

THE DEVELOPMENT OF CANADIAN LAW ON TRANS-BORDER DATA FLOW

INTRODUCTION

The transfer of information across political and cultural boundaries is a phenomenon which predates written language.¹ 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.² 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.³ TDF has prompted many countries to initiate studies and to enact legislation to control or impede TDF.⁴ Cana-

¹ J. CARROLL, *THE PROBLEM OF TRANSNATIONAL DATA FLOW* 201 (undated). The flow of information is recognized as a vital element in the development of ideas and the evolution of cultures. See generally McNEILL, *THE RISE OF THE WEST* (1963). Cf. *ETHNIC GROUPS AND BOUNDARIES* (F. Barth ed. 1969) (field studies of various ethnic groups that illustrate how boundaries persist despite transboundary flow of information and personnel).

² Pipe, *National Policies, International Debates*, 29 J. COM. 114 (1979).

³ Novotny, *Transborder Data Flow Regulation: Technical Issues of Legal Concern*, 3 COMPUTER/L.J. 105, 107 (1982).

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.

For symposia on TDF, see *Transborder Data Flow: New Frontiers—or None?*, 29 J. COM. 113 (1979); *Transborder Data Flow*, 16 STAN. J. INT'L L. 1 (1980).

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).

⁴ Eger, *Emerging Restrictions on Transnational Data Flows: Privacy Protection or Non-Tariff Trade Barriers?*, 10 LAW & POL'Y INT'L BUS. 1055 (1978). The Expert Group on Transborder Data Flows of the Organization for Economic Cooperation and Development Working Party on Information, Computer, and Communications Policy published a report derived from a study by the Norwegian Research Center for Computers and Law concluding

dian studies have raised considerable anxiety over the possible effects of TDF,⁵ 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,⁶ 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.⁷ 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-

that existing international law inadequately addresses the major considerations emerging from TDF. Organization for Economic Cooperation and Development, Expert Group on Transborder Data Flows, Legal Issues Related to Transborder Data Flows, OECD Doc. DSTI/ICCP/81.9 (1981).

⁵ CONSULTATIVE COMMITTEE ON THE IMPLICATIONS OF TELECOMMUNICATIONS FOR CANADIAN SOVEREIGNTY, DEP'T OF COMMUNICATIONS, TELECOMMUNICATIONS AND CANADA (1978) [hereinafter cited as Clyne Report]. The Clyne Report is the result of the Canadian inquiry into the far-reaching effects of the information technology starting with DEP'T OF COMMUNICATIONS, INSTANT WORLD: A REPORT ON TELECOMMUNICATIONS IN CANADA (1971). A large part of the Clyne Report seems to be derived from an earlier in-depth study, 2 CANADIAN COMPUTER/COMMUNICATIONS TASK FORCE, BRANCHING OUT, DEP'T OF COMMUNICATIONS (1972) [hereinafter cited as BRANCHING OUT].

Canada is one of the first countries to make a comprehensive examination of the possible effects of TDF and the information revolution. Canada is also one of the few countries that have attempted to calculate the economic costs, such as opportunity loss, job loss, reduction in job creation, and the eventual effect on balance of payments. All studies on TDF sponsored by the Canadian Government contain a disclaimer denying any direct relationship between the study and government policy.

⁶ Interview with unnamed officials of the Canadian embassy, cited in Feldman & Garcia, *National Regulation of Transborder Data Flows*, 7 N.C.J. INT'L L. & COM. REG. 1, 21 (1982).

⁷ For a complete overview of competing policies in TDF issues, see Novotny, *Transborder Data Flows and International Law: A Framework for Policy-Oriented Inquiry*, 16 STAN. J. INT'L L. 141 (1980).

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).⁸ Various barriers to international information flow are emerging, particularly in the area of computer-to-computer communications, TDF.⁹ The impact of barriers to TDF is primarily economic, particularly when an industrialized state creates these barriers.¹⁰ 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.¹¹

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.¹² Traditional services, particularly the information-dependent services such as banking and transportation, have quickly adapted the new information technology to their information needs.¹³ 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.¹⁴ Centralization allows

⁸ 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.

⁹ See HOUSE COMM. ON GOV'T OPERATIONS, INTERNATIONAL INFORMATION FLOW: FORGING A NEW FRAMEWORK, H.R. REP. NO. 1535, 96th Cong., 2d Sess. (1980) [hereinafter cited as HOUSE REPORT].

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 Pipe, *supra* note 2, at 114.

¹³ Arakaki, *Telecommunications and Information Services*, 5 BUS. AM. 11 (1982).

¹⁴ 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.¹⁵ Using unimpaired TDF, information-intensive services can operate worldwide, competing more effectively with indigenous services.¹⁶

International trade in goods also has become more efficient. A

But see Berman, A Note Against Centralized Staff, DATAMATION, May 1970, at 28, where decentralization is arguably more beneficial.

