THE DEVELOPMENT OF CANADIAN LAW ON TRANSBORDER DATA FLOW

INTRODUCTION

The transfer of information across political and cultural boundaries is a phenomenon which predates written language. In today's world of satellites and computers, however, this flow of information has taken on added importance. The merger of previously disparate telecommunications and computer technologies has resulted in an "information technology" which reduces vast quantities of information to computer data, transferring it to points on earth and in space at remarkable speeds. Large amounts of computer data now cross national boundaries. Transborder data flow (TDF) results from the transfer, storage, or processing of data in the form of digitally encoded, computer-readable units of information in more than one nation. TDF has prompted many countries to initiate studies and to enact legislation to control or impede TDF.


Information reduced to machine readable form is "data." This Note is purposely narrowed to concerns over computer-to-computer transmissions rather than problems with news and entertainment broadcasts or with other forms of telecommunications, i.e. voice telephony, telex, facsimile, and video. To qualify as TDF the process must involve transmission, storage, and computer computation. The transmission can occur through the physical transportation of a storage medium, by terrestrial line, or by satellite link. Id. at 106-07.


The International Bar Association held its first symposium on TDF in Toronto, Canada on October 6-7, 1983. For a recent review of the issues concerning Western news media bias and attempts to control electronic broadcasting and information dissemination through the establishment of a New World Information Order, see Fitzmaurice, The New World Information and Communication Order (NWICO): Is the International Programme for the Development of Communication (IPDC) the Answer?, 15 J. Int'l L. & Pol. 953 (1983).

dian studies have raised considerable anxiety over the possible effects of TDF, but curiously Canadian legislation designed to regulate either the information industry or TDF remains scarce.

Since the development of Canadian law in this area is unsettled, practitioners should watch for the emergence of a regulatory scheme affecting the free flow of information to and from Canada. This Note will survey Canadian policies and regulations concerning TDF; explore other Canadian regulatory models which could be extended to include TDF; and compare the regulatory systems of other countries, assessing their compatibility with the objectives of the Canadian legal system.

This Note will show that the Canadian response to perceived problems of TDF has been deliberate and restrained, reflecting a careful balance of exclusive regulatory policies and inclusive policies restraining regulation. The result of this balance is well targeted legislation designed to protect Canadian industries that are particularly vulnerable to TDF. The Note concludes with an overview of methods by which the United States and Canada may pursue a mutually beneficial agreement on TDF.

I. INTRODUCTION TO TDF

As various private and public entities—primarily private compa-
nies, state agencies, and international organizations—become more dependent on international computer communications, they become increasingly concerned over access to and control of information that is both internal (collected by the entity and generated within the entity) and external (collected from outside the entity). Various barriers to international information flow are emerging, particularly in the area of computer-to-computer communications, TDF. The impact of barriers to TDF is primarily economic, particularly when an industrialized state creates these barriers. Barriers to TDF produce negative economic effects because a large and growing number of domestic and multinational enterprises require an efficient and unimpeded flow of data in order to manage business operations, expand markets, and deliver goods and services.

Information flow has always been a prerequisite to international trade, but new information technology has revolutionized information processing, removing earlier constraints of distance and transmission costs in the development of international information networks. Traditional services, particularly the information-dependent services such as banking and transportation, have quickly adapted the new information technology to their information needs. These services have become more efficient and competitive with improved information gathering, processing, and transmission. Sending data back to a centralized computer system for processing produces economies of scale. Centralization allows

---

6 A Canadian observer identifies three activities that create TDF: 1) intracompany information transfers, 2) international information transfers, and 3) transnational pursuit of information resources. Intracompany information transfers usually involve an exchange of internal administrative information, customer service, or a maintenance of records. International information transfers occur when national governments cooperate in administrative or security matters. For instance, Canada and the United States regularly exchange information on defense, taxation, and criminal activity. The transnational pursuit of information resources usually involves the private sector when data processing can be performed more cheaply abroad, vital information is available only abroad, or circumvention of national laws is sought. J. Carroll, supra note 1, at 202.


10 Id. at 11.

11 Id. at 23. But see Saur, Protection Without Protectionism, 29 J. Com. 138 (1979) (Brazilian official strongly defends barriers to TDF as essential for the survival of domestic businesses).

12 W. Sharpe, The Economics of Computers 315 (1969). This is essentially a statement of "Grosch's Law" wherein large production systems are economically favored over small.
quick and accurate use of daily global operating information. Using unimpaired TDF, information-intensive services can operate worldwide, competing more effectively with indigenous services.

International trade in goods also has become more efficient. A

\[\text{But see Berman, A Note Against Centralized Staff, } \text{DATAMATION, May 1970, at 28, where decentralization is arguably more beneficial.}\]

\[16 \text{ House Report, supra note 9, at 24.}\]

\[18 \text{ One result is that service exports have become vital in the balance of trade and lead the gross national product (GNP) index. In Canada services surpassed goods in 1974. Statistics Canada, Gross Domestic Product by Industry (Aug. 1982). In the United States, services have strengthened the dollar in a period of heavy deficits in goods; the service trade surplus exceeded } \text{40 billion in 1981. Wall St. J., Feb. 10, 1982, at 54, col. 1. Domestically, the service sector accounts for } 65\% \text{ of GNP and for 7 of every 10 jobs. House Report, supra note 9, at 26. Recently, the United States incurred a 5\% decline in its share of the world service market. Shelp, Removing the Barriers to Services Trade, 5 Bus. Am. 22 (1982).}\]

Developing countries are particularly concerned about the ability of their indigenous industries to compete with transnational corporations armed with the new technologies. See Suavant, Transborder Data Flows and the Developing Countries, 37 Int’l Org. 359 (1983). In general, information must be acquired at a cost, but, once acquired, it is a valuable asset for those who can use it repeatedly. The value of information lies in its application toward reducing uncertainty, thereby minimizing both monetary and nonmonetary costs. For multinational corporations, information in readily usable form is a capital asset and a transferable commodity. Developing countries that could benefit from accumulated information often have neither the capital to acquire it nor the technical skills to apply it. See generally E. Mackaay, Economics of Information and Law 109-18 (1982).

symbiotic relationship exists between goods and services;\textsuperscript{17} information technology makes manufacturing and distribution support services more efficient. In addition, many goods and services are compatible; for example, in the computer industry itself hardware and software services are often sold as complete units.\textsuperscript{18} Information processing, storage, and transmission has become an important service industry in itself. The burgeoning "information industry" is providing new jobs and increasing national income.\textsuperscript{19}

This "information revolution" and TDF increase trade deficits in countries which must import information services or which have a domestic information industry too underdeveloped to promote effective international competition in their domestic service and manufacturing industries.\textsuperscript{20}

II. CANADIAN TDF

Although there are other controversies over information resources that raise various non-economic issues,\textsuperscript{21} the Canadian Government immediately recognized TDF as an economic issue that has both positive and negative effects on the information industry and on the Canadian economy as a whole.\textsuperscript{22} To participate

