, in this context, are the transmissions of machine-readable information across national boundaries so that data may be processed, stored, or retrieved in mainframe computers or data banks in other countries. Such movements may be from point to point for the delivery of messages, raw data, or processed information, and may be sent in analog or digital form via cable or microwave transmission, or carried manually, usually in the form of magnetic discs or tapes. Of late, these transmissions have aroused considerable interest in the conferences of international delegates, such as the EEC (European Economic Com-

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munity), the IBI (International Bureau of Informatics) and the OEDC (Organisation of Economic Cooperation and Development). (Informatics: information system linked with computers.)

In these settings, representatives of many nations have debated the degree of impact these flows are having on their ecomomies, on national sovereignty, and on personal privacy. In some instances, they have gone so far as to recommend specific regulatory actions for national implementation in order to prevent what some see as negative effects of transborder data flows. The response of some nations has been to regulate TDF in a manner that may seem extreme or protectionist to entities hoping to continue or expand their international informatics activities (c.f. OECD, 1981).

How does the seemingly abstract subject of transborder data flow directly affect the average communicator in his or her international interactions? The answer to this question is not simple, any more than it would be to measure the true impacts of TDF regulations on, for instance, transnational corporations, which are the primary targets of TDF regulation, or on the governments of less industrialized nations, which, along with their private citizens and infant national informatics enterprises, are the intended beneficiaries of these controls. These supposed impacts and benefits have not been thoroughly delineated, let alone effectively measured, yet it is proving evident that they do exist and will eventually affect almost everyone utilizing international telematics systems. (Telematics: telecommunications systems linked with computers.)

One may safely say that factors relating to national sovereignty and economic development, to cultural integrity and personal privacy, and ultimately to the individual TDF users and sellers, are inextricably bound up one with the other. Whether unhindered or regulated, the direct affect of transborder data flow on one entity may in the end influence the interactions (e.g., the ability to communicate information internationally) of the others.

The most immediate effects on the interactions of international communicators, especially those in the media, may be felt as a result of the highly-publicized and politicized controversy over the "one-way flow" of news and media program dissemination. This aspect of the TDF controversy has resulted in calls for a "new international information order"

(c.f. Hamelink, 1983). The implementation of this order would limit the flow of news and programs from the industrialized world and assist in the development of news agencies and programming in the less industrialized regions of the world. The intent seems to be to sponsor more indigenous perspectives in national media, and, in return, to increase the flow of these perspectives to the more industrialized nations.

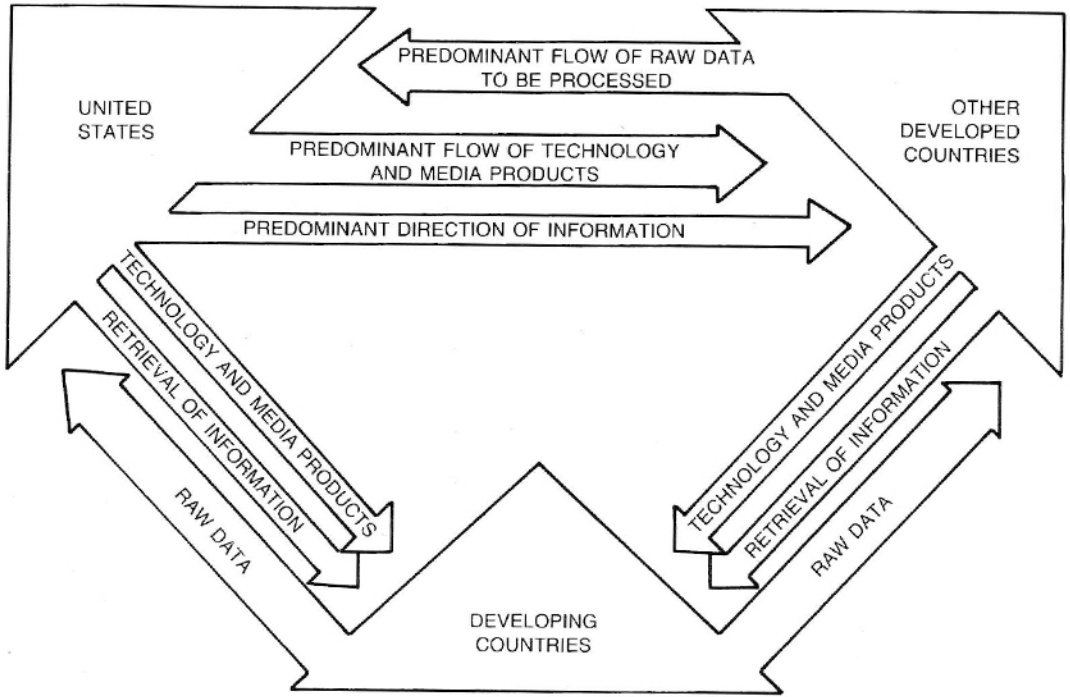
Similar trends in other aspects of transborder data flow underlie the controversy. As demonstrated in Figure I, there is a net "loss of information in the developing world as raw data flows in relatively large quantities to those who know what to do with it (primarily in the U.S.), and relatively smaller quantities of processed data are sought or received in return. The term "loss" is relative, of course, since the value of information may be retained by the originator no matter how many others have access to it, or its value may diminish when it is outdated, sold, or disseminated to others.