¹⁵ HOUSE REPORT, *supra* note 9, at 24.

¹⁶ 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 \$40 billion in 1981. Wall St. J., Feb. 10, 1982, at 54, col. 1. Domestically, the service sector accounts for 65% 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 useable 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).

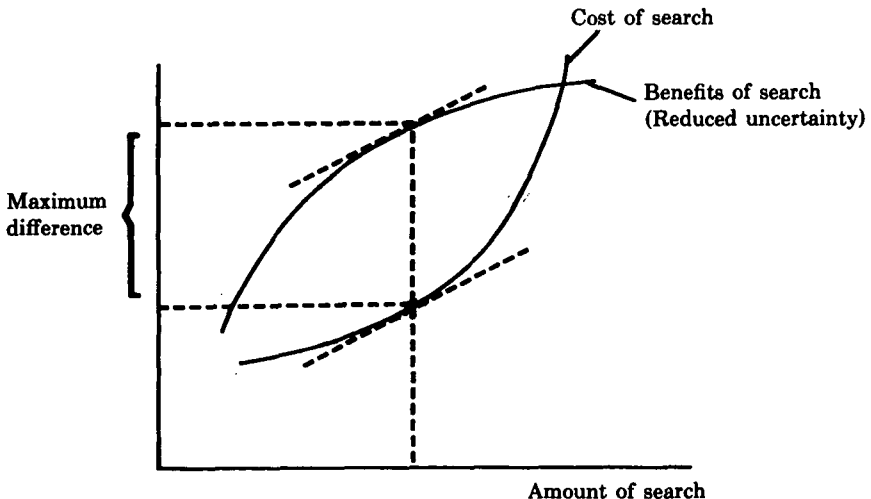


Diagram illustrating the relationship between the cost of obtaining information and the resulting benefits. Source: *Id.* at 111. The United Nations Centre on Transnational Corporations is attempting to address these concerns. See *Transnational Corporations and Transborder Data Flows: Programme of Work and Progress Report*, U.N. Doc. E/C.10/1982/12 (1982).

symbiotic relationship exists between goods and services;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.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.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.²⁰

II. CANADIAN TDF

Although there are other controversies over information resources that raise various non-economic issues,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.²² To participate

¹⁷ See Krommenacker, *Trade-Related Services and GATT*, 13 J. WORLD TRADE L. 510 (1979).

¹⁸ *Id.* See generally Robinson, *A New Economic Alliance—Services and Manufacturing*, FINANCIER, Mar. 1981, at 43.

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.

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.

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.

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.²³

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.²⁴

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.²⁵ With this recommendation in mind the Canadian Government has sought to identify those interests which compel resort to a legal response to TDF.

²³ 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.

²⁴ 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).

²⁵ 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."²⁶ A study, commissioned by the government and prepared by the Consultative Committee on the Implications of Telecommunications for Canadian Sovereignty,²⁷ 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.²⁸ The study, popularly known as the Clyne Report, concluded that Canadian sovereignty depends on control over telecommunications and TDF.²⁹ The intensely nationalistic tone of the Clyne Report caused considerable public reaction and obscured the primary economic issues behind the generalized language of "sovereignty."³⁰

²⁶ Gotlieb & Katz, *Work Paper on Issues Associated With the Transborder Flow of Personal Information*, 9 L. & COMPUTER TECH. 2, 7 (1976).

²⁷ Clyne Report, *supra* note 5.

²⁸ *Id.* at 2. The Clyne Report analogized the development of the information technology with the industrial revolution and invariably concluded that Canada must act to assure a place in the resulting new international economic order. *Id.* at 58.

²⁹ *Id.* at 64. For a brief and readable overview of Canada's present national identity problems, see *Canada*, 6 WILSON Q. 45 (1982). See also J. DICKEY, *CANADA AND THE AMERICAN PRESENCE* (1975).

The Clyne Report defined "sovereignty" as the "ability of Canadians . . . to exercise control over the direction of economic, social, cultural, and political change." Clyne Report, *supra* note 5, at 1. Such a broad definition is inapplicable in an interdependent world; therefore, it is probably more accurate to define "sovereignty" as "the residuum of power which it possesses within the confines laid down by international law." J. STARK, *AN INTRODUCTION TO INTERNATIONAL LAW* 113 (1977). Regardless of the definition, some commentators accept the notion that a state's control over information that reaches its citizens has long been a prerequisite of national sovereignty. Bigelow, *Transborder Data Flow Barriers*, 20 JUR. J. 8 (1979). But see Universal Declaration of Human Rights, G.A. Res. 217A (III), U.N. Doc. A/810, at 71, art. 19 (1948) ("everyone has the right to freedom of opinion and expression; this right includes freedom to impart information and ideas through any media and regardless of frontiers"). For a complete discussion of the international legal principles which support the free flow of information, see Feldman, *Commercial Speech, Transborder Data Flows and the Right to Communicate Under International Law*, 17 INT'L LAW. 87 (1983).