\textsuperscript{17} See Krommenacker, Trade-Related Services and GATT, 13 J. WORLD TRADE L. 510 (1979).
\textsuperscript{18} Id. See generally Robinson, A New Economic Alliance—Services and Manufacturing, FINANCIER, Mar. 1981, at 43.
\textsuperscript{19} Telecommunications and computer goods and services account for the largest single share of United States exports after agricultural products. The world market for telecommunications and information services was in excess of $180 billion in 1980, with the United States market accounting for 40% of that total. By 1990 the market could be as high as $442 billion. Arakaki, supra note 13, at 11. Some commentators have labeled the phenomenon an "emergence of a new international information-industrial complex." Symposium on Transborder Data Flow: New Frontiers or None?, supra note 3, at 113.
\textsuperscript{20} Professor Carroll observes that data flows toward economic advantage. Conversely, outgoing TDF has four adverse effects: loss of job opportunities, less control over foreign corporations operating within the nation, inability of the national government to defend certain rights of its citizens, and a diminished stature in the world community. Generally, data for decision-making will flow toward more developed nations, and information reflecting subsequent decisions will flow back toward less developed countries. J. CARROLL, supra note 1, at 203-06. See also Saur, supra note 11.
\textsuperscript{21} One of Canada's major problems is recognition of a well-defined cultural identity. There is concern over the extent of culturally biased information that reaches Canadians, particularly through the radio and television media, and over erosion of this vulnerable identity. Clyne Report, supra note 5, at 79-82.
\textsuperscript{22} An early government task force studying the problem of privacy concluded that TDF raised more questions about business activity lost by Canada than about invasion of privacy. See TASK FORCE ON PRIVACY AND COMPUTERS, PRIVACY AND COMPUTERS: A REPORT OF A TASK FORCE (1972) [hereinafter cited as PRIVACY REPORT].
in the information revolution, Canada must develop the appropriate legal framework. Therefore, Canadians have had to identify those factors peculiar to Canada which impede or support this effort and the relationship of TDF to those factors. The Canadian Government identified the negative factors as follows: foreign owned corporations control the basic technology and most computer and communications equipment is imported; the Canadian market alone will produce an unsatisfactory return on investment; the dynamics and economics of United States-based operations with branches in Canada favor the adoption of United States service packages or direct use of United States services; and research and development in Canada is not sufficiently capitalized to provide a viable product base in either hardware or software.

TDF can either exacerbate or eliminate these problems. If more raw data leaves Canada for processing than enters the country, the Canadian data processing industry suffers, resulting in a deficit trade balance. However, if Canada attempts to restrict this situation by restricting the flow of outgoing data, it risks provoking reciprocal restrictions by the countries sending data into Canada. A free flow of data provides access to larger markets and a source for the most recent developments in the information technologies.

Faced with such difficult choices, a Canadian Government study concluded that computers and communications were already integral to the economic functioning of Canada and that TDF was essential to the degree of efficiency required to maintain a competitive position in both national and international markets. With this recommendation in mind the Canadian Government has sought to identify those interests which compel resort to a legal response to TDF.

33 Branching Out, supra note 5, at 76-77. This does not necessarily mean that only the most powerful countries get the data inflow. For instance, some United States firms find it economically advantageous to have data processed in Canada; however, it is more often the case that data flows toward centralized facilities south of Canada's border. In 1979 the cost of operating a data bank in Canada was considerably higher than in the United States. Canadian import duties and federal and provincial sales taxes were the primary causes. The president of a Canadian-based data processing firm, which did three-quarters of its business outside of Canada, estimated that the firm would save one million dollars annually in operating costs if it moved to the United States. Keddy, Transborder Data Flows: An Uncertain Threat, 6 in Search 12, 16 (1979). Geographically it is more convenient for TDF from Vancouver to flow to Seattle and back than to Toronto. J. Carroll, supra note 1, at 203-05.

34 In an attempt to regulate or encumber information flows, countries run a grave risk of endangering their economic and social health. Heintz, The Dangers of Regulation, 29 J. Com. 129 (1979).

35 Branching Out, supra note 5, at 76.
A. Canadian Law, Sovereignty Interests, and TDF.

Sovereignty interests or privacy interests usually warrant regulatory activity. Canadians describe the sovereignty issues in TDF as "macro" and the privacy issues as "micro." A study, commissioned by the government and prepared by the Consultative Committee on the Implications of Telecommunications for Canadian Sovereignty, defined the macro problems as dependence on foreign data banks, erosion of the Canadian cultural and national identity, decreased control over domestic economic affairs, and a rapid decline in Canada's ability to compete in international industries. The study, popularly known as the Clyne Report, concluded that Canadian sovereignty depends on control over telecommunications and TDF. The intensely nationalistic tone of the Clyne Report caused considerable public reaction and obscured the primary economic issues behind the generalized language of "sovereignty."
The Clyne Report recommended the development of a Canadian informatics policy.\(^1\) Informatics is a term used to describe the social, cultural, political, and economic implications of the new information technology.\(^2\) The Clyne Report specifically recommended vigorous promotion and development of domestic data banks and high-technology telecommunications.\(^3\) It also urged immediate regulation of TDF to ensure control over information vital to national sovereignty.\(^4\) Suggested measures included launching a na-

\(^{31}\) Clyne Report, supra note 5, at 84.

\(^{32}\) The Intergovernmental Bureau for Informatics, which provides assistance to developing countries in the application of information technology, defines “informatics” as “the rational and systematic application of information to economic, social, and political development.” Informatics: Its Political Impact, IBI Doc. DG 1-04, at 2 (1980). Other terms such as “teleinformatics” are also used. Eger, supra note 29, at 203.

\(^{33}\) Id. (Recommendation 24). The following chart categorizes the various strategies available in transborder data flow regulation.

<table>
<thead>
<tr>
<th>Use of Force</th>
<th>Economic</th>
<th>Ideological</th>
<th>Diplomatic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct Regulation:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mandatory disclosures of information; import/export controls on data transmission; surveillance or interception of data transfers; direct stoppage of data transfers; cryptographic concealment of information; other security measures; establishment of criminal penalties for rule violations</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Taxation of data or users; tariffs on extraterritorial processing; enforcement of proprietary rights; discriminatory pricing for services; relaxation of controls to attract data users (data havens)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Appeals to principles of the free flow of information, informational sovereignty, new world information order, privacy and fair information practices, human knowledge and understanding through communication</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agreements relating to the free flow of information and restrictions upon it, or agreements that institutionalize other strategies and goals</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Indirect Regulation: |
| Import/export restrictions on computer and communication equipment; use of security controls; restrictions on the technology of computer communication |
| Taxation, pricing, or other economic controls on trade in computer and communication equipment; realization of economic benefits of new computer and communication technology; prohibition on the use of new technologies |
| Appeals to the benefits or burdens of new and advancing computer communication technology, such as “telemathics” |
| Technical agreements relating to computer and communication technology; agreements that facilitate the use of certain standards, equipment, or uses of available resources |

Novotny, supra note 7, at 159.
tional awareness campaign, requiring performance of data processing related to Canadian business operations in Canada, and preventing foreign takeovers of Canadian data processing enterprises.\textsuperscript{35} None of these specific recommendations has yet culminated in a law which affects TDF.

In the area of banking, a legal restriction designed to prevent the exportation of raw data was already under consideration at the time of the Clyne Report. The measure was incorporated into the Banks and Banking Law Revision Act of 1980 (Bank Act),\textsuperscript{36} making it the only Canadian law directed specifically toward alleviating some of the problems of sovereignty that emerge from increased TDF.