From the developing world's view, there are several issues at stake here, from national sovereignty to personal privacy. First, and related to all other concerns, is the stated goal of certain nations, led primarily by France and Canada, to achieve national sovereignty over information. They are concerned that sovereignty is threatened when "vital data bases or computer services necessary for the effective functioning of government or business are physically or technically under the control of foreign authorities, and subject to the political decisions, technical breakdowns, labor unrest or other vagaries in those jurisdictions" (Dalfen, 1980, p.5).

But their concern also relates to the recent acknowledgement in much of Western society that information is a commodity, in addition to being a resource. As a public good or resource, information should be freely available to all, much as it is in the public library, or as it is provided to U.S. citizens under the Freedom of Information Act. However, as a commodity, information has a recognized, if at times unaccountable, economic value. Louis Joinet of France (1979, p.118) asserts, "Information has an economic value, and the ability to store and process certain types of data may well give one country political and technical advantage over other countries. This in turn leads to a loss of national sovereignty through supranational data flows."

Specific vignettes in the TDF scenario tend to raise international eyebrows, such as the fact that Eastern European na-

FIGURE 1




PATTERNS OF TRANSBORDER DATA FLOWS

Source: Rein Turn, ed., *Transborder Data Flows: Concerns in Privacy Protection and Free Flow of Information*, Vol 1, Report of the AFIPS Panel on Transborder Data Flows (Washington: American Federation of Information Processing Societies, 1979), p.5.

tions rely on an Atlanta, Georgia, computer to handle their airline reservations. Or, for example, whenever an emergency arose in Malmo, Sweden, the fire department there depended for years on TDF to receive important information on local homes, inhabitants, and emergency facilities—data that were stored, processed, and retrieved in a computer in Cleveland, Ohio. After several years this was corrected, of course, as controversy arose and local alternatives became available. Based on their perceptions of such situations and on the recognition of the importance of information technology to future economic well-being and independence, countries such as France and Brazil have initiated national programs to implement the "informatization" of their societies (c.f. Nora & Minc, 1981).

Transnational corporations are the entities that are held to be most overtly involved in informatics activities that threaten the sovereignty of developing nations. With TDF, they may extract raw data from a nation to determine how, when, and where to place bids on undeveloped mineral deposits (e.g., by using U.S. Landsat technology, recently turned over to corporate control). With such information, they may gain untold advantage over national-level firms and over national governments at the bargaining table. They may use this information to increase the efficiency of a foreign subsidiary's operations or to know when to terminate them and, by being more capable of reaching out through the transnational system, decrease local managerial control. They are better positioned to learn about markets, political and competitive threats, and ecomomic opportunities, or to engage in any number of commercial pursuits (see Shipley, Shipley, and Wigand, 1984).

Clearly, as it is used by these firms, much of this information is proprietary in nature and many regulators would not insist that it be shared or its flow limited. However, government delegates of less industrialized nations, such as Brazil, are saying that when flows of such information increase and are uncontrolled, the end result is that development decisions are being made outside of their countries. They are being made, they say, by entities not necessarily concerned with the overall economic, cultural, or development interests of the nations involved (c.f. De Oliveria Brizida, 1980). Indeed, a U.S. delegate conceded, "The export of data for systematic analysis in a sophisticated programming model can yield a valuable assessment of a nation's resources, an assessment that is more valid and valuable than that available to the nation itself" (Crawford, 1980).