Other commentators feel that sovereignty is an "internationally respected shibboleth" for creating barriers to TDF for strictly economic motives, thus making it difficult to clarify and negotiate the core issues. See, e.g., Eger, *The Global Phenomenon of Teleinformatics: An Introduction*, 14 CORNELL INT'L L.J. 203, 231 (1981).

³⁰ A later Canadian study approaches these problems of sovereignty as essentially economic. COMMUNICATIONS ECONOMICS BRANCH, DEP'T OF COMMUNICATIONS, *THE INFORMATION REVOLUTION AND ITS IMPLICATIONS FOR CANADA* (1980) [hereinafter cited as *INFORMATION REVOLUTION*]. The emphasis on the economic realities of TDF is consistent with studies that

The Clyne Report recommended the development of a Canadian informatics policy.³¹ Informatics is a term used to describe the social, cultural, political, and economic implications of the new information technology.³² The Clyne Report specifically recommended vigorous promotion and development of domestic data banks and high-technology telecommunications.³³ It also urged immediate regulation of TDF to ensure control over information vital to national sovereignty.³⁴ Suggested measures included launching a na-

predate the Clyne Report. See BRANCHING OUT, *supra* note 5. It may be that the Clyne Report contained a considerable amount of rhetoric.

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 Clyne Report, *supra* note 5, at 84 (Recommendation 22).

³⁴ *Id.* (Recommendation 24). The following chart categorizes the various strategies available in transborder data flow regulation.

Use of Force	Instrument:		
	Economic	Ideological	Diplomatic
Direct Regulation: 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	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)	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	Agreements relating to the free flow of information and restrictions upon it, or agreements that institutionalize other strategies and goals.
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 "telematics"	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.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),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.³⁷ The Bank Act authorizes the Inspector of Banks to grant or withhold permission to process copies or extracts of customer records outside Canada.³⁸ He may also curtail data processing outside Canada if he determines that such data processing undermines his oversight responsibilities.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.⁴⁰ For the first time the Bank Act allows foreign banks to charter subsidiaries in Canada;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-

³⁵ *Id.*

³⁶ Banks and Banking Law Revision Act, 1980, ch. 40, 1979-1980 Can. Stat. 155 [hereinafter cited as Bank Act].

³⁷ *Id.* § 157(1), (4).

³⁸ *Id.* § 157(6).

³⁹ *Id.*

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).

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.

est to do so.⁴² 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.⁴³

In light of the importance of TDF to the information-dependent international banking industry,⁴⁴ 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.⁴⁵ 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.⁴⁶ 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-

⁴² Bank Act, *supra* note 36, § 157(6).

⁴³ Feldman & Garcia, *supra* note 6, at 23.

⁴⁴ See HOUSE REPORT, *supra* note 9, at 24; see also *International Communications Reorganization Act of 1981: Hearings on H.R. 1957 Before a Subcomm. of the House Comm. on Gov't Operations*, 97th Cong., 1st Sess. 337, 341, 377, 420 (1981) (letters of United States banking officials) [hereinafter cited as *Communications Hearings*].

⁴⁵ See *supra* notes 27-35 and accompanying text. Recommendation 24(c) supported the proposed Bank Act revisions and recommended that the same provisions be extended to the insurance and loan industries. Clyne Report, *supra* note 5, at 84.

⁴⁶ In Canada only a few large national banks dominate the domestic banking sector. These banks are presently having difficulties because of overextended lending-to-capital ratios after speculative lending in the Canadian oil industry. See *Canada's Banks Take a Beating*, *Bus. Wk.*, Aug. 9, 1982, at 58. For a review of the Bank Act as protectionist legislation in favor of Canadian banks, see Note, *The Canadian Banking Law Revision Act: Competitive Stimulus or Protectionist Barrier?*, 13 L. & POL'Y INT'L BUS. 783 (1981).

