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International Information Flow: The Developing World Perspective

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INTERNATIONAL INFORMATION FLOW: THE DEVELOPING WORLD PERSPECTIVE

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Discussions of international data flows have traditionally centered upon the industrialized nations, while often ignoring the less developed countries (LDCs, developing nations, or Third World).[1] Nevertheless, like the industrialized nations, the LDCs are major stakeholders in the debate on the international flow of information. The success of their drive for economic, social, and political development in a highly technological world is dependent increasingly upon their ability to acquire and effectively employ data processing and telecommunications technologies.[2] In an attempt to harness these technologies, a growing number of LDCs have adopted national informatics plans and policies.[3] These measures reflect the desire of the LDCs to gain access to economic and technical information that can aid the development process without creating a new type of dependence upon the developed world. In part, these actions create barriers to the international flow of information that may cause substantial injury to private enterprises attempting to enter and compete in LDC markets.[4]

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1. The Third World is not a homogeneous entity. Rather, the nations grouped under that rubric reflect varying levels of development as well as divergent goals and resources. Significant differences in political philosophy, economic advancement, and cultural heritage exist among the various LDCs. At the same time, the LDCs are unified by a shared desire to steadily improve their standard of living, to build stable national economies, and to compete in the international marketplace while preserving their unique cultural identities.

2. The acquisition and successful employment of modern communications and information technologies, as well as access to scientific and technical information, are essential to development. For a discussion of how informatics technology promotes the economic, social, and political development of the LDCs, see notes 7-11 *infra* and accompanying text.

3. HOUSE COMM. ON GOVERNMENT OPERATIONS, INTERNATIONAL INFORMATION FLOW: FORGING A NEW FRAMEWORK, H.R. REP. NO. 1535, 96th Cong., 2d Sess. 31 (1980) [hereinafter cited as HOUSE REPORT].

4. *Id.* at 23-27, 31.

Furthermore, the LDCs have been increasingly vocal in expressing their information needs and concerns in numerous international fora.[5] Several international organizations have begun to focus on the need to harmonize the information needs and concerns of the developed and developing nations.[6] It is difficult to ascertain at this time the full impact of the LDCs on international debates concerning information and communications policies. However, there is growing evidence that they may significantly affect the establishment of international agreements in the area of informatics.

This Article studies the actions of the LDCs: those taken unilaterally by the individual countries and multilaterally as members of international organizations. Section I discusses the problems that prevent LDCs from acquiring sophisticated information technologies. Section II discusses the developing nations' national informatics plans, analyzing the reasons for their adoption and the effects they have on multinational private enterprises. Section II includes a special case study of the Brazil national informatics policy. Finally, Section III discusses the international organizations that have taken measures to aid the LDCs in the development of their information and communications technologies and in which the developing countries are taking an active role.

I
INFORMATION PROBLEMS AND PERSPECTIVES OF THE THIRD WORLD

The success of the LDCs' quest for economic, social, and political development depends significantly upon their ability to develop and employ technologies related to informatics. "Informatics is the rational and systematic application of information to economic, social, and political development."[7] Informatics fosters economic development by facilitating both the acquisition and the use of scientific and technical data.[8] For example, access to remote databases, combined with the ability to gather and analyze domestic resource

5. *See generally* AMERICAN FEDERATION OF INFORMATION PROCESSING SOCIETIES, TRANSBORDER DATA FLOWS: CONCERNS IN PRIVACY PROTECTION AND FREE FLOW OF INFORMATION 28 (R. Turn ed. 1979) [hereinafter cited as FREE FLOW]; Hamelink, *Informatics: Third World Call for New Order,* 29 J. COM. 144 (1979).

6. HOUSE REPORT, *supra* note 3, at 27-30.

7. INTERGOVERNMENTAL BUREAU FOR INFORMATICS, INFORMATICS: ITS POLITICAL IMPACT 2 (Jan. 1978) [hereinafter cited as POLITICAL IMPACT].

8. For a discussion of how informatics fosters the economic development of the LDCs, see generally POLITICAL IMPACT, *supra* note 7, at 8; Hamelink, *supra* note 5, at 144-46.

information, can enhance decisionmaking in support of national development. The LDCs, without engaging in extensive research of their own, can use this information as the basis for formulating their own technological and economic development programs. Informatics also facilitates processing of large amounts of data used to plan and control the implementation of these programs.[9] Informatics, likewise, fosters social development by educating people, by shaping and preserving cultural values, and by promoting social change.[10] Finally, informatics fosters political development by providing more input into the political decisionmaking process and by facilitating the planning and control of government plans and policies.[11]

The LDCs approach informatics problems from the perspective of information and technology "have-nots." Their concerns revolve around their lack of access to both technology and the world's store of knowledge. Lack of access not only means that LDCs have been unable to procure technical information from the outside world; it also means that once they obtain this information, they have been unable to fully utilize it.

The developing countries lack effective informatics systems for several reasons.[12] First, they lack a technolgocial infrastructure that provides an environment for indigenous research, development, and local innovation. The absence of a technological infrastructure is a severe handicap to the effective integration of modern communications and data processing systems into the unique environment of each developing nation. Of equal importance, the developing countries lack an information infrastructure.[13] An information infrastructure consists of the "complex of institutions, organizations, resources, and systems and services which support the flow and delivery of information from the generator to the users."[14] It provides a variety of information-handling services, institutions for acquiring, packaging, and distributing materials, government entities

9. POLITICAL IMPACT, *supra* note 7, at 8.

10. For a discussion of how informatics fosters the social and cultural development of the LDCs, see generally *id.* at 8-9.

11. For a discussion of how informatics fosters the political development of the LDCs, see generally *id.* at 9-17.

12. For a discussion of the LDCs' inability to develop effective informatics systems, see generally L. Agrawal, Problems and Limitations in Installation of Transborder Data Flow System in Developing Nations (June 1980) (unpublished paper presented at Intergovernmental Bureau for Informatics World Conference on Transborder Data Flow Policies); United Nations Educational, Scientific and Cultural Organization, Intergovernmental Conference on Scientific and Technological Information for Development: UNSIST II, U.N. Doc. PGI-79/CONF. 201/COL. 5 (18 April 1979) (Main Working Document of 1979 UNESCO Conference) [hereinafter cited as UNESCO Main Working Document].