The final version of the Bank Act requires banks to “maintain and process in Canada any information or data relating to the preparation and maintenance” of required banking records.\textsuperscript{37} The Bank Act authorizes the Inspector of Banks to grant or withhold permission to process copies or extracts of customer records outside Canada.\textsuperscript{38} He may also curtail data processing outside Canada if he determines that such data processing undermines his oversight responsibilities.\textsuperscript{39}

This power of the Inspector of Banks to suspend extraterritorial data processing of the banking records that are required under the Bank Act is consistent with his duty to maintain the integrity of the Canadian banking system.\textsuperscript{40} For the first time the Bank Act allows foreign banks to charter subsidiaries in Canada;\textsuperscript{41} accordingly, the law must provide a means for the Inspector of Banks to be able to perform his oversight function over these banks. But the Bank Act goes further by giving the Minister of Finance power to advise the Inspector of Banks to suspend data processing outside of Canada if the Minister concludes that it is in the national inter-

\textsuperscript{35} Id.
\textsuperscript{37} Id. § 157(1), (4).
\textsuperscript{38} Id. § 157(6).
\textsuperscript{39} Id.
\textsuperscript{40} The federal government was probably trying to bring the foreign banking sector under the federal regulatory framework by means of this power granted to the Inspector of Banks. See Sinclair & Krossel, Foreign Banks, Competition and the Bank Act, 86 CANADIAN BANKER & ICF REV. 9 (1979).
\textsuperscript{41} Prior to the Bank Act, foreign banks operated as “near banks” incorporated and governed by provincial law and free from federal restrictions. Id. at 16.
If the Minister of Finance were to conclude that the Canadian informatics policy is in the national interest, then this power could allow the implementation of economic and political strategies to further informatics goals which lie outside the maintenance of banking integrity.

In light of the importance of TDF to the information-dependent international banking industry, Canada's restrictions on TDF through the Bank Act have strategic consequences. These restrictions encourage the use of Canadian-based data processing services and control the dissemination of national economic data, consistent with recommendations of the Clyne Report to lessen the impact of TDF on national sovereignty. Specifically, with impaired TDF, banking in Canada must rely on data processing performed in Canada, thus promoting the domestic information industry, and international banking organizations may be less able to compete with the large Canadian banks. There are no indications that these provisions of the Bank Act are being stringently applied, but the Bank Act could inhibit bank-related TDF.

B. Canadian Law, Privacy Interests, and TDF.

The controversy over the effects of computers on individual pri-
Privacy stems from apprehension over the growing ability of information technology to store and disseminate vast quantities of data concerning individuals. Today, comprehensive personal details about almost everyone are stored in various public and private data banks. The general view is that the information technology which makes such extensive collection of data possible has created concentrations of power and authority which threaten the rights and freedoms of individuals to control information about themselves. Although there was little public concern in Canada over this issue, the Canadian Government felt that it was time to study the problem and the possibility of protective legislation. Rising public concern in the United States over this issue prompted legislation to protect individuals from possible abuse of personal data. The Canadian Departments of Communications and Justice established a Task Force on Privacy and Computers. Background studies for the Task Force concluded that TDF threatened the privacy of individual Canadians. Early empirical findings indicated that a vast majority of the personally identifiable data leaving Canada went to data banks in the United States. Canadian law did not assure Canadian citizens access to or control over their personal data in the United States; the Task Force responded to this problem with four proposals for domestic regulation of TDF. The first proposal was to do nothing and to rely on United States legislation to provide adequate protection for Canadians.

48 See generally id.
50 Id. at 3. The authors describe the Canadian privacy issue as a government response to anxiety in other countries rather than to a Canadian grass-roots movement. Id.
53 See C. Dalfen, supra note 52, at 3. The principal gatherers of data about Canadians are credit card companies, loan companies, credit reporting companies, insurance companies, law enforcement agencies, tax agencies, labor unions, and the personnel departments of multinational enterprises. Id.
54 Privacy Report, supra note 22, at 171.
This would have left Canada exposed to changes in the United States laws and unable to impose its own privacy standards.\textsuperscript{55} The second proposal was to allow outgoing TDF but to require entities that store or transmit data outside Canada to register with a governmental authority.\textsuperscript{56} The regulatory model proposed included the creation of a monitoring agency.\textsuperscript{57} The agency was to make no distinction between entities that use personally identifiable data and those that have no data concerning individuals. This option would have allowed Canada to gather more empirical data on the extent and substance of all outgoing TDF, but the Task Force considered registration too administratively cumbersome.

The third proposal was to require duplicate data files of outgoing data to be kept in Canada.\textsuperscript{58} Although this would have enabled individuals to gain access to and to correct information on duplicate files in Canada, it would not have diminished the possibility of abuse in the United States. In addition, the Task Force considered the duplicate file proposal even more cumbersome than the second proposal.\textsuperscript{59} The fourth proposal was to curtail all outgoing TDF.\textsuperscript{60} The Task Force objected to this extreme alternative on the bases of principle and practicality.\textsuperscript{61} In principle, any severe curtailment of TDF would affect the flow of information essential to international commerce, contrary to Canadian policies of free trade.\textsuperscript{62} As a practical matter, enforcement would be virtually impossible along the common border of the two countries.\textsuperscript{63} The Task Force found that these same objections also applied to fiscal or excise barriers

\textsuperscript{55} Id.
\textsuperscript{56} Id.
\textsuperscript{57} See J. Sharp, Regulatory Models: A Study of the Privacy and Computer Task Force 16-17 (undated); see also Privacy Report, supra note 22, at 159-60. The Task Force generally felt that TDF should somehow be monitored and recorded and that the use of data banks in Canada should be encouraged. Id. at 182-83. Compare id. with Novotny, supra note 3 (discussing the prohibitive expense of monitoring).
\textsuperscript{58} Privacy Report, supra note 22, at 171.
\textsuperscript{59} Id.
\textsuperscript{60} Id.
\textsuperscript{61} Id.
\textsuperscript{62} Id. at 172. The background study warned against the use of privacy as a reason for restricting TDF. C. Dalpen, supra note 52, at 27. The need to have unrestricted access to world markets for Canada's extensive natural resource products encourages Canadian industrial policies to support free trade. See generally Macdonald, Canadian Industrial Policy Objectives and Article III of GATT: National Ambitions and International Obligations, 6 Can. Bus. L.J. 385 (1982).
\textsuperscript{63} Privacy Report, supra note 22, at 172. The background study cited the many methods of transporting and communicating information across the border as precluding any meaningful enforcement. C. Dalpen, supra note 52, at 27. See also Novotny, supra note 3.
to TDF, while such barriers would do nothing to enhance the protection of privacy.\textsuperscript{64}

No TDF regulation was based on a Task Force proposal to protect individual privacy; in fact, one study concluded that existing United States laws provided better protection for Canadians than nonexistent Canadian law.\textsuperscript{65} The option which called for the development of a Canadian privacy law more restrictive than the United States privacy laws raised fears of inadvertently creating a United States “data haven” to which Canadian data operations would move in order to avoid the limitations and costs of the Canadian law.\textsuperscript{66} A “data haven” in the United States would severely undermine the development of a Canadian information industry; therefore, it was not unusual that subsequent legislation produced the Canadian Human Rights Act, which closely resembles United States privacy and fair information law.\textsuperscript{67} Although the Task Force addressed itself to all data banks, the Human Rights Act is applicable only to government data banks.\textsuperscript{68} In addition, the Human Rights Act failed to adopt any of the regulatory models suggested by the Task Force, but instead created an office of Privacy Commissioner to assist individuals in pursuing personal data inquiries regarding information in government data banks.\textsuperscript{69} In its present

\textsuperscript{64} Privacy Report, supra note 22, at 172.

\textsuperscript{65} C. Dalpen, supra note 52, at 25.

\textsuperscript{66} The term “data haven” has uncertain parentage. It appears to have been coined in Europe to describe the erosion of a high national standard of data privacy by the transfer of data into a country with a low standard of data privacy. See Hondius, Data Law in Europe, 16 Stan. J. Int’l L. 87, 102 (1980). Hondius derides the notion of data havens as unrealistic in a world where the majority of countries have no data protection laws at all. Id. at 103.