Banks are extremely dependent on unrestricted TDF to manage operations and provide efficient services. Barriers to TDF have a significant impact on international banking. The Bank Act has been criticized by United States bankers as a blatant attempt to hamper United States banking operations in Canada, but it is still uncertain how it will be applied. One United States banker interprets the Bank Act as restricting TDF at the beginning of the gathering process by allowing only refined or processed data to be sent out of the country; therefore raw data must be processed in Canada. This same banker reports that Canadian officials told him before passage of the Bank Act to prepare to do all data processing in Canada. See *Communications Hearings*, *supra* note 44, at 420 (letter of Robert Walker, Vice President and Associate General Counsel to Continental Bank).

vacuity stems from apprehension over the growing ability of information technology to store and disseminate vast quantities of data concerning individuals.⁴⁷ Today, comprehensive personal details about almost everyone are stored in various public and private data banks.⁴⁸ 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.⁴⁹ 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.⁵⁰ Rising public concern in the United States over this issue prompted legislation to protect individuals from possible abuse of personal data.⁵¹

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.⁵² Early empirical findings indicated that a vast majority of the personally identifiable data leaving Canada went to data banks in the United States.⁵³ 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.⁵⁴

⁴⁷ A. MILLER, *THE ASSAULT ON PRIVACY* (1971).

⁴⁸ See generally *id.*

⁴⁹ D. WEISSTUB & C. GOTTLIEB, *THE NATURE OF PRIVACY: A STUDY OF THE PRIVACY AND COMPUTER TASK FORCE 88* (undated).

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.*

⁵¹ The United States laws are: Freedom of Information Act, 5 U.S.C. § 552a (1976); Right to Financial Privacy Act of 1978, Pub. L. No. 95-630, §§ 1100-1122, 92 Stat. 3697 (codified in scattered sections of 12 and 31 U.S.C.); Fair Credit Reporting Act, 15 U.S.C. § 1681 (1976); Family Educational Rights and Privacy Act of 1974, 20 U.S.C. § 1232g (1976); Tax Reform Act of 1976, § 1202a, 26 U.S.C. § 6103.

⁵² See C. DALFEN, *INTERNATIONAL FACTORS: A REPORT OF THE PRIVACY AND COMPUTER TASK FORCE 26, 30* (undated). Problems of TDF and privacy were confronted by an earlier conference which called for the creation of the Task Force. See *CONFERENCE ON COMPUTERS: PRIVACY AND FREEDOM OF INFORMATION*, Queen's University (May 21-24, 1970). The Task Force concluded their studies with the *PRIVACY REPORT*, *supra* note 22.

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.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.⁵⁶ The regulatory model proposed included the creation of a monitoring agency.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.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.⁵⁹ The fourth proposal was to curtail all outgoing TDF.⁶⁰ The Task Force objected to this extreme alternative on the bases of principle and practicality.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.⁶² As a practical matter, enforcement would be virtually impossible along the common border of the two countries.⁶³ The Task Force found that these same objections also applied to fiscal or excise barriers

⁵⁵ *Id.*

⁵⁶ *Id.*

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).

⁵⁸ PRIVACY REPORT, *supra* note 22, at 171.

⁵⁹ *Id.*

⁶⁰ *Id.*

⁶¹ *Id.*

⁶² *Id.* at 172. The background study warned against the use of privacy as a reason for restricting TDF. C. DALFEN, *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).

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. DALFEN, *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.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.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.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.⁶⁷ Although the Task Force addressed itself to all data banks, the Human Rights Act is applicable only to government data banks.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.⁶⁹ In its present

⁶⁴ PRIVACY REPORT, *supra* note 22, at 172.

⁶⁵ C. DALFEN, *supra* note 52, at 25.

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.

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.

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.

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;⁷⁰ however, the Minister of Justice must initiate such a study.⁷¹

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.⁷² 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.⁷³ As a result, the Foreign Investment Review Act (the Act)⁷⁴ 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.⁷⁵ FIRA requires

ers and is only authorized to investigate citizen complaints and to submit a report on its findings. *Id.* arts. 58, 59.

⁷⁰ *Id.* art. 61, para. 1.

⁷¹ *Id.* The Privacy Commissioner strongly supports the ombudsman approach and the limitation on enforcement powers. CANADIAN HUMAN RIGHTS COMMISSION, ANNUAL REPORT OF THE PRIVACY COMMISSIONER 1981, 120 (1982).

⁷² See *supra* notes 6-8 and accompanying text.

⁷³ PRIVY COUNCIL OFFICE, FOREIGN OWNERSHIP AND THE STRUCTURE OF CANADIAN INDUSTRY (1968) (Watkins Report); INFORMATION CANADA, FOREIGN DIRECT INVESTMENT IN CANADA (1972) [hereinafter cited as the Gray Report].

⁷⁴ Foreign Investment Review Act, 1973, ch. 46, 1973-1974 Can. Stat. 619. For a discussion of the effects of the FIRA on free trade, see Carasco, *The Foreign Investment Review Agency (FIRA) and the General Agreement on Tariffs and Trade (GATT): Incompatible?*, 13 GA. J. INT'L & COMP. L. 441 (1983).