13. UNESCO Main Working Document, *supra* note 12, at xi.

14. *Id.*

for articulating national information policies, modern communications and data processing equipment and services for facilitating information transfer, and a cadre of well trained and educated information professionals and information users. Computer technology is an ever-changing and developing field. Constant advancements require the ability to keep pace with ongoing technological development. The LDCs lack sufficient trained personnel to engage in research, and to install, maintain, and program indigenous computer systems.[15]

The other major difficulty facing the LDCs is their lack of available capital for investment in high technology products and services.[16] While hardware costs will presumably continue to decline as a result of electronic component miniaturization, software costs are rising. Unfortunately, the LDCs simply do not have the local expertise to produce their own software.[17]

The industrialized nations' attempts to help the LDCs develop their information and communications technologies have been piecemeal and often directed toward maintaining the status quo. While the United States has generated a good deal of rhetoric concerning the need to enhance information and communications development in the Third World, it has actually committed a minimal amount of funds.[18] The emphasis of United States foreign assistance, like that of many international organizations, is currently on "basic needs," such as food and health services. Because information and communications are not considered basic needs, they do not command priority funding.

The United States has made some effort to increase the availability of scientific and technical information in the developing world. Government and commercial vendors have made U.S. databases available to LDCs,[19] and numerous federal agencies have instituted information dissemination and technical assistance programs for developing countries.[20] A lack of interest and inadequate coordina-

15. L. Agrawal, *supra* note 12, ¶¶ 2.1(e), 2.2(c).

16. *Id.* ¶ 2.2(e).

17. *Id.* ¶ 2.2(c).

18. Honig, *Lessons for the 1999 WARC,* 30 J. COM. 48, 55 (1980). For a history of U.S proposals to provide financial assistance to the LDCs, see ACADEMY FOR EDUCATIONAL DEVELOPMENT, THE UNITED STATES AND THE DEBATE ON THE WORLD "INFORMATION ORDER" 5-6 (J. Gunter ed. 1978) [hereinafter cited as NWIO Debate].

19. U.S. DEPARTMENT OF STATE, THE INFORMATION RESOURCES AND SERVICES OF THE UNITED STATES: AN INTRODUCTION FOR DEVELOPING COUNTRIES (July 1979).

20. J. Bortnick, W. Schacht & L. Raleigh, The Role of the United States in Scientific and Technical Information Assistance for the Developing Countries 72-123 (March 13, 1980) (Part II of U.S. POLICIES OF THE DEVELOPING NATIONS: FOLLOW-UP TO THE U.N. CONFERENCE ON SCIENCE AND TECHNOLOGY FOR DEVELOPMENT AND U.S. PROGRAMS FOR SCIENTIFIC AND TECHNICAL INFORMATION ASSISTANCE (March 13, 1980) (A Con-

tion plague U.S. foreign aid efforts in the area of information and communications. Furthermore, in light of the current fiscal restraints on government spending, the outlook for foreign aid to the developing world for informatics in the near future is bleak.

Critics express further skepticism regarding the U.S. commitment to United Nations' efforts in this area. For example, the LDCs exerted substantial pressures to gain funding for improved scientific and technical support at the 1979 United Nations Conference on Science and Technology for Development.[21] These pressures resulted in the call for a world-wide scientific and technical information network.[22] While it was expected that the United States would contribute fifty million dollars toward increased science and technology assistance following the conference, the U.S. ultimately pledged merely $7.2 million.[23] Unless new approaches for assisting the LDCs are found, the developing countries will have difficulty acquiring the informatics technologies necessary for their economic, social, and political development.

II
DEVELOPMENT OF BARRIERS TO INFORMATION FLOW BY UNILATERAL ACTION

A. REASONS FOR ERECTING BARRIERS

In some developing nations, information and communications resources are extremely limited and governments generally have paid little attention to associated policy issues. However, there is a growing trend—particularly among the middle-tier developing nations—to articulate national informatics policies, long range plans, legal and regulatory environments, and to develop indigenous data processsing and telecommunications industries.[24] In part, these measures have led to the erection of barriers to the free flow of infor-

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gressional Research Service—Science Policy Research Division document)) [hereinafter cited as Information Assistance].

21. G. Knezo, Implementation of Recommendations Made at the United Nations Conference on Science and Technology for Development 1-20 (March 13, 1980) (Part I of U.S. POLICIES FOR THE DEVELOPING NATIONS: FOLLOW-UP TO THE U.N. CONFERENCE ON SCIENCE AND TECHNOLOGY FOR DEVELOPMENT AND U.S. PROGRAMS FOR SCIENTIFIC AND TECHNICAL INFORMATION ASSISTANCE (March 13, 1980) (a Congressional Research Service—Science Policy Research Division document)).

22. For a discussion of the U.S. position on the LDC demands at this Conference, see *id.* at 20-57.

23. Broad, *Fund for U.N. Science Center Short by $200 Million,* 208 SCIENCE 475 (1980).

24. In his opening address to the Intergovernmental Bureau for Informatics Conference on Transborder Data Flow Policies in Rome in June 1980, IBI Director General F.A. Bernasconi noted that more than 60 LDCs have established informatics plans and

mation.[25] The LDCs view these barriers as necessary to protect various economic, political, and social interests.

One reason for the development of informatics policies and the erection of barriers to the flow of information is the preservation of national sovereignty.[26] Information is a resource that yields economic, political, and technological advantages. National sovereignty, in the context of information, refers to a country's desire to control its own information resources and the advantages flowing therefrom. Other countries' use of these resources threatens the LDCs' national sovereignty by undermining this control.[27]

The threat is of particular concern to developing nations because they lack the data processing and telecommunication tools to fully exploit their information resources. For example, natural resources, as compared to manufactured goods or service industries, form the basis of many economies in the LDCs. They lack, however, the facilities to process, store, and analyze natural resource data. Consequently, the LDCs must utilize foreign data processing and communications services to perform the necessary information processing functions, and then buy back the processed information at a higher price.[28] One commentator notes that "this cycle of transborder data flows is quite similar to cycles in other trade areas where industrially less developed countries export raw materials (e.g., ores, rubber, timber, oil) to industrialized countries and then purchase back the more costly, finished products."[29] In this way, LDCs are deprived of the jobs that the processing of information creates.[30] Control over information resources is undermined, and hence, national sovereignty is threatened.