This leads to the next issue of concern, an economic one. The development of national industries is essential to solvency in today's world of trade deficits and debt crisis. Information-related services are comprising ever larger portions of the revenues generated within countries and by international firms (see Table I). Governments of many nations, from France and Canada to Brazil, have expressed an interest in preventing the flight of jobs and funds to countries where their data is processed, stored or handled.

TABLE I

PROJECTED REVENUES FOR THE TOTAL ON-LINE DATABASE SERVICE MARKET BY SUBJECT AREA, 1979-1985
(million dollars)

| Subject Area | 1979 | 1985 | Average annual growth rate (%) |
|---|---|---|---|
| Econometrics | 67 | 200 | 20 |
| Securites & commodities | 140 | 300 | 13 |
| Economics & Finance | 125 | 450 | 24 |
| Natural resources | 16 | 96 | 35 |
| Demography | 36 | 135 | 24 |
| Industry | 37 | 126 | 23 |
| Law, Accountancy | 75 | 360 | 30 |
| News | 40 | 235 | 34 |
| Marketing | 105 | 510 | 30 |
| Credit | 240 | 710 | 20 |
| Bibliography | 62 | 225 | 27 |
| Patents | 22 | 95 | 28 |
| Real Estate | 45 | 175 | 25 |
| International | 18 | 70 | 25 |
| Other | 140 | 560 | 26 |
| TOTAL | 1,170 | 4,280 | 24 |

From: *Transnational Data Report,* V(7), 1982, p.341. Originally in INPUT, International Market Opportunities for On-line Database Services (Palo Alto, CA, Sept., 1980.)

Not only does the purchase of foreign information services constitute an import in a time when excess imports can adversely affect balance of payments, but it also eliminates many jobs, from computer manufacturing and data processing to managerial and office supporting functions. In Canada, over 25,000 jobs were projected to be lost by 1985 in data processing functions alone, along with an additional 100,000 supporting positions. This employment problem adds a great deal to the estimated $1.5 billion Canada will have spent between 1980 and 1985 on imports of data processing and storage, primarily from the U.S. (Robinson, 1980).

If viewed as an economic good or commodity, information may be taxed. In Great Britain, there is a value added tax placed on computerized information services such as the data base services sold through Prestel. Justification for this taxation, again, lies with the increasingly important role information services are playing as a part of global economies. Instantly accessible information as to where interest rates are highest in the world prompts overnight transfers of billions of dollars worldwide through electronic funds transfer systems (e.g, through SWIFT), sometimes resulting in severe fluctuations of national currencies. Such uses of information to gain profit are certainly not new, but through the increasing availability of telematics to enhance transborder data flow, these flows are seen as major factors that affect economics, development, and cultural and personal affairs in many nations.

Governments in both developing and more developed nations are concerned that they may be less able to ensure the degree of control they desire over those internal affairs that directly or indirectly affect national sovereignty and cultural integrity. The latter has become an issue in some nations as computer users claim that the languages and structure inherent in the new technology convey design and thought patterns unique to the culture that developed them (De Oliveria Brízida, 1980). Some are also concerned that the rapid evolution of information-age employment has already wrought changes in the workplace. The term "electronic sweatshop" has been applied to the Third World data entry centers that have sprung up to handle demands for cheap labor for menial modern age tasks (Pollack, 1982).

Another issue is personal privacy (see Wigand, Shipley, & Shipley, 1984). More than a dozen nations have set up "data control boards" or "data protection agencies" to regulate

name-linked information on their citizens that is gathered, held, or disseminated within or across their borders. Sometimes they go so far as to include coverage of data on all natural persons, e.g., those who are not citizens of their countries, and even on "legal persons," such as corporate entities. In some instances only automated data processing is regulated, in others manual means are included. Registration or licensing of data banks is often required, and if transborder data transmissions are to be made, encryption codes must be filed with the control board so that they may ascertain compliance with regulation. Usually, data from both public and private sectors are controlled. Enforcement measures in event of noncomplicance range from fines to destruction of data.