⁷⁵ Foreign Investment Review Act, 1973, ch. 46, § 8, 1973-1974 Can. Stat. at 636.

the investor to establish that the acquisition or investment will be of significant benefit to Canada.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.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.⁷⁸ Comshare sought FIRA approval of a plan to buy a controlling interest in CSL, Ltd., a Canadian computer company.⁷⁹ Comshare committed itself to several future activities in favor of the Canadian information industry, including the promotion of Canadian data processing services.⁸⁰ Ultimately, Comshare's application was denied as not meeting the "significant benefit to Canada" requirement.⁸¹ This activity by FIRA is consistent with specific recommendations of the Clyne Report to control foreign takeovers in the information industry.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

⁷⁶ *Id.* § 2(2), at 620.

⁷⁷ Macdonald, *supra* note 62, at 395.

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.*

⁷⁹ *Communications Hearings*, *supra* note 44, at 208.

⁸⁰ *Id.* at 234-47.

⁸¹ *Id.* at 251.

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).

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

⁸³ See Irish, *Tax Havens*, 15 VAND. J. TRANSNAT'L L. 449 (1982). For a more complete discussion of the development of laws to promote internationally competitive financial services, see B. EFFROS, *EMERGING FINANCIAL CENTERS: LEGAL AND INSTITUTIONAL FRAMEWORK* (1982). Many countries have made their laws more stringent in response to United States antitrust enforcement activities. In Britain, Parliament passed the Protection of Trading Interests Act, 1980, ch. 11. For similar French legislation, see Law No. 80-538, 1980 J.O. 1799. See also Note, *Foreign Nondisclosure Laws and Domestic Discovery Orders in Antitrust Litigation*, 88 YALE L.J. 612 (1979).

⁸⁴ Business Records Protection Act, ONT. REV. STAT. ch. 56 (1980).

⁸⁵ *Id.* This legislation followed an order by a United States court requiring that Canadian paper companies operated in New York produce documents located in Canada. *In re Grand Jury Subpoenas Duces Tecum Addressed to Can. Int'l Paper Co.*, 72 F. Supp. 1013 (S.D.N.Y. 1947). Another provincial law enacted for the same purpose is the Business Concerns Records Act, QUE. REV. STAT. ch. D-12 (1977).

⁸⁶ Business Records Protection Act, ONT. REV. STAT. ch. 56, § 1 (1980).

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 multinational 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).

⁹¹ Combines Investigation Act, CAN. REV. STAT. ch. C-23 (1970).

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, neoprotectionist 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.⁹⁵ 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."⁹⁶ Privacy does not play a dominant role; the

3 NW. J. INT'L 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).

⁹⁵ 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. Sauvart, *supra* note 16, at 370.

⁹⁶ 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).

For a slightly outdated list of data protection laws, see OFFICE OF TELECOMMUNICATIONS, U.S. DEP'T OF COMMERCE, SPEC. PUB. NO. 78-19, SELECTED FOREIGN NATIONAL DATA PROTECTION LAWS AND BILLS (1978). The following is a current list of national laws which are directed toward computers and privacy issues. Austria: Data Protection Act, No. 565, 1978 Bundesgesetzblatt für die Republik Österreich [BGBl.] 3619, *reprinted in* 5 COMPUTER L. SERV., app. 9-5.2a, No. 8 [hereinafter cited as Austrian Data Protection Act]. Denmark: Private Registers etc. Act, No. 293, 1978 Lovtidende for Kongeriget Danmark [LKDk] A 833, *reprinted in* 5 COMPUTER L. SERV., app. 9-5.2a, No. 6 [hereinafter cited as Danish Public Registers Act]. France: Act 78-17 of Jan. 6, 1978, Concerning Data Processing, Files, and Liberties, 1978 Journal Officiel de la République Française [J.O.] 227, 1978 Recueil Dalloz-Sirey, *Législation* [D.S.L.] 77, *reprinted in* 5 COMPUTER L. SERV., app. 9-5.2a, No. 4 [hereinafter cited as French Data Processing Act]; Act 78-22 of Jan. 10, 1978, Concerning Access by and Protection of Consumers in the Area of Certain Credit Operations, 1978 J.O. 299, 1978 D.S.L. 84. Luxembourg: Law Governing the Use of Name-Linked Data in Data Processing, Document Parlementaire No. 2131 (1979). Norway: Personal Data Registers Act, No. 48 (June 9, 1978), *reprinted in* 5 COMPUTER L. SERV., app. 9-5.2a, No. 5 [hereinafter cited as Norwegian Privacy Act 1978]. Sweden: Data Act, No. 289, 1973 Svensk Författnings Samling [SFS] 518, *as amended by* Act of June 12, 1979, No. 334, 1979 SFS 727, *reprinted in* 5 COMPUTER L. SERV., app. 9-5.2a, No. 2 [hereinafter cited as Swedish Data Act]. West Germany: Federal Data Protection Act, 1977 Bundesgesetzblatt I 201, *reprinted in* 5 COM-

word "privacy" is not even mentioned in these laws.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.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.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.¹⁰⁰ One distinguishing feature of the French law is the criminalization of managerial decision-making about individuals based solely on computer information.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."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.¹⁰³ They

PUTER L. SERV., app. 9-5.2a, No. 3 [hereinafter cited as West German Data Protection Act].