Another impetus for the erection of barriers is the LDCs' fear of

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authorities. Bernasconi, *Accepting the Challenge of New International Responsibilities,* 3 TRANSNAT'L DATA REP. No. 3/4, at 3, 4 (1980).

25. HOUSE REPORT, *supra* note 3, at 31.

26. For a discussion of national sovereignty as it is related to information flow, see HOUSE REPORT, *supra* note 3, at 20-21; Eger, *The Global Phenomenon of Teleinformatics: An Introduction,* 14 CORNELL INT'L L.J. 203, 231-34 (1981); Novotny, *Transborder Data Flows and International Law: A Framework for Policy-Oriented Inquiry,* 16 STAN. J. INT'L L. 141, 160-66 (1980).

27. A good example of such a threat is the developed nations' use of satellite remote sensing. Data that are acquired via remote sensing are openly available. The LDCs lack, however, the ability to interpret these data due to few technicians and limited computer technology. In contrast, the developed countries and multinational corporations often can afford both trained personnel and sophisticated equipment. Consequently, LDCs fear that foreign nations and multinational enterprises will have a superior bargaining position in negotiating contracts concerning natural resources. For a discussion of remote sensing, see notes 92-96 *infra* and accompanying text.

28. *See* FREE FLOW, *supra* note 5, at 3-4.

29. *Id.* at 4.

30. *Id.*

vulnerability.[31] LDCs depend heavily on foreign firms for telecommunications and data processing equipment and services. Often, critical economic and political data are stored entirely in computer banks outside the country. The LDCs worry that the location of these sensitive data abroad makes them vulnerable to disruptions due to technical failures, manipulation, or even political sabotage.[32] In addition, they fear that the basis for important national decisions is located extra-territorially.[33] Finally, the LDCs fear that personal information may be compromised if it is stored in a country with lower standards of confidentiality.[34] Although developed nations share these vulnerability concerns, the fear is often deeper for the LDCs because of the high degree to which they are dependent upon foreign nations for the performance of information-related functions.[35]

Another factor prompting the erection of barriers is the LDCs' fear of cultural erosion.[36] The foreign media provides an ongoing flow of news and entertainment programs to the LDCs. These programs introduce values and perspectives that often conflict with those traditionally held in the LDC. Many LDCs view seriously the threat that this inundation poses to the cultural identity of the importing country. Developing countries likewise are concerned that cultural erosion extends beyond media programming to all forms of data flow that may reflect the institutions and traditions of the producing country. The growing computerization of all types of information accentuates the convergence of mass media and transborder data flow questions.[37] Although shared by the developed nations, this concern is of particular importance to the LDCs where citizens have had limited exposure to foreign values, have high illit-

31. For a discussion of the vulnerability issue, see HOUSE REPORT, *supra* note 3, at 21-22; INTERGOVERNMENTAL BUREAU FOR INFORMATICS, ISSUES ON TRANSBORDER DATA FLOW POLICIES 1-2 (Sept. 1979) [hereinafter referred to as DATA FLOW POLICIES]; Hamelink, *supra* note 5, at 147-48.

32. *Id.* at 1; HOUSE REPORT, *supra* note 3, at 21-22.

33. DATA FLOW POLICIES, *supra* note 31, at 1; Hamelink, *supra* note 5, at 147.

34. DATA FLOW POLICIES, *supra* note 31, at 2.

35. HOUSE REPORT, *supra* note 3, at 21.

36. For a discussion of the LDC's fear of cultural erosion from the foreign media and the impact of this fear on informatics policies, see generally HOUSE REPORT, *supra* note 3, at 23; FREE FLOW, *supra* note 5, at 13-14; Masmoudi, *The New World Information Order,* 29 J. COM. 172 (1979); Righter, *Battle of the Bias,* 34 FOREIGN POL'Y 120 (1979); Righter, *The Political Challenge to the Western Press: Another "New Order"?,* 35 WORLD TODAY 167 (1979); Address by Joubert de Oliviera Brizida, Executive Secretary of the Brazilian Special Secretariat of Informatics, 1980 Intergovernmental Bureau for Informatics Conference on Transborder Data Flow Policies in Rome, Italy (June 23, 1980), *reprinted in* 3 TRANSNAT'L DATA REP. No. 3/4, at 32 (1980) [hereinafter cited as BRAZILIAN ADDRESS].

37. *Id.* at 33.

eracy rates, and have few domestic information sources to use as alternatives.

Finally, some LDCs have erected barriers to protect themselves from over-dependency on foreign technology and information services.[38] The following section examines this situation.

B. BRAZIL: A CASE STUDY

Brazil is seen as a leader in the area of informatics policy development and serves as a major Third World spokesman at international meetings. The Brazilian informatics policy demonstrates how LDCs can create a regulatory environment to achieve the objectives discussed above. It also shows how LDCs can exert pressure on their trading partners to accomplish these goals.

The Brazilian informatics policy is geared to the achievement of several objectives including the development of domestic telecommunications and computer industries, and the regulation of transborder data flows in the interests of national sovereignty and economic growth.[39]

The Brazilian government established the Coordinating Commission on Data Processing Activities (CAPRE) in 1972 to oversee the federal government's acquisition and use of computers.[40] By 1975, Brazil's annual expenditures for data processing equipment had skyrocketed to $275 million, nearly all of which consisted of imports from foreign countries.[41] Significant balance of trade defi-

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38. *See* POLITICAL IMPACT, *supra* note 7, at 18-19.