Canada has itself been a data haven in limited circumstances. It gave “refuge” to a program which allowed the American Council on Education to gather personally identifiable data in the United States on drug abuse without the fear of possible subpoena by United States courts. J. Carroll, supra, note 1, at 205.

\textsuperscript{67} Canadian Human Rights Act, 1977, ch. 33, 1976-1977 Can. Stat. 887 [hereinafter cited as Human Rights Act]. For the United States laws, see supra note 51. The most noteworthy common principles are the right of access to personal data and the right to correct erroneous personal data.

In a thinly veiled reference to the United States, Professor Carroll concluded that between two countries in “close proximity and with similar legal systems and social environment” there were three judicious control mechanisms over TDF: harmonization of the two sets of national laws, reciprocity agreements, and the establishment of minimal common general principles. J. Carroll, supra, note 1, at 206.

\textsuperscript{68} Human Rights Act, supra note 67, art. 50, para. 1. During the conference which created the Task Force, a prominent Canadian computer expert, Prof. J.M. Sharp, suggested that “every data bank should be subject to a licensing requirement,” regardless of what entity operates it. Conference on Computers, supra note 52, at 78.

\textsuperscript{69} Human Rights Act, supra note 67, art. 57. The Commissioner has no enforcement pow-
form the Human Rights Act does not affect TDF, although subsequent legislation could extend it to cover private sector data banks and TDF. The Privacy Commissioner may conduct studies of the feasibility of extending the principles of the Human Rights Act to non-governmental institutions; however, the Minister of Justice must initiate such a study.

III. EXISTING CANADIAN MODELS OF REGULATING TDF

Even though the Canadian Government is concerned about the macro and micro implications of TDF, only one Canadian law appears to be directed specifically at controlling TDF. However, there are other Canadian laws and regulatory schemes designed to obstruct other types of foreign economic and political intrusions. These statutes may serve as models or be used for further regulation of TDF.

A. Foreign Investment Review Act

The extent of foreign ownership of property and industry in a country may raise national anxiety over the extent of foreign control of its natural resources and economic affairs. Studies by the Canadian Government brought considerable public attention to foreign ownership in Canada. As a result, the Foreign Investment Review Act (the Act) was enacted to control the extent of foreign investment in Canadian industry. Non-Canadians, non-resident Canadians, or entities controlled directly or indirectly by such investors must apply to the Foreign Investment Review Agency (FIRA) for permission to acquire control over assets or shares in Canada and to invest in new endeavors in Canada. FIRA requires
the investor to establish that the acquisition or investment will be of significant benefit to Canada.\textsuperscript{76}

Although concern over foreign ownership was the impetus for the Act, decisions of FIRA and ultimately of the Federal Cabinet have indicated an increasing emphasis on inducing applicants to use goods and services of Canadian origin.\textsuperscript{77} This could affect TDF if applicants were required to use Canadian data processing and data bank facilities as a prerequisite to FIRA approval.

The experiences of Apple Computer and of Comshare, both United States corporations, show that the computer service industry is under particular pressure from FIRA. Apple Computer negotiated for ten months with FIRA and was granted approval to establish operations in Canada after making considerable concessions to suit Canadian economic goals, including commitments to use only Canadian goods and services, if available.\textsuperscript{78} Comshare sought FIRA approval of a plan to buy a controlling interest in CSL, Ltd., a Canadian computer company.\textsuperscript{79} Comshare committed itself to several future activities in favor of the Canadian information industry, including the promotion of Canadian data processing services.\textsuperscript{80} Ultimately, Comshare's application was denied as not meeting the "significant benefit to Canada" requirement.\textsuperscript{81} This activity by FIRA is consistent with specific recommendations of the Clyne Report to control foreign takeovers in the information industry.\textsuperscript{82}

Since the Act is being used in a manner which already has indirect effects on TDF and the information industry, it may be erroneous to refer to the Act as simply a model for TDF regulation. However, the structure of the Act may provide a direct method of

\begin{thebibliography}{99}
\bibitem{76} Id. § 2(2), at 620.
\bibitem{77} Macdonald, supra note 62, at 395.
\bibitem{78} Id. For the announcement of the approval by the Foreign Investment Review Agency, see FIRA, Release No. F-180 (Sept. 27, 1981). For the view of the United States business establishment, see Apple's 10-Month Tango With Canada Illustrates Investment Law's Problems, Wall St. J., Oct. 2, 1981, at 30, col. 1. Apple also committed itself to promoting Canadian peripherals that were compatible with the Apple product line. Id.
\bibitem{79} Communications Hearings, supra note 44, at 208.
\bibitem{80} Id. at 234-47.
\bibitem{81} Id. at 251.
\bibitem{82} Clyne Report, supra note 5, at 84. Recommendation 24(d) states that the government should act to "prevent foreign takeovers" in the data processing industry. Id. See supra notes 33-35 and accompanying text. FIRA has been roundly criticized by Canadian legislators for not being effective in controlling foreign takeovers in the data processing field which is 80% Canadian controlled, a statistic that some legislators do not want to see eroded. Commons Debates, 31st Parl., 1st Sess. 1904-08 (1979).
\end{thebibliography}
assessing the relative benefits of proposed transborder data links and of imposing conditions on data link establishment, such as a requirement for a certain quantity of data flow to go into Canada for processing and storage.

B. Business Records Protection Act

Nondisclosure laws are frequently enacted to promote domestic industries.83 In Canada the Business Records Protection Act (BRPA)84 is a provincial law enacted in response to attempts by the United States to extend its extraterritorial antitrust jurisdiction. Demands by United States agencies and courts that defendants in antitrust cases produce documents located in Canada induced the Ontario legislature to enact BRPA.85 BRPA prohibits the production of any document requested by a foreign tribunal unless such document is normally sent out of the province in the regular course of business;86 BRPA thus constitutes a statutory ban on the export of a specified class of information. It would not be inconsistent with the purpose of BRPA to prohibit the flow of business data to the United States for processing, particularly if United States courts determined that they should have access to all data in United States data banks. The potential for creation of a Canadian federal authority that can review and determine the content of TDF to the United States is evident in this type of legislation.

C. The Combines Investigation Act

The government of a country which hosts branches or subsidiaries of foreign-based multinationals may feel vulnerable when major


operational decisions are made outside its territory which could have far-reaching effects inside its territory.87 Most outgoing Canadian TDF is generated by branches or subsidiaries of multinationals based in the United States.88 The Canadian Government has expressed concern over how much of this data contributes to decisions which undermine its ability to control the Canadian economy and to maintain a competitive market.89 Accordingly, the Canadian Parliament considered amending Canadian antitrust legislation in order to control this TDF.90

The proposed amendment to the Combines Investigation Act91 had the same elements found in the Bank Act provisions discussed above. The amendment would have required entities subject to the Act to perform data processing in Canada or to store copies in Canada of all data authorized for extraterritorial processing. Ostensibly, this amendment would ensure the oversight function of the regulatory agency.

If enacted, this amendment would have had a considerable impact on Canadian TDF. However, both this amendment and the similar amendment to the Bank Act were rejected at the committee level in 1978.92 It is noteworthy that after the Clyne Report appeared in 1979, the Bank Act amendment was submitted and became law.93 It is conceivable that the amendment to the Combines Investigation Act could be reconsidered as well, particularly in a time of increasing economic protectionism.94

---

87 The French delegation to an Intergovernmental Bureau for Informatics conference on TDF said that TDF is "an index to and cause of the loss of power of States vis-à-vis multinationals companies." Progress on the TDF Front, 26 DATAMATION 126 (1980). For a general criticism of large multinational enterprises and their effects on host countries, see R. BARNET & R. MULLER, GLOBAL REACH (1974).