⁹⁷ Hondius, *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. *Id.*

⁹⁸ French Data Processing Act, *supra* note 96.

⁹⁹ *Id.* art. 15.

¹⁰⁰ *Id.* art. 19.

¹⁰¹ *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, *Transborder Data Flow: Separating the Privacy Interests of Individuals and Corporations*, 4 NW. J. INT'L L. & BUS. 1, 25 (1982).

It is estimated that about 5% of total TDF involves personal data. Sauvart, *supra* note 16, at 370.

¹⁰² Hondius, *supra* note 66, at 110.

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.¹⁰⁴ In a period of rising protectionism, the French could use the Data Commission to implement selective barriers to TDF pursuant to their *télématique* plan.¹⁰⁵

Louis Joinet, O.E.C.D. Symposium on Transborder Data Flows and the Protection of Privacy, Vienna, Sept. 20-23, 1977. See also Joinet, *Les Aspects Juridiques, Economiques et Sociaux des Flux Transfrontières de Données Personnelles*, 1 INFORMATION, COMPUTER AND COMM. POL'Y 208 (1979). Even in the use of language the French are precise as to the economic consequences of TDF, preferring the term "international information commerce" over "transborder data flows" to more accurately reflect the employment and balance of payments effects. Lemoine, Article, in CII—HONEYWELL BULL, SYSTEMES D'INFORMATIQUE (May 1979), quoted in Pipe, *supra* note 2, at 119. The French have also argued that uncontrolled TDF threatens to decay the nation-state by making it subordinate to multinational organizations and enterprises. Madec, Economic and Legal Aspects of Transborder Data Flows, O.E.C.D. Doc. DSTI/ICCP/80.26, 33, 37 (1980).

¹⁰⁴ S. NORA & A. MINC, L'INFORMATISATION DE LA SOCIÉTÉ (1978), translated in S. NORA & A. MINC, THE COMPUTERIZATION OF SOCIETY: A REPORT TO THE PRESIDENT OF FRANCE (1980) [hereinafter cited as NORA-MINC REPORT]. "Télématique" is the term coined by the French to describe the convergence of the communications and computer technologies. A *télématique* plan would be the equivalent of an informatics strategy. For an inquiry into the various selected barriers suggested by the French study, see Strathe-McClure, *French Telecommunications: Digital Technology and the Télématique Program*, ELECTRONIC NEWS & SCIENTIFIC AMERICAN (Supp. 1980).

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-

CORNELL INT'L L.J. 237 (1981). In principle, the Council of Europe supports the protection of privacy in transborder flows of personal data; however, it condemns the use of data protection laws for other purposes. See Council of Europe: Convention for the Protection of Individuals with Regard to Automatic Processing of Personal Data, Jan. 28, 1981, art. 12, 24 O.J. EUR. COMM. (No. L 246) 31 (1981), Europ. T.S. No. 108, *reprinted in* 20 I.L.M. 317 (1981); Council of Europe: Declaration on the Freedom of Expression and Information, Apr. 29, 1982, *reprinted in* 21 I.L.M. 667 (1982). The Organization for Economic Cooperation and Development (OECD) also recognizes the need to have unimpeded TDF and avoid the abuse of data protection legislation. See Organization for Economic Cooperation and Development, Guidelines Governing the Protection of Privacy and Transborder Flows of Personal Data, O.E.C.D. Doc. C(80) 58 (final) (1980), *reprinted in* 20 I.L.M. 422 (1981).

¹⁰⁶ See *supra* notes 67-71 and accompanying text.

¹⁰⁷ Hondius, *supra* note 66, at 97.

¹⁰⁸ HOUSE REPORT, *supra* note 9, at 40; Burkert, *Institutions of Data Protection—An Attempt at a Functional Explanation of European National Data Protection Laws*, 3 COMPUTER/L.J. 167, 183 (1982); F. HONDIUS, *supra* note 96, at 101.

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. WEISSTUB & C. GOTTLIEB, *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.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.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.¹¹³ This has been done in Denmark. Danish law¹¹⁴ created a Data Surveillance Authority with explicit authority to approve or disapprove the transmission of data to any point outside Denmark.¹¹⁵ The authority can ban all TDF to any country that it determines is deficient in protective legislation.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.¹¹⁷ This type of legislation has been condemned by some commentators as blatantly anticompetitive and designed solely to aid domestic industries.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

¹¹¹ See *supra* notes 57 and 62 and accompanying text.