39. Restrictions on information flow serve as devices to protect the national sovereignty, vulnerability, and cultural erosion concerns of the LDCs until their own informatics technologies develop to the point at which the particular country becomes less dependent upon the developed countries. "Protection is a needed tool to bridge the dependence gap, and is to be removed gradually as indigenous capacity is able to face exogenous competition." Saur, *Informatics, New Technologies and Data Regulation: A View From the Third World,* in DATA REGULATION: EUROPEAN & THIRD WORLD REALITIES 223, 224 (On Line 1978) [hereinafter cited as Third World View].

Executive Secretary Brizida of SEI summarized the major purposes behind the Brazilian plan:

> The aim of such control is not to restrain the information flow but rather to give commercial reciprocity to the exchange of information among countries. It concerns the use of data banks, software, data processing capability and other facilities. In terms of strategy, it is fundamental that a country have control over the information resources essential to its sovereignty and development. Thus, the international commerce of information products and services must be submitted to conditions related to their content.

BRAZILIAN ADDRESS, *supra* note 36, at 33-34. *See also* Brizida, *The Brazilian Transborder Data Flow Policy,* 4 TRANSNAT'L DATA REP. No. 3, at 19 (1981).

40. M. Ripper & J. Wanderley, The Brazilian Computer and Communications Regulatory Environment and Transborder Data Flow Policy 3 (June 1980) (unpublished paper presented at the Intergovernmental Bureau for Informatics World Conference on Transborder Data Flow Policies) [hereinafter cited as Brazilian Policy].

41. *Id.*

cits resulted.[42] The growing awareness of the importance of computer technology to the successes of national development policies and to the solution of the Brazilian balance of trade problem prompted the Brazilian government, in 1976, to enlarge CAPRE's scope of responsibility.[43] Instead of merely overseeing the governments' acquisition and use of computers, CAPRE became responsible for the supervision of private users' acquisition and use of computers.[44] CAPRE approval was a prerequisite to the importation of computer parts.[45] In addition, CAPRE received the power to establish a total quota of computer parts that could be imported. Finally, CAPRE became responsible for proposing a national informatics policy.[46]

CAPRE examined applications for the import of computer equipment on a case-by-case basis. CAPRE delineated the criteria for implementing the import quota by assigning priority to projects with high nationalization content, high exporting potential, high technological absorption capacity or total technology transfer in the case of joint ventures, favorable market share implications, and controlling capital in the hands of Brazilians.[47] Domestic manufacturers were encouraged to manufacture computer equipment; those using their own technology would receive priority treatment when implementing the import quota.[48] Above all, no foreign computers could be used "which through teleinformatics accomplish tasks whose solution can be obtained in the country."[49] Through such means of regulating imports, Brazil sought to protect its nascent computer industry.[50]

In 1979, the Brazilian Government established the Special Informatics Agency (SEI) to replace CAPRE.[51] The SEI is part of the National Security Council and acts as an advisory body to the President.[52] SEI's responsibilities are greater than those of CAPRE. SEI proposes the national informatics plan and is responsible for its

42. Third World View, *supra* note 39, at 232.
43. Brazilian Policy, *supra* note 40, at 4.
44. *Id.*
45. The criteria CAPRE delineated for determining whether they would approve the import of a particular computer part are set forth in text accompanying note 47 *infra*.
46. *Id.*
47. *Id.*
48. *Id.*
49. BRAZILIAN ADDRESS, *supra* note 36, at 33.
50. Brazil regulates the importation of computer parts as part of its strategy to manage its balance of payments problem. A government council limited imports of computer parts to 130 million U.S. dollars in 1978. Economists conservatively estimate that without CAPRE regulation, 1978 imports would have exceeded 300 million U.S. dollars. Third World View, *supra* note 39, at 233.
51. BRAZILIAN ADDRESS, *supra* note 36, at 32.
52. *Id.*

execution. SEI oversees all aspects of the manufacture and use of electronic components. Finally, and of key importance, SEI regulates all transborder data flows from other countries.[53]

SEI examines potential transborder data flows and international information services on an individual basis.[54] SEI then determines what the impact of the services will be in terms of economic, privacy, and national sovereignty concerns.[55] Based upon this analysis, the application is either accepted, rejected, or conditionally accepted.[56]

These data controls are not designed solely for the computer and communications industries. International operations of all kinds, especially in the service sector, require information flows. The role that information plays in supporting industries such as banking and insurance is unquestioned and is receiving increased attention in Brazil. The Brazilian transborder data flow policy applies equally to all types of information that are considered commercial products with corresponding economic value.[57]

Most recently, Brazil has proposed the employment of "gateways" for channeling information as a means for systematizing data traffic into and out of the country.[58] The establishment of such a communications mode would increase government control and provide more effective means for tariffing information flows.[59]

C. Effects of Barriers on Multinational Corporations

Transborder data flow regulations have significant consequences for multinational enterprises either operating or attempting to enter markets in the developing world. Focusing on the Brazilian regulations, these consequences become readily apparent.[60] Multinational corporations first encounter barriers at the application stage.[61] Processing applications for the sale or purchase of information products and services can be time-consuming and costly. Application and inspection requirements may compromise proprietary information. For example, the Brazil application requires the applicant to provide information about the company, the services being

53. Brazilian Policy, *supra* note 40, at 5.

54. Brizida, *The Brazilian Transborder Data Flow Policy,* 4 TRANSNAT'L DATA REP. No. 3, at 19, 19-21 (1981).

55. *Id.*

56. *Id.*

57. BRAZILIAN ADDRESS, *supra* note 36, at 34.

58. *Id.*

59. *Id.*

60. A compendium of letters from multinational enterprises commenting on barriers to international data flow can be found in *International Data Flow: Hearings Before a Subcommittee of the House Comm. on Government Operations,* 96th Cong., 2d Sess. app. 3 (1980) [hereinafter cited as *Hearings*].

61. *See* note 55 *supra* and accompanying text.

provided, and the resources needed for implementing those services. Furthermore, the company must report its objectives for making the transfer.[62] Clearly, much of this information may otherwise be confidential.