88 Peter Robinson of the Canadian Department of Communications asserted that 90% of outgoing Canadian TDF is information going to corporate headquarters in the United States. Progress on the TDF Front, supra note 87, at 126.

89 Robinson repeated Prof. Carroll's assertion that "[t]he country where the data are processed and stored tends to be the location where the decisions are made." Id. See supra note 20.

90 Ganley, Loosening the Telecom Link, 26 DATAMATION 149 (1980).


92 Ganley, supra note 90, at 150.

93 See supra note 36 and accompanying text.

94 Inflation, trade deficits, unemployment, and unsteady currencies have caused governments to resort to economic nationalism or protectionism. More familiar forms of protectionism such as the use of quotas and high tariffs have been rendered mostly obsolete by the General Agreement on Tariffs and Trade (GATT), opened for signature Oct. 30, 1947, 61 Stat. A-11, T.I.A.S. No. 1700, 55 U.N.T.S. 194. However, neoprotectorist barriers to trade have emerged in unfamiliar and even deceptive forms. See Green, The New Protectionism,
IV. A Comparative Evaluation of Other Regulatory Models

Canada could adopt models for TDF regulation from any of the many countries that are designing informatic strategies to better accommodate and exploit the effects of the information revolution. Control over TDF is a vital element of these strategies. Control is obtained through three regulatory mechanisms: data protection laws, telecommunications regulations, and absolute barriers. Each regulatory mechanism is evaluated below as to its usefulness in the Canadian context.

A. Data Protection

The philosophy of most of the West European legislation concerning TDF is that in order to best protect the individual, the state must protect the personal data relating to him, thus the term "data protection." Privacy does not play a dominant role; the

3 NW. J. INT’L & BUS. 1 (1981). There are over 2,000 anticompetitive barriers which serve to protect domestic businesses from foreign competition, particularly in service industries. OFFICE OF THE U.S. TRADE REPRESENTATIVE, U.S. GOVERNMENT INVENTORY OF SELECTED IMPEDIMENTS TO TRADE IN SERVICES (1981).

** Only a few countries other than Canada have actually begun to design policies dealing specifically with nonpersonal data flows; these countries are France, Japan, Sweden, and Brazil. Sauvant, supra note 16, at 370.

* See Hondius, supra note 66. Generally West European data protection laws have similar characteristics; all are designed to protect the information rather than to provide a case-by-case determination oriented toward protecting the individual as in the United States. HOUSE REPORT, supra note 9, at 38-40. See generally F. HONDIUS, EMERGING DATA PROTECTION IN EUROPE (1975).

word "privacy" is not even mentioned in these laws.\textsuperscript{97} Data protection laws regulate private as well as public data banks.

1. Common Data Protection

The structure of French data protection law is illustrative of European legislation.\textsuperscript{98} Most European legislation provides for a regulatory agency. In France the regulatory agency is the National Data Processing and Liberties Commission (Data Commission). Any entity that wishes to collect, process, store, or transmit data must register with the Data Commission.\textsuperscript{99} At the time of filing, an applicant must indicate whether its activity will involve any TDF; if the activity does involve TDF, the Data Commission has authority to curtail the activity or refuse to grant approval.\textsuperscript{100} One distinguishing feature of the French law is the criminalization of managerial decision-making about individuals based solely on computer information.\textsuperscript{101} This provision is limited by jurisdictional considerations, but it could conceivably be used to prohibit further TDF between a French branch of a foreign-based multinational and its headquarters.

Proponents have touted European data protection legislation as a "rare example of a branch of law concerned almost solely with a moral issue."\textsuperscript{102} The protection of principles of privacy is an admirable impetus for legislation, but the creation of an administrative body with significant power to apply and interpret the regulations exposes the moral issue to significant erosion by economic and political forces. The French have significant economic interests at stake and have been outspoken in their intention to control French-related TDF in order to protect these interests.\textsuperscript{103} They

\begin{itemize}
\item\textsuperscript{97} Hondius, \textit{supra} note 66, at 95. This is attributed to different notions of privacy in Europe. Privacy has generally evaded definition, but excluding others from interference in one's personal affairs is not an important issue in the modern European welfare state. \textit{Id.}
\item\textsuperscript{98} French Data Processing Act, \textit{supra} note 96.
\item\textsuperscript{99} \textit{Id.} art. 15.
\item\textsuperscript{100} \textit{Id.} art. 19.
\item\textsuperscript{101} \textit{Id.} art. 2. According to Louis Joinet of the French Ministry of Justice, this is the "beginning of legislation on social profiles." A United States commentator sees this legislation as an "attack on automation per se" rather than an improvement in personal privacy protection. Grossman, \textit{Transborder Data Flow: Separating the Privacy Interests of Individuals and Corporations}, 4 Nw. J. Int'l L. & Bus. 1, 25 (1982).
\item It is estimated that about 5\% of total TDF involves personal data. Sauvant, \textit{supra} note 16, at 370.
\item\textsuperscript{102} Hondius, \textit{supra} note 66, at 110.
\item\textsuperscript{103} "Information is power and economic information is economic power." Statement by
have developed a *télématique* plan which stresses the use of various selective barriers to gain advantages over the United States in the information market. In a period of rising protectionism, the French could use the Data Commission to implement selective barriers to TDF pursuant to their *télématique* plan.


An understanding of the French and West European data processing markets reveals the basic economic issues involved in the development of informatic strategies and of laws tailored to promote these strategies. Europe is a battleground for the control of information markets. Thirteen United States firms are among the top 25 competitors. Of these, IBM dominates the market with the largest single share of 34.8%. The European Community (EC) is concerned over the future of Europe's own computer industry and has threatened IBM with antitrust litigation. Ironically, IBM has 13 plants in six countries in the EC that produce 95% of the products sold there, and IBM is among the top 10 taxpayers in Europe. West European firms have succeeded in controlling 60% of their own market; it is not coincidental that France, West Germany, the United Kingdom, and Italy represent 66% of the total data processing market in Europe. Each of these countries has a major domestic computer and data processing company which receives preferential treatment by its government; respectively these are CII-Honeywell Bull, Siemens, ICL, and Olivette. See Tracking Europe's Top 25, 27 DATAMATION 36 (1981); Going Global, 26 DATAMATION 130 (1980); IBM's Other Antitrust Battle, N.Y. Times, June 19, 1982, at N23, col. 3.