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.

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.

¹¹⁴ Danish Private Registers Act, *supra* note 96, part 1, § 1.

¹¹⁵ *Id.* § 3(2).

¹¹⁶ *Id.* § 21(2).

¹¹⁷ Grossman, *supra* note 101, at 3.

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.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.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.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.¹²²

B. *Telecommunications Regulations*

Many industrialized nations have developed telecommunications regulations which impede TDF.¹²³ Unlike data protection legislation, these regulations purposely impede commerce without the pretense of protection of privacy.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.¹²⁵ PTTs can impose a variety of restrictive requirements on the use of their telecommunications networks for TDF, ranging from excessive rates¹²⁶ to disap-

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

¹²⁰ See Human Rights Act, *supra* note 67.

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.

¹²² See *supra* note 66 and accompanying text.

¹²³ See Markoski, *Telecommunications Regulations as Barriers to the Transborder Flow of Information*, 14 CORNELL INT'L L.J. 287 (1981); HOUSE REPORT, *supra* note 9, at 12-15.

¹²⁴ Markoski, *supra* note 123, at 288; Bus. Wk., Aug. 3, 1981, at 10.

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.

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 HOUSE REPORT, *supra* note 9, at 13; Markoski, *supra* note 123, at 298-301.

proval of equipment interfaces.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.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.¹²⁹ The domestic telecommunications provider is also the largest supplier of data processing services in Japan,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.¹³¹ Presently, the European PTTs appear to be acting in concert to exclude non-European TDF.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.¹³³ In one instance, regulating authority was used to deny a point-to-point satellite link between a data base in

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.

¹²⁸ Markoski, *supra* note 123, at 295.

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.

¹³⁰ *Id.*

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*].

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.

¹³³ Clyne Report, *supra* note 5, at 73.

the United States and a customer in Vancouver.¹³⁴

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.¹³⁵ No single agency has sole jurisdiction over international rates. The agency asserting jurisdiction will usually negotiate with its foreign counterpart.¹³⁶ 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.¹³⁷

¹³⁴ 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).

¹³⁵ BRANCHING OUT, *supra* note 5, at 6. Clyne Report, *supra* note 5, at 23.

¹³⁶ Clyne Report, *supra* note 5, at 9.

¹³⁷ *Id.* Early government studies revealed a confusing tangle of applicable statutes including: The Radio Act, CAN. REV. STAT. ch. R-1 (1970); The Railway Act, CAN. REV. STAT. ch. R-2 (1970); The Telegraphs Act, CAN. REV. STAT. ch. T-3 (1970); The Telesat Canada Act, CAN. REV. STAT. ch. T-4 (1970); The Broadcasting Act, CAN. REV. STAT. ch. B-11 (1970); The Canada Shipping Act, CAN. REV. STAT. ch. S-9 (1970); The Canadian Overseas Telecommunications Corporation Act, CAN. REV. STAT. ch. C-11 (1970); The Department of Communications Act, CAN. REV. STAT. ch. C-24 (1970); in addition to assorted provincial telecommunications acts. Although it is clear that an information service sending data across the Canadian border is under federal jurisdiction, it is not clear which statutes are applicable and which agencies have jurisdiction. See generally DEP'T OF COMMUNICATIONS, *AN ANALYSIS OF THE CONSTITUTIONAL AND LEGAL BASIS FOR THE REGULATION OF TELECOMMUNICATIONS IN CANADA* (1971); F. JORDAN, *PRIVACY, COMPUTER DATA BANKS COMMUNICATIONS AND THE CONSTITUTION: A STUDY BY THE PRIVACY AND COMPUTER TASK FORCE* (undated); R. BUCHAN, C.

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-

JOHNSTON, T. KANE, B. LESSER, R. SCHULTZ, & W. STANBURY, *TELECOMMUNICATIONS REGULATIONS AND THE CONSTITUTION* (1982).

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.

¹³⁹ HOUSE REPORT, *supra* note 9, at 31. See also Vidal, *Brazil Declares Computer Independence*, N.Y. Times, Feb. 19, 1978, at F3; Bortnick, *International Information Flow: The Developing World Perspective*, 14 CORNELL INT'L L.J. 333, 340 (1981); Saur, *supra* note 11; United Nations Centre on Transnational Corporations, *Transborder Data Flows and Brazil*, U.N. Doc. ST/CTC/40 (1983).