Brazil does not allow the importation of information services if the service could be provided domestically.[63] A multinational corporation desiring to operate in Brazil, therefore, may be forced to establish duplicate data processing facilities in Brazil rather than receive services or equipment directly from abroad.[64] Consequently, the cost of doing business may drastically increase. Furthermore, the unavailability of adequate equipment and services produced in Brazil may lead to less efficient operations. In order to avoid the increases in costs or requirements to provide proprietary information, many enterprises may revert to less effective means of communicating world-wide. Finally, the increase in cost and decrease in efficiency may simply preclude an enterprise from entering a market such as Brazil.[64]

It is too early to determine the full impact of Brazil's regulatory structure on multinational corporations. Likewise, the effect of these protectionist measures on Brazilian economic growth is uncertain. However, the establishment of similar regulatory frameworks in other developing countries could have significant repercussions for businesses attempting to expand their operations into the developing world. While existing LDC markets are small compared with those of the industrialized countries, the opportunity for growth is substantial.[66] At present, multinational firms face numerous difficulties when dealing with developing countries and often consider these endeavors risky.[67] Increased regulation may further inhibit multinational enterprises from exploring the potential of emerging markets in the developing world.

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62. Brazilian Policy, *supra* note 40, at 6.

63. BRAZILIAN ADDRESS, *supra* note 36, at 33.

64. *Hearings, supra* note 60, at 739.

65. For a general discussion of the impact of barriers to the flow of information, see HOUSE REPORT, *supra* note 3, at 23-27 and *Hearings, supra* note 60, at 139.

66. ARTHUR D. LITTLE, WORLD TELECOMMUNICATIONS STUDY II: 1980-1990 (1980); Szuprowicz, *The World's Top 50 Computer Import Markets,* DATAMATION 141 (1981).

67. U.S. DEP'T OF COMMERCE, TRADE ISSUES IN TELECOMMUNICATIONS AND INFORMATION: PROMOTING U.S. TRADE IN TELECOMMUNICATIONS AND INFORMATION PRODUCTS WITH DEVELOPING COUNTRIES (NTIA Report 81-72, 1981).

III
LDCs IN THE INTERNATIONAL ARENAS

In addition to unilaterally developing national information policies, the LDCs have emerged as a significant coalition at international meetings where unified expressions of their common concerns have made a significant impact on the resolution of conflicts, the development of new international agreements and codes of conduct, and the setting of future agendas. A demand for the creation of a "new world information order" (NWIO) accompanies their call for a "new world economic order" at these meetings.[68] One commentator defines the NWIO as the "international exchange of information in which nations, which develop their cultural system in an autonomous way and with complete sovereign control of resources, fully and effectively participate as independent members of the international community."[69] In other words, under the NWIO, the LDCs would have equal access to the world's store of knowledge and other information resources and would control foreign media reporting from their countries.[70]

Debates on the need for a NWIO have been ongoing in several international arenas,[71] although the United Nations remains the key forum for these discussions. Though the NWIO debates often center on concerns of cultural imperialism and freedom of the press,[72] these issues are only part of the larger spectrum of information flow issues reflecting more general economic and social goals of the LDCs. The NWIO promotes these broader concerns by emphasizing the need to achieve a balance between developed and developing nations that will enable the LDCs to become active participants in the world

68. For a discussion of the LDCs' demands for a New World Information Order, see generally NWIO Debate, note 18 *supra*, Dizard, *The U.S. Position: DBS and Free Flow,* 30 J. COM. 157 (1980); Hamelink, note 5 *supra*; Masmoudi, note 36 *supra*; Righter, *Battle of the Bias,* 34 FOREIGN POL'Y 120 (1979); Righter, *The Political Challenge to the Western Press: Another "New Order"?,* 33 WORLD TODAY 167 (1979); C. Hamelink, The New International Information Order: Development and Obstacles (Occasional Paper 80/2 of the Vienna Institute for Development [hereinafter cited as Development and Obstacles].

69. Hamelink, *supra* note 5, at 146.

70. One key LDC proponent of the NWIO defines it in the following manner:

> The new world information order founded on democratic principles seeks to establish relations of equality in the communications field between developed and developing nations and aims at greater justice and greater balance. Far from calling in question the freedom of information, it proposes to ensure that this principle is applied fairly and equitably for all nations and not only in the case of the more developed among them . . . .

Masmoudi, *supra* note 36, at 178.

71. For a chronology of meetings at which the need for an NWIO was debated, see generally Development and Obstacles, note 68 *supra*.

72. *See* notes 36-37 *supra* and accompanying text; *see also* note 68 *supra* and accompanying text.

marketplace and partners in an increasingly interdependent world. The LDCs view this balance not simply in terms of the news media, but equally in terms of access to scientific and technical information, telecommunications facilities, and the distribution of the frequency spectrum.

Achieving that balance requires limiting information flows in some circumstances while encouraging them in others. Culturally biased information originating from the industrialized nations and broadcast to the developing world is often considered anathema, while vital technical data is highly sought after. In sum, the NWIO, like many LDC national informatics policies, requires placing some degree of control on information flows. This section discusses several international organizations and proposals through which nations have multilaterally attempted to address NWIO demands.

A. UNITED NATIONS

The United Nations Economic, Social, and Cultural Organization (UNESCO) is the primary forum for debate on the mass media issues.[73] These issues result from a clash between two competing perspectives. The 1946 United Nations Declaration on Freedom of Information provides that "all states should proclaim policies under which the free flow of information within countries and across frontiers will be protected."[74] Two years later, the Universal Declaration of Human Rights added further support to the "free flow" concept by providing that "everyone has a right to freedom of opinion and expression; this right includes freedom to hold opinions . . . to seek, receive, and impart information and ideas through any media and regardless of frontiers."[75]

The LDCs have continually sought to alter these principles. They fear that the unrestricted flow of information will lead to cultural domination by the western mass media.[76] Moreover, at numerous UNESCO meetings the Soviet Union has sought greater controls over the press. For example, at the 1976 UNESCO General Assembly the Soviet Union introduced a draft Declaration on Mass Media,

73. For a discussion of the mass media issues, see generally A. SMITH, THE GEOPOLITICS OF INFORMATION (1980); Masmoudi, note 36 *supra*; Righter, *Battle of the Bias,* 34 FOREIGN POL'Y 120 (1979); Righter, *The Political Challenge to the Western Press: Another "New Order"?,* 35 WORLD TODAY 167 (1979).