105 Europe's overall economic position has begun to decline, and various EC member states have recognized the need to offset declines in traditional industries while moving into the evolving information industry. See supra note 94. The EC's success in the information industry hinges on control by member states of their respective markets; presently Europe supplies only 16% of the world market compared to 70% provided by the United States. There are substantial fears that the EC will be unable to take advantage of its collective economies of scale because of inefficient and non-uniform telecommunications and the protectionism of individual members. See Commission of the European Communities, European Society Faced With the Challenge of New Information Technologies, Doc. COM(79) 650 final (1979) (the Dublin Report). For an article describing the teleinformatic strategy of the Commission of the European Communities, see Ramsey, Europe Responds to the Challenge of the New Information Technologies: A Teleinformatics Strategy for the 1980's, 14
The closest approximation to data protection law in Canada is the Canadian Human Rights Act, which arises from a fundamentally different legal philosophy.\(^{106}\) Common law countries traditionally view legislation as necessary only if a demonstrable mischief exists which customary law or judicial case law cannot remedy.\(^{107}\) The contrast in legal philosophies is manifested in the differing types of enforcement mechanisms designed to reduce data abuse. Canadian control over data abuse is both internal and external. Internally, ultimate "in-house" supervision is conferred on the ministers of the Crown. Externally, control is subjective; the data subject must initiate any controlling activity. In contrast, European data protection law establishes an external objective rather than subjective controlling mechanism; a tribunal or board regulates all data processing and initiates enforcement activities.\(^ {108}\) The role of the Canadian Privacy Commissioner is somewhat analogous to that of a European data protection agency, but the Privacy Commissioner has a limited ombudsman duty and no enforcement powers equivalent to those of a European data protection agency.\(^ {109}\)

Canadian concerns over the privacy of personal data mainly emerged from the potential of governmental abuse,\(^ {110}\) making it doubtful that the Canadian Human Rights Act would be expanded to give a government bureaucracy as much power as a European data protection board. It is suggested that the concept of data pro-

---

1983] CANADIAN TRANSBORDER DATA FLOWS 845


106 See supra notes 67-71 and accompanying text.

107 Hondius, supra note 66, at 97.


109 See supra notes 69-71 and accompanying text.

110 M. Brown, B. Billingsley, & R. Shamai, Privacy and Personal Data Protection 34 (Research Pub. 15, prepared for the Commission on Freedom of Information and Individual Privacy, 1980) [hereinafter cited as M. Brown]; but cf. D. Weissstub & C. Gotlieb, supra note 49, at 3 (asserting that the Canadian Government was merely responding to the anxiety in other countries).
tection is so fundamentally different from the privacy concepts embodied in the Canadian Human Rights Act that the Act would not be a major vehicle for the codification of the European data protection concept. It should be noted that regulatory models similar to data protection were suggested by the Canadian privacy studies.\textsuperscript{111} The major factors cited in rejecting the European model of regulation were problems with enforcement and particularly fears of allowing the emergence of a United States "data haven," because less restrictive United States laws would induce the private data processing industry to leave Canada.\textsuperscript{112}

2. Corporate Data Protection

There is presently a growing trend in Europe to include corporations, trade unions, and other organizations as protected entities under data protection laws.\textsuperscript{113} This has been done in Denmark. Danish law\textsuperscript{114} created a Data Surveillance Authority with explicit authority to approve or disapprove the transmission of data to any point outside Denmark.\textsuperscript{115} The authority can ban all TDF to any country that it determines is deficient in protective legislation.\textsuperscript{116}

Under this law corporations theoretically have access to data concerning their operations that may be contained in the data banks of a competing corporation.\textsuperscript{117} This type of legislation has been condemned by some commentators as blatantly anticompetitive and designed solely to aid domestic industries.\textsuperscript{118}

It is difficult to envision the adoption of this model by Canada. The Canadian approach to privacy has developed with the rights of individuals as a dominant concern. The interests of corporations

\textsuperscript{111} See supra notes 57 and 62 and accompanying text.
\textsuperscript{112} Id. The Task Force concurred in the opinion that the principal problem was not one of privacy. PRIVACY REPORT, supra note 22, at 171.
\textsuperscript{113} See Grossman, supra note 101. The West European statutes, which include legal persons, were passed in Austria, Denmark, Norway, and Luxembourg. See supra note 96. The French data protection bill originally extended to legal persons but that provision was defeated by a strong pro-business lobby. Interview with Louis Joinet, Member of the French Commission on Liberties, Files and Data Processing, in Paris (Dec. 19, 1978), quoted in M. BROWN, supra note 110, at 133.
\textsuperscript{114} Danish Private Registers Act, supra note 96, part 1, § 1.
\textsuperscript{115} Id. § 3(2).
\textsuperscript{116} Id. § 21(2).
\textsuperscript{117} Grossman, supra note 101, at 3.
\textsuperscript{118} "Any semblance of an attempt to protect individual privacy vanishes and is replaced by a government mandate to forage among private corporate data bases under the rubric of protecting other corporation's privacy. This is not privacy protection but rather a heavy handed form of commercial regulation." Id. at 26.
are purely economic and incompatible with the same values that give rise to protecting individual privacy.\textsuperscript{119} In addition, present Canadian privacy law gives the right of access only to federal data systems, thereby negating the threat of one corporation having access to the data banks of another.\textsuperscript{120}

One commentator suggests that the potential for the emergence of a Canadian corporate privacy statute can be found in the recommendations of the Task Force on Privacy and Computers.\textsuperscript{121} However, to adopt such a statute, the Canadian Government would have to overcome not only substantial differences in legal philosophy but also in economic policy. This type of statute would cause multinationals to keep their important data outside the country and could induce many Canadian companies to do likewise.\textsuperscript{122}

B. \textit{Telecommunications Regulations}

Many industrialized nations have developed telecommunications regulations which impede TDF.\textsuperscript{123} Unlike data protection legislation, these regulations purposely impede commerce without the pretense of protection of privacy.\textsuperscript{124} Most of these regulations are promulgated by state-owned communications monopolies, Postal Telephone and Telegraph authorities (PTTs), which regulate common carriage to and from other countries either through terrestrial line, transoceanic cable, or by satellite.\textsuperscript{125} PTTs can impose a variety of restrictive requirements on the use of their telecommunications networks for TDF, ranging from excessive rates\textsuperscript{126} to disap-

\textsuperscript{119} For an analysis of the values which gave rise to notions of individual privacy, see id. at 12-18.

\textsuperscript{120} See Human Rights Act, supra note 67.

\textsuperscript{121} Grossman, supra note 101, at 29. Grossman points to the proposal that a duplicate set of data files be maintained in Canada. See supra note 58 and accompanying text.

\textsuperscript{122}See supra note 66 and accompanying text.


\textsuperscript{125} "Common carriage" refers to two-way communications services. In the United States the regulatory authority is the Federal Communications Commission (FCC). Communications Act of 1934, 47 U.S.C. §§ 201-224 (Supp. III 1979). Unlike the FCC, PTTs provide the services and related equipment in addition to regulating use. Many of the PTTs have considerable economic and political power. See Ramsey, supra note 105, at 262-64.

\textsuperscript{126} The cost of using many telecommunications networks in Europe is two to five times higher than in the United States, and often there are particularly high rates charged for interconnections between PTTs. Recently, PTTs have been trying to switch from fixed-cost dedicated lines to usage-sensitive lines which will be considerably more expensive. See \textit{House Report}, supra note 9, at 13; Markoski, supra note 123, at 298-301.
proval of equipment interfaces.\textsuperscript{127}

As both the regulator and the regulated, a PTT has the authority to further its own interests and to subrogate the interests of others.\textsuperscript{128} For example, in Japan, the providers of the domestic and international telecommunications services are two separate entities, but both are subject to a central authority.\textsuperscript{129} The domestic telecommunications provider is also the largest supplier of data processing services in Japan,\textsuperscript{130} so it is probably no accident that the international provider has imposed procedural regulations and contractual conditions making it difficult for foreign suppliers of data processing services to lease outgoing communications lines.\textsuperscript{131} Presently, the European PTTs appear to be acting in concert to exclude non-European TDF.\textsuperscript{132} Purposefully or not, tactics such as these have made it either too costly or technically difficult to promote TDF.