Another regulatory area involves the establishment of trade barriers that have the effect of limiting transborder data flow. Restrictions include control over access to networks and leased lines, technical requirements for standardization of hardware, requirements that data be processed within a country, and local ownership or local content requirments for communication hardware. Other barriers include discriminatory government procurement practices for both hardware and services, tariffs and import duties on hardware, government support and subsidy of local industry, and favoritism in telecommunications rate structures. The primary motivation for these barriers seems to be to protect the operation of national information industries or labor markets from the competitive advantage of transnational corporations.

As individuals, international communicators may experience relatively few immediate effects in this international regulatory scenario. Trends in foreign TDF policy formation, however, have made it evident that anyone relying on the electronic transfers of information should at least be aware of these issues and be prepared to deal with a more highly regulated TDF future. According to Donovan (1981), those most affected will be users of highly centralized computer systems and private or public networks. If alternative systems (e.g. for data processing, including hardware and software) are available within the host country of operation, access to international systems may not be permitted.

Thus, data flows may be subject to taxation and restrictions for reasons of sovereignty, security, and privacy, especially if information on natural resources or private citizens is involved. Regulations may also be enacted to allow infant national-level industries the respite they need from foreign

competition in order to develop their own information technologies. In post-war Europe, protection from established competitors and trade advantages were needed in order to build (and rebuild) industrial age technology. In the information age, similar controls over TDF may have more impact on private and public institutions and on researchers and information disseminators than anyone may guess at this time.

Ultimately, an understanding of the necessity for balance must mitigate the TDF controversy. It is obvious to governments, citizens, and corporations alike that developing nations must have access to information services through transborder data flow if development is to proceed efficiently and fairly. Scientific, technical, medical, meteorological, and many other types of information in data banks should be available to users around the world. Examples are legion of how telematics and informatics technologies have assisted the less industrialized world. The managerial, scientific, technical, and developmental expertise of industrialized nations is indeed appreciated. Countries like Zaire will attest to this, as information from Landsat enables them to make better cropland selection decisions and to avoid construction in areas of seismic disturbances, or as connection to international data networks allow them to sell mineral resources directly through offices in Tokyo, New York, Paris and Amsterdam (Lloyd, 1980).

The U.S. position favoring the free flow of information is reiterated in many documents, but in part it is exemplified by this statement (U.S. Senate, 1983):

> The U.S. position on this matter. . .would be to strongly oppose any actions that would interfere with the ability of producers and users to make optimum use of information as a productive resource. This will lead to a more efficient utilization of resources. It will also lead to greater revenues for both private entities and, ultimately, for taxing authorities.

In general, U.S. position papers echo this sentiment by emphasizing support for private enterprise and for the continued advancement of efficient electronic systems for international economic transactions and information exchange. They generally point out that innovation in communication technologies enhances the free flow of information and ideas and is essential to human rights and the growth of more open societies worldwide, as well as for the expansion of competitive investment opportunities.

While this position certainly has merit, it must be compared to the developing world's view, which holds that it cannot hope to enter the information age in an equitable way, as full partners, without some means of encouraging their own national-level informatics development. Brazil has pioneered a system of regulation which authorizes international teleinformatics links on a case-by-case basis, depending on whether suitable national alternatives are available. Surely this system is preferable to total "dissociation" from uses and users of TDF, as some have suggested (Hamelink, 1983). Dissociation would perhaps help nations gain the respite needed to set the pace in their own development, but it would also cut off important access to valuable informational tools for development. The case-by-case method would also seem to moderate the effects of broader TDF regulatory applications, such as the trade barriers, taxes, and economic sanctions mentioned previously.

The actors in the TDF scenario must eventually come to terms on a perspective of balance. The U.S. position, favoring transnational corporations and free flow, and the Third World position, favoring indigenous development and limited flow, are not diametrically opposed if the costs and benefits are weighed on a scale that bears a long-run assessment. Nations need the modern-day systems of access to each other's scientific, technical, and developmental knowledge; they also need a degree of economic and technical independence. It is apparent that this can only be achieved through the strengthening of every nations' individual informatics capacities. The resulting sum of increased independence and greater interdependence among nations will ultimately ensure that the consequences of transborder data flow will be beneficial to everyone involved in the information age.

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