74. United Nations General Assembly Resolution 59(I), Sixty-fifth Plenary Meeting, 14 December 1949, *reprinted in* UNITED NATIONS RESOLUTIONS, SERIES I, GENERAL ASSEMBLY 1946-48 (D. Djonovich ed. 1972).

75. Universal Declaration of Human Rights, G.A. Res. 217 (III) U.N. Doc. A/810, at 71, art. 19 (1948).

76. *See* notes 36-37 *supra* and accompanying text.

expressing the need for state control over the press.[77] This draft became the subject of intense controversy at UNESCO. In an effort to avoid further dissension, the proponents substantially revised the draft and presented it at the 1978 General Assembly.[78] While the revised draft affirmed basic human rights and maintained the freedom of journalists, it also asserted the need for a new, more just and effective information and communication order, intended to strengthen international peace and understanding and based on a "free flow and a wider and better balanced dissemination of information."[79] This compromise failed to settle the debate over the free flow of information; it merely restated the issue that remains a rallying point for the LDCs and a major concern to Western journalists.[80]

In 1977, UNESCO established the International Commission for the Study of Communications Problems.[81] UNESCO hoped that the Commission would resolve the mass media debates and provide a comprehensive and independent view of the future role of communications. Rather than calming the debate, the Commission's final report, the "MacBride Report,"[82] renewed the controversy by raising some disturbing questions about the relationship between modern telecommunications and information technologies and the production and delivery of mass media programming.

The MacBride Report offers over eighty recommendations for implementing its objectives.[83] Although asserting fundamental principles of freedom of the press,[84] the report supports many LDC concerns affecting electronic international information flows such as "differential communications pricing policies,"[85] "international

77. *See* NWIO Debate, *supra* note 18, at 17-24, for a discussion of relevant United Nations Documents.

78. Declaration on Fundamental Principles Concerning the Contribution of the Mass Media to Strengthening Peace and International Understanding, to the Promotion of Human Rights and to Countering Racialism, Apartheid and Incitement to War, Resolution 4/9.3/2 adopted by the General Conference at its twentieth session, 1 RECORDS OF THE GENERAL CONFERENCE, TWENTIETH SESSION, PARIS, 24 OCTOBER TO 28 NOVEMBER 1978 (Resolutions) 100-04 (UNESCO).

79. *Id.* art. I, at 102.

80. At a May 1981 Conference, representatives of free press organizations issued a formal declaration "Declaration of Talloires" opposing Third World and Soviet efforts in UNESCO to adopt principles regulating the media. In addition, several Congressmen introduced resolutions in the 97th Congress opposing UNESCO efforts to restrict freedom of the press. H.R. Res. 142, 97th Cong., 1st Sess., 127 CONG. REC. H2328 (daily ed. May 19, 1981) (Mr. Shamansky); H.R. Con. Res. 137, 97th Cong., 1st Sess., 127 CONG. REC. H2328 (daily ed. May 19, 1981) (Mr. Stark).

81. INTERNATIONAL COMMISSION FOR THE STUDY OF COMMUNICATION PROBLEMS, MANY VOICES, ONE WORLD 295 (1980).

82. *Id.*

83. *Id.* at 253-72.

84. *Id.* at 233.

85. *Id.* at 257.

action . . . to alter telecommunication tariffs that militate against small and peripheral users,"[86] and more equitable sharing of the electro-magnetic spectrum and the geostationary orbit "as the common property of mankind."[87] In sum, the MacBride Report suggests a panoply of changes to existing international regulations and agreements, and proposes the formulation of new legal tools to ensure more equitable access to and use of modern information and communications technology in the developing world.[88]

The MacBride Report was the subject of considerable debate at UNESCO's Twenty-first General Conference in Belgrade in October 1980. Ultimately, the Conference passed a resolution that commends the MacBride Report, but refused to endorse its recommendations.[89] Significantly, the Conference created an International Program for Development of Communications (IPDC).[90] The IPDC, operating as a separate entity within UNESCO, is designed to improve information infrastructures and train personnel in the LDCs.[91] Although the IPDC provides a new opportunity to strengthen LDC communications capabilities through a cooperative effort between the developed and developing world, observers fear that the LDCs may use the IPDC as a vehicle for espousing their views on the Western mass media's cultural domination. Lack of funding may similarly hinder the operation of the IPDC.

The United Nations has also served as a forum for dispute over the controversial areas of remote sensing and direct broadcasting from satellites.[92] Satellite remote sensing can provide extensive information on natural resource deposits located within the LDCs.[93] Developing countries can use this information for more effective planning and utilization of these resources. The LDCs, however, motivated by national sovereignty concerns, fear that the remotely sensed natural resources data that foreign governments and multinational corporations acquire could be used against them.[94] Presently,

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86. *Id.*

87. *Id.* at 258.

88. For a presentation of different perspectives on the MacBride Report, see COMMUNICATION IN THE EIGHTIES: A READER ON THE "MCBRIDE REPORT" (C. Hamelink ed. 1980).

89. *Belgrade 1980: Breakdown or Breakthrough?,* 1 CHRON. INT'L COM. 2 (1980).

90. *Id.;* Special Political Comm.: Questions Relating to Information, 35 U.N. GAOR, Annex (unedited Agenda Item 59) (Dec. 1980).

91. *Id.*

92. The International Telecommunications Union (ITU) has also served as a forum for dispute on the issues direct broadcasting raises. For a discussion of United Nations and ITU debates on these issues, see generally Dizard, note 68 *supra.*

93. *See* notes 26-30 *supra* and accompanying text.