The use of telecommunications regulations in Canada to impede TDF has been considered above. The Clyne Report suggests the use of telecommunications systems design standards that will facilitate the adoption of Canadian technology while limiting use of foreign technology.\textsuperscript{133} In one instance, regulating authority was used to deny a point-to-point satellite link between a data base in

\begin{footnotes}
\item[127] PTTs will often have technical standards or equipment leasing requirements which must be met in order to connect a computer to the telecommunications network. See House Report, supra note 9, at 14-15. One company solved its problems with PTTs by transmitting the data to a house on one side of the border where it was recorded on a reel of tape, then an employee walked across the border with the tape and transmitted the data to its final destination. Going Global, supra note 104, at 136.

In Canada, as in the United States, the attachment of subscriber-provided terminal equipment is permitted. Canadian Radio-Television and Telecommunications Commission (CRTC) Decision No. 80-13 (Aug. 5, 1980); see Markoski, supra note 123, at 291 n.14.

\item[128] Id.

\item[129] The Ministry of Posts and Telecommunications oversees Kokusai Denshin Denwa (KDD), a private company that provides international services, and Nippon Telegraph and Telephone, the domestic carrier. Id. at 294 n.29.

\item[130] Id.

\item[131] Control Data and Tymshare, two such data processing suppliers, have been restricted severely by the terms of their contractual arrangements with KDD; in addition, KDD subjected the applicant’s software and hardware to such a detailed inspection that there was a suspicion that KDD was trying to acquire technology through the use of the inspection procedures. See International Data Flow: Hearings Before a Subcomm. of the House Comm. on Gov’t Operations, 96th Cong., 2d Sess. 21, 63 (1980) [hereinafter cited as House Hearings].

\item[132] This system, known as EURONET, costs $5 per hour for computer use by EC members and $20 to $30 per hour for access by non-EC members. Id. at 63; see also Communications Hearings, supra note 44, at 137-49.

\item[133] Clyne Report, supra note 5, at 73.
\end{footnotes}
the United States and a customer in Vancouver.\textsuperscript{184}

In spite of these examples, it is suggested that Canada will not use telecommunications regulations to control TDF. Both the nature of the telecommunications network and the nature of the legal structure which regulates the network make it difficult, if not impossible, for Canada to implement significant regulatory impediments. The Canadian telecommunications system is very dissimilar from a PTT. In Canada there are numerous private organizations providing telecommunications services and related equipment regulated on a carrier-by-carrier basis by several administrative agencies at both the provincial and federal level.\textsuperscript{185} No single agency has sole jurisdiction over international rates. The agency asserting jurisdiction will usually negotiate with its foreign counterpart.\textsuperscript{186} In addition to the difficulty of formulating regulatory schemes, the Canadian federal power to legislate and regulate in the area of telecommunications is not entirely unquestioned. The jurisdiction to review the uses of specific point-to-point connections is limited and confusing.\textsuperscript{187}

\textsuperscript{184} Canadian authorities denied the Vancouver real estate board permission to use the multiple listing services of a United States based subsidiary of McGraw-Hill, Inc. See House Report, supra note 9, at 17; House Hearings, supra note 131, at 671. When Satellite Business Systems, a United States corporation, applied to the FCC for permission to link its transmission service to several large Canadian cities, there was a motion put forth in the House of Commons to ensure that Canadian authorities would not grant permission if the FCC granted permission. The motion did not pass and eventually Canadian authorities and the FCC reached agreement on the matter. Commons Debates, 32d Parl., 2d Sess. 6909 (1981).

There is concern over financial losses that Canada could incur if United States business in Canada used direct satellite communications to bypass the Canadian telecommunications system. O. Ganley, The United States-Canadian Communications and Information Resources Relationship and Its Possible Significance for Worldwide Diplomacy 15 (Program on Information Resources Policy No. P-80-2, 1980).

\textsuperscript{185} Branching Out, supra note 5, at 6. Clyne Report, supra note 5, at 23.

\textsuperscript{186} Clyne Report, supra note 5, at 9.

The regulatory framework itself may not prevent the implementation of restrictions, but the numerous open telecommunications circuits connecting Canada and the United States make it virtually impossible to stop data flow across the border.138

C. Absolute Barriers

Brazilian informatics strategy is simple. Brazil bars all computer products and data processing importation in those markets which domestic information industries are able to service.139 Information is perceived as a "natural" resource which multinationals are trying to exploit.140 It has been argued that if foreign multinationals corner the information markets in developing nations, these nations will effectively be excluded from the emerging economic order which is based on information. The issue centers on the threat of economic dependence of developing nations on the developed nations.141 In order to avoid this scenario the Brazilian Government has created regulatory authorities that exercise absolute con-

---


Conflicts between the federal and provincial governments slow the development of a coherent policy and reflect conflicting interests in the establishment of economic links with the United States. Information Revolution, supra note 30, at 89.

138 Conference on Computers, supra note 52, at 88.


141 Saur, supra note 11, at 138. Saur, then Executive Secretary for CAPRE, the Brazilian Informatics Coordinating Committee, wrote that the key is "to develop a local capacity for computer power, to confine data within borders, and to provide protection for those local development efforts." Id. Saur believes that without these barriers to free data flow it would be impossible for developing nations to compete at an equitable level with the developed nations. It has been estimated that without CAPRE regulation, imports in 1978 would have exceeded 300 million dollars. Bortnick, supra note 139, at 341 n.50.

Brazil's computer market is the world's eighth largest, with sales of $780 million in 1981. Domestic restrictions on computers and related services have driven costs up while enabling Brazil to be largely self-reliant in the small computer field. The five largest producers of computers in that country reported extensive losses in 1981 as a result of the uncompetitive costs of their computers. See Brazil's Ban on Small Computers, Wall St. J., Oct. 4, 1982, at 26(e), col. 3.
trol over TDF by regulating the equipment that can be imported and by requiring registration and approval of current and potential TDF.143

Unlike Brazil, information-poor developing countries lack a sufficient internal market to develop a domestic information industry; therefore, they are at various stages of securing access to and control over data collected inside or transmitted across their borders.143

Canada does not seem to fit the category of a developing country rich or deficient in information, but Canadian rhetoric in international discussions on TDF has been compared to that of developing countries.144 This is probably because the Canadians and the developing countries share similar concerns over cultural domination and issues of economic dependence versus interdependence.145

The potential for an absolute barrier to outgoing TDF in order to protect a nascent Canadian information industry is minimal at best. The Canadian information industry is already sufficiently developed to service the Canadian market, particularly at the microcomputer level. That market, however, is too limited for an adequate return on investment,146 so the Canadian information industry has had to be increasingly competitive in world markets.147

An absolute barrier raises the specter of reciprocal action on the part of other countries which may have important markets for the Canadians.148 In addition, the inflow of the latest information technologies which accompanies TDF is vital for the development of the Canadian information industry.149 Thus, until the Canadians

---

143 Brazilian Executive Decree No. 84.067 (Oct. 8, 1979). For a detailed discussion of the regulatory framework of CAPRE, see United Nations Centre on Transnational Corporations, supra note 139. See also Bortnick, supra note 139, at 340. For a discussion of the problems these regulations cause in the industry, see Going Global, supra note 104.

144 See House Report, supra note 9, at 31; Pipe, supra note 2.

145 "The Canadians spoke almost as Third Worlders at the 2nd World Computing Services Congress..." Going Global, supra note 104, at 133.

146 See Grossman, supra note 101, at 18.

147 Branching Out, supra note 5, at 76.

148 "Two or three of the largest" Canadian data processing companies exported from 10 to 20% of their services to the United States alone. Ganley, supra note 90, at 150. For a review of the extent of the Canadian data processing industry's activities abroad, see 27 Datamation 40 (1981).