¹⁴⁰ See United Nations Centre on Transnational Corporations, *Transnational Corporations and Transborder Data Flows: A Technical Paper*, U.N. Doc. ST/CTC/23 (1982). Developing countries are seeking to reverse this situation by encouraging the exploitation of TDF by themselves. See United Nations Centre on Transnational Corporations, *Transborder Data Flows: Access to the International On-line Data-base Market*, U.N. Doc. ST/CTC/41 (1983).

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.¹⁴²

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

¹⁴² 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.

¹⁴³ See HOUSE REPORT, *supra* note 9, at 31; Pipe, *supra* note 2.

¹⁴⁴ "The Canadians spoke almost as Third Worlders at the 2nd World Computing Services Congress. . . ." *Going Global*, *supra* note 104, at 133.

¹⁴⁵ See Grossman, *supra* note 101, at 18.

¹⁴⁶ BRANCHING OUT, *supra* note 5, at 76.

¹⁴⁷ "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).

¹⁴⁸ 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.

¹⁴⁹ 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.¹⁵⁰

V. CANADIAN/UNITED STATES RELATIONSHIP AND TDF

Almost all Canadian TDF originates or terminates in the United States,¹⁵¹ so although Canada is actively promoting multilateral

¹⁵⁰ 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.

Company Name	Ownership	\$ millions Total revenues 1980
1. IBM Canada Ltd.	U.S.	1,506.0
2. Northern Telecom Ltd.	Can.	2,055.0
3. Digital Equipment of Canada Ltd.	U.S.	163.7
4. Control Data Canada Ltd.	U.S.	162.6
5. NCR Canada Ltd.	U.S.	176.6
6. AES Data Ltd.	Can.	155.0
7. Sperry Rand Canada Ltd.	U.S.	124.0
8. Philips Data Systems Ltd.	Netherlands	100.3
9. Honeywell Ltd.	U.S.	260.5 ^b
10. Burroughs Business Machines Ltd.	U.S.	105.0 ^b
11. Canada Systems Group (EST) Ltd. ^c	Can.	77.9
12. Datacrown Inc.	Can.	68.6
13. Hewlett-Packard (Canada) Ltd.	U.S.	99.4 ^b
14. Xerox of Canada Ltd.	U.S.	484.2
15. Mitel Corp.	Can.	43.4
16. Amdahl Ltd.	U.S.	43.0
17. B.C. Systems Corp.	Can.	40.2
18. Computel Systems Ltd. ^c	Can.	38.1
19. I.P. Sharp Associates Ltd.	Can.	35.5
20. MAI Canada Ltd.	U.S.	35.0
21. Memorex Canada Ltd.	U.S.	32.3
22. Storage Technology of Canada	U.S.	28.8
23. Gandalf Data Communications Ltd.	Can.	26.4
24. Canadian General Electric	U.S.	N/A
25. Olivetti Canada Ltd.	Italy	N/A

^bEstimated by Evans Research Corporation

^cThese companies merged in 1982

N/A Not Available

Source: Evans Research Corporation

Plante, *Canada's Advanced Technology Industry*, in FOREIGN INVESTMENT REVIEW 6 (Spring 1982).

¹⁵¹ 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,¹⁵² 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.¹⁵³ 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.¹⁵⁴ 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.¹⁵⁵

In the long term, the free flow of information, much like free trade, would probably benefit both countries.¹⁵⁶ 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.¹⁵⁷ There will probably be an economic integration in

tional legal frameworks have emerged. See Organization For Economic Cooperation and Development, *supra* note 105; Council of Europe: Convention for the Protection of Individuals with Regard to Automatic Processing of Personal Data, *supra* note 105. The Canadian Delegation to the OECD has been supportive of the United States initiatives pertaining to the TDF legal issues in that forum. Coombe & Kirk, *Privacy, Data Protection, and Transborder Data Flow*, 39 BUS. LAW. 33, 55 n.116 (1983).

¹⁵² See generally DEAN RUSK CENTER, COMPARATIVE FACTS ON CANADA, MEXICO AND THE UNITED STATES: A FOUNDATION FOR SELECTIVE INTEGRATION AND TRILATERAL COOPERATION 29-61 (1979).

¹⁵³ See *id.* at 44-55. See also SWANSON, INTERGOVERNMENTAL PERSPECTIVES ON THE CANADA-U.S. RELATIONSHIP (1978).

¹⁵⁴ For an analysis of the development of free trade agreements between Canada and the United States in the automotive parts industry, see 1 A. CHAYES, T. EHRLICH, & A. LOWENFELD, INTERNATIONAL LEGAL PROCESS 307-83 (1968).

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.

For current information on the activities of FIRA in high technology investments, see FIRA, FOREIGN INVESTMENT REVIEW (Spring 1982).

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-

velopment and bilateral agreements on TDF may prove more fruitful than domestic legislative impediments.

Douglas Yarn