94. For example, remote sensing technology has been used to "track the desert locust in the Sahara, to map largely unknown regions of Brazil, to inventory forest land in

there are no restrictions on the dissemination of data obtained through remote sensing. The LDCs propose to restrict the distribution of these data and to condition the allowance of remote sensing upon the receipt of prior consent from the target country.[95] Likewise, fears of cultural erosion have prompted the LDCs to insist upon agreements prohibiting direct broadcasting from satellites unless the broadcaster receives prior consent from the receiving nation's government.[96] The United Nations Committee on the Peaceful Uses of Outer Space has held numerous debates on these issues, but has been unable to successfully resolve them.[97]

Another United Nations agency that is currently addressing the issue of transborder data flow is the United Nations Commission on Transnational Corporations. Slated as an agenda item for the Commission's September 1981 meeting is a recently prepared report by the United Nations Centre for Transnational Corporations entitled "Strengthening the Negotiating Capacity of Developing Countries."[98] The two-part report examines the role and impact of transnational corporations in transborder data flows and provides an overview of the economic, political, social, and legal implications of transborder data flows for developing countries.[99] These activities reflect the growing number of agencies within the United Nations system that are studying various aspects of the international data flow question and may be forums where new agreements regarding these issues are proposed.

B. INTERNATIONAL TELECOMMUNICATIONS UNION

The International Telecommunications Union (ITU), the oldest international organization, is an acknowledged arena for the development of regulations and standards for international telecommuni-

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Thailand, to search for iron ore in Egypt, and to determine land use and land capability in Tanzania." Information Assistance, *supra* note 20, at 115-16.

95. SUBCOMM. ON SPACE SCIENCE AND APPLICATIONS OF THE HOUSE COMM. ON SCIENCE AND TECHNOLOGY, WORLD-WIDE SPACE ACTIVITIES, H.R. DOC. No. 352, 95th Cong., 1st Sess. 471 (1977).

96. The "prior consent" issues revolve around whether transmitting and receiving countries should obtain a priori agreement. The Soviet Union and many developing countries favor this approach. The United States maintains that such regulations are premature. A compromise approach favors prior consent on the transmissions from satellites unrelated to content. *See* Dizard, *supra* note 68, at 162, for a discussion of these different viewpoints.

97. *See generally* NWIO Debate, *supra* note 18, at 19-24.

98. Commission on Transnational Corporations, Transnational Corporations and Transborder Data Flows: An Overview, 7 U.N. GAOR (Provisional Agenda, Item 8), U.N. Doc. E/C.10/87 (1981).

99. *Id.*

cations.[100] The ITU employs a consultative process to ensure that national telecommunications systems can connect with each other.[101] Its pronouncements have a critical impact upon the international flow of data. Of its current membership of 154 nations, over one hundred members are LDCs. The ITU operates on the basis of a single vote for each member country. Consequently, the LDCs, through collective support, can substantially influence the outcome of ITU deliberations.

The ITU sponsors the World Administrative Radio Conference (WARC), which reviews and revises international regulations concerning frequency allocations within the electromagnetic spectrum. Traditionally, frequencies have been allocated on a "first come-first served" basis that favors the industrialized nations that presently have substantial communications equipment. According to some estimates ten percent of the world's population presently controls ninety percent of the spectrum. The LDCs insist that the first come-first served principle be abandoned in favor of a priori planning to ensure that an adequate number of frequencies and orbital slots will be available for LDC use at a time when they have acquired more sophisticated communications technologies.[102] The United States' position is that the developing countries need not be concerned because improvements in technology will permit expanded use of the spectrum by the time the LDCs require it and a priori planning will only inhibit useful technological advances.[103]

Many observers anticipated that the most recent WARC conference, held in 1979,[104] would erupt into a political debate between developed and developing countries on frequency allocation issues. Although several areas of dispute emerged, the debate never took place at the Conference. There are several possible explanations for this. One participant emphasized that although the developing nations constituted seventy-two percent of the voting delegation, they constituted only fifty-one percent of the total number of dele-

100. The International Telegraph Union, founded in 1865, merged with the International Radiotelegraph Union to become the International Telecommunications Union in 1934. For a concise presentation of the operations of the ITU, see O'Neill, *The International Telecommunication Union,* 1981 TELECOM. 25.

101. The two consultative committees are the International Radio Consultative Committee (CCIR) and the International Telegraph and Telephone Consultative Committee (CCITT). Through a number of study groups, the CCITT recommends communications tariffs, technical standards, and operating protocols. Although adherence to CCITT recommendations is voluntary, these recommendations are generally accepted by governments and industries alike.

102. *Hearings, supra* note 60, at 819.

103. *Id.*

104. *The World Administrative Radio Conference of 1979: U.S. Preparations and Prospects, reprinted in* 125 CONG. REC. S9312 (daily ed. July 12, 1979).

gates at the Conference.[105] Because of the way the Conference performed its work in committees and subcommittees, many of the developing nations did not have enough delegates to be represented on each subcommittee.[106] Consequently, "subcommittee and working group meetings were dominated by the developed nations."[107]

Another reason for the lack of outright confrontation is the fact that the 1979 Conference postponed major frequency and orbital slot allocation issues for future regional and specialized WARC Conferences to be held over the next several years. It is at these meetings, in addition to the 1982 Plenipotentiary Conference of the ITU, that the industrialized nations will face the LDCs' growing pressure for increased access to the spectrum and for more funding for technical assistance programs.[108] The fact that several of these meetings were scheduled despite opposition from countries like the United States reflects the LDCs influence at the 1979 WARC.[109] As a result, the real strength of the LDCs in the ITU may not be tested until these meetings are held.