149 Canada has been very interested in promoting Canadian-owned two-way television technology in North America. See Can. Dep't of Communications, Telidon (1979). For a discussion of the use of reciprocity in response to barriers to TDF, see Markoski, supra note 123, at 320.

146 It is estimated that the invisible inflow of United States technology into Canada in 1976 was between $600 and $700 million. Information Revolution, supra note 30, at 70.
are able to provide their own research and development, they will have to continue to depend on TDF in order to stay competitive in this rapidly changing industry.  

V. CANADIAN/UNITED STATES RELATIONSHIP AND TDF

Almost all Canadian TDF originates or terminates in the United States, so although Canada is actively promoting multilateral

---

$ See supra notes 87-89. Canadian subsidiaries of foreign companies are often dependent on parent companies for research and development and attendant technologies. This results in a relatively low level of research and development performed by foreign-controlled businesses in Canada.

<table>
<thead>
<tr>
<th>Company Name</th>
<th>Ownership</th>
<th>1980</th>
</tr>
</thead>
<tbody>
<tr>
<td>IBM Canada Ltd.</td>
<td>U.S.</td>
<td>1,506.0</td>
</tr>
<tr>
<td>Northern Telecom Ltd.</td>
<td>Can.</td>
<td>2,055.0</td>
</tr>
<tr>
<td>Digital Equipment of Canada Ltd.</td>
<td>U.S.</td>
<td>163.7</td>
</tr>
<tr>
<td>Control Data Canada Ltd.</td>
<td>U.S.</td>
<td>162.6</td>
</tr>
<tr>
<td>NCR Canada Ltd.</td>
<td>U.S.</td>
<td>176.6</td>
</tr>
<tr>
<td>AES Data Ltd.</td>
<td>Can.</td>
<td>155.0</td>
</tr>
<tr>
<td>Sperry Rand Canada Ltd.</td>
<td>U.S.</td>
<td>124.0</td>
</tr>
<tr>
<td>Philips Data Systems Ltd.</td>
<td>Netherlands</td>
<td>100.3</td>
</tr>
<tr>
<td>Honeywell Ltd.</td>
<td>U.S.</td>
<td>260.5b</td>
</tr>
<tr>
<td>Burroughs Business Machines Ltd.</td>
<td>U.S.</td>
<td>105.0b</td>
</tr>
<tr>
<td>Canada Systems Group (EST) Ltd.</td>
<td>Can.</td>
<td>77.9</td>
</tr>
<tr>
<td>Datacrown Inc.</td>
<td>Can.</td>
<td>68.6</td>
</tr>
<tr>
<td>Hewlett-Packard (Canada) Ltd.</td>
<td>U.S.</td>
<td>99.4b</td>
</tr>
<tr>
<td>Xerox of Canada Ltd.</td>
<td>U.S.</td>
<td>484.2</td>
</tr>
<tr>
<td>Mitel Corp.</td>
<td>Can.</td>
<td>43.4</td>
</tr>
<tr>
<td>Amdahl Ltd.</td>
<td>U.S.</td>
<td>43.0</td>
</tr>
<tr>
<td>B.C. Systems Corp.</td>
<td>Can.</td>
<td>40.2</td>
</tr>
<tr>
<td>Computel Systems Ltd.</td>
<td>Can.</td>
<td>38.1</td>
</tr>
<tr>
<td>I.P. Sharp Associates Ltd.</td>
<td>Can.</td>
<td>35.5</td>
</tr>
<tr>
<td>MAI Canada Ltd.</td>
<td>U.S.</td>
<td>35.0</td>
</tr>
<tr>
<td>Memorex Canada Ltd.</td>
<td>U.S.</td>
<td>32.3</td>
</tr>
<tr>
<td>Storage Technology of Canada</td>
<td>U.S.</td>
<td>28.8</td>
</tr>
<tr>
<td>Gandalf Data Communications Ltd.</td>
<td>Can.</td>
<td>26.4</td>
</tr>
<tr>
<td>Canadian General Electric</td>
<td>U.S.</td>
<td>N/A</td>
</tr>
<tr>
<td>Olivetti Canada Ltd.</td>
<td>Italy</td>
<td>N/A</td>
</tr>
</tbody>
</table>

b Estimated by Evans Research Corporation

For a summary of Canadian participation in international fora on TDF, see Can. Dep't of Communications, Annual Report (1982).

International attention has been recently focused on TDF; however, only two interna-
agreements on TDF, the primary emphasis must necessarily be bilateral with the United States. Numerous issues emerge between the two countries due to the pervasive scope of their cultural, political, and economic interaction. Many of these issues can be solved quickly, routinely, and amicably through the use of extensive channels of communications which link almost all levels of the two governments. TDF, however, is an issue that is probably not capable of resolution in the short term because it is germane to sweeping fundamental changes in the economies of both countries that will continue to manifest themselves for some time. Even if not solvable in the short term, the issue of TDF does require immediate attention in order to ameliorate its possible negative effects on Canadian-United States relations and economies and to prevent reactive legislation which would distort the free flow of data and its positive consequences for Canada and the United States. Since 1980, periodic informal consultations have been underway between Canadian and United States communications officials.

In the long term, the free flow of information, much like free trade, would probably benefit both countries. But in the interim, the vast network of informal arrangements which typifies Canadian-United States relations can be put to work resolving conflicts as they arise. There will probably be an economic integration in

---


155 Unfortunately, the United States is poorly prepared to deal with the problems of TDF. See Spero, Information: The Policy Void, 48 Foreign Pol'y 139 (1982).

156 For a discussion of the possibilities of economic integration, see generally Dean Rusk Center, supra note 152.

157 Dean Rusk Center, supra note 152, at 57. See generally Canadian Parliament Standing Senate Committee on Foreign Affairs, Canada-U.S. Relations, vols. I-IV
the information industries of the two countries; therefore, it is in Canada's interest to continue to target legislation and to use FIRA to protect vulnerable sectors of the Canadian economy from trauma during the transition.

After a de facto economic integration has taken place, a formal Canadian-United States agreement could develop from stabilized informal arrangements reflecting mutual benefit and a consensus on TDF. The smoothness of this transition will depend on the continuing amicability of Canadian-United States relations. Recently, however, internal cultural and political factors coupled with domestic and international economic policies have eroded the foundations of some mutual interests and caused the countries' respective policies to become more divergent. Thus, a smooth transition will require United States negotiators to be aware of and sensitive to genuine Canadian concerns over the use of TDF to facilitate United States dominance in the information revolution.

VI. Conclusion

The information revolution, with its attendant increasing trans-border data flow, is a two-edged sword. While holding out the promise of a mutually beneficial interconnected world, TDF threatens some of the basic notions about nation-states. TDF makes present legal systems obsolete by raising issues that cut across traditional institutional frameworks. Canada is actively trying to construct a legal framework that recognizes these issues. But as Canada moves toward a comprehensive informatics policy it faces a Hobson's choice: unregulated TDF could pose a threat to economic independence while overregulation could estrange Canada from current technologies and emerging potential world markets. As a result Canadian policy-makers have left the flow of data more or less unchecked.

Canada can choose from a variety of domestic and foreign models to regulate TDF; however, the present developmental trend of a Canadian legal framework for TDF either targets legislation at key sectors such as banking or uses the FIRA. This trend may effectively protect vulnerable sectors of Canadian industry and promote the information industry, while causing few political repercussions at home or abroad. In Canada's effort to promote interdependence rather than dependence, stimulation of domestic research and de-

(1979).
Development and bilateral agreements on TDF may prove more fruitful than domestic legislative impediments.

Douglas Yarn