C. Intergovernmental Bureau for Informatics

The purpose of the Intergovernmental Bureau for Informatics (IBI), an international organization consisting of forty members, is to provide assistance to developing countries in the application of information and communications technologies. In addition, IBI provides a forum for the developing nations to promote new informatics policies for the LDCs and to discuss the economic, social, and legal effects of the new informatics technologies.[110] Given the politicization of UNESCO and the limited scope of the ITU, the IBI may offer an alternative forum for balancing the interests of developed and developing countries on informatics and transborder data flow problems. Currently, however, few developed countries are members of the IBI.[111]

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105. Honig, *Lessons for the 1999 WARC,* 30 J. Com. 48 (1980).
106. *Id.*
107. *Id.*
108. *Id.* at 48.
109. *Hearings, supra* note 60, at 807; Academy for Educational Development, Results and Implications for WARC 79 For Development Communications: A Report to USAID (Feb. 1980); N. Bowie, Third World Countries at WARC: Positions and Achievements (unpublished paper presented at Conference on World Communications: Decisions for the Eighties, Annenberg School of Communications, University of Pennsylvania, May 13, 1980).
110. The IBI was established under the auspices of the United Nations and UNESCO by Resolutions 22(III) of 3 October 1946, 160(VIII) of 10 August 1948, 318(XI) of 14 August 1950, and 340(XIII) of 24 August 1951, by the Economic and Social Council of the United Nations, and Resolution 2.24 by the General Conference at UNESCO.
111. Crawford, *The IBI Transborder Data Flow Conference: An American View,* 3 Transnat'l Data Rep. No. 3/4, at 38 (1980).

The IBI sponsors conferences on a regional and international level to debate informatics issues. In August 1979, the IBI and UNESCO co-sponsored the Intergovernmental Conference on Strategy and Policies in Informatics (SPIN), emphasizing the need for LDCs to reduce dependence on foreign technology and develop indigenous informatics capabilities. In June 1980, the IBI sponsored a Conference on Transborder Data Flow Policies. The IBI, at this conference, promoted LDC interests by proposing "to consider whether and in what ways government regulatory policies need to be reorganized,"[112] to explore the possibility of "introducing a registry or licensing system,"[113] to investigate the need to revise "traditional legal approaches to the protection of intellectual property,"[114] "to evaluate whether any new laws may be needed . . . in terms of ownership rights, liability and misuse,"[115] "to examine . . . jurisdiction over multinational corporations,"[116] "to clarify the concept of national sovereignty,"[117] to "define the scope of the principle of the free flow of information,"[118] and to "explore . . . preparation of international agreements."[119]

Although the Conference did not adopt any resolutions, it did establish two international working parties. One is charged with studying data protection and international law and the other is charged with studying the economic dimensions of transborder data flow.[120] The recommendations of these study groups will be the subject of discussion at IBI meetings to be held throughout various regions of the world and will ultimately be submitted to the second SPIN Conference scheduled for 1983.[121] Through these conferences and proposals the role of the IBI in shaping international communications and information policy will continue to expand and may provide a major forum for debating new agreements governing international information flow.

D. Impact of LDCs in International Arenas

The LDCs view international organizations, multilateral agreements, and international codes of conduct as effective tools to

112. Data Flow Policies, *supra* note 31, at 11.
113. *Id.*
114. *Id.* at 6.
115. *Id.* at 8.
116. *Id.* at 12.
117. *Id.* at 14.
118. *Id.*
119. *Id.* at 15.
120. *Rules to Facilitate TDF Envisioned,* 4 Transnat'l Data Rep. No. 3, at 26 (1981) interview with Prof. F.A. Bernasconi, Director General, IBI.
121. *Id.*

improve access to information resources and communications technologies.[122] For example, the LDCs can employ international codes of conduct to exert some degree of control over international commerce.[123] Codes of conduct, however, can be a double-edged sword. On one hand, they provide a means for harmonizing divergent national policies and for protecting the LDCs from economic, social, and political exploitation. On the other hand, they can restrict international commerce that, in general, benefits both developed and developing countries. Hence, both LDCs and developed countries have a substantial stake in carefully drafting international agreements so that the benefits to the LDCs outweigh the costs to international commerce in general.

International arenas provide a major framework for the debate and resolution of international telecommunications and information questions. Although many of the specific problems addressed at these organizations are technical in nature, the debate often takes on significant political dimensions. Because of their large numbers and their increased awareness of information-related problems, the LDCs, through international organizations, are taking an expanded role in determining transborder data flow policies. At the same time, the developed countries are beginning to recognize the need to respond to LDC concerns at international meetings with substantive strategies for international cooperation.

CONCLUSION

There has been an increasing awareness of the information-related problems and concerns of the LDCs in recent years. These countries have taken significant measures, both unilaterally and collectively in international fora, to solve these problems and to establish a new world information order. Many LDCs have adopted national informatics policies in an effort to develop their own information capabilities. In part, these policies have involved the erection

122. As one observer has noted:

> In recent years, and especially since the United Nations adopted the New International Economic Order . . . the LDCs in particular have pressed for the creation of international organizations to enforce new multinational agreements. . . . International bodies may be empowered with the authority to rap the knuckles of companies acting outside international agreements. International organizations may also be authorized to interpret agreements through some system of adminstration and review. They may further provide for settlement of disputes through conciliation, arbitration, or even adjudication. Codes of conduct would continue and even reinforce this kind of international intervention.

R. WALDMANN, REGULATING INTERNATIONAL BUSINESS THROUGH CODES OF CONDUCT 13 (1980).

123. *Id.*

of barriers to the free flow of information. What they represent is the LDCs' attempt to harness the benefits of modern technology without increasing their dependence on the industrialized world.

The developed nations are stakeholders in the success of the LDCs' quest for informatics development. Barriers to the flow of information infringe upon the ability of multinational enterprises to compete in international markets. Ultimately, such barriers may preclude some businesses from operating in certain developing countries. Finally, the barriers can seriously impair fundamental freedoms. To avoid these consequences, the industrialized countries must become more sensitive to LDC concerns and must begin to develop policies for dealing with their demands.

Simply providing additional funding will not solve the problem. The developing countries need assistance in establishing training programs and initiating local development efforts. In doing so, the developed countries must appreciate the legitimate LDC concerns regarding national sovereignty and cultural integrity. At the same time, the Western World must emphasize the importance of fundamental principles such as freedom of the press and demonstrate how modern technology can benefit, rather than harm, the interests of the developing world.

Because the world has become increasingly interdependent as a result of modern information and communications technology, new rules governing those technologies may be required. The developing nations are determined to become major players in these deliberations and will use their collective strength to support their positions. The developed nations also have a major stake in information and communications development in the LDCs. Failure to achieve cooperation on these issues would be detrimental to all nations.

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