

LC/CAR/G.239

ECONOMIC COMMISSION FOR LATIN AMERICA AND THE CARIBBEAN
Subregional Headquarters for the Caribbean



INFORMATION SCIENCE AND
THE NEW INFORMATION TECHNOLOGIES:

a bibliography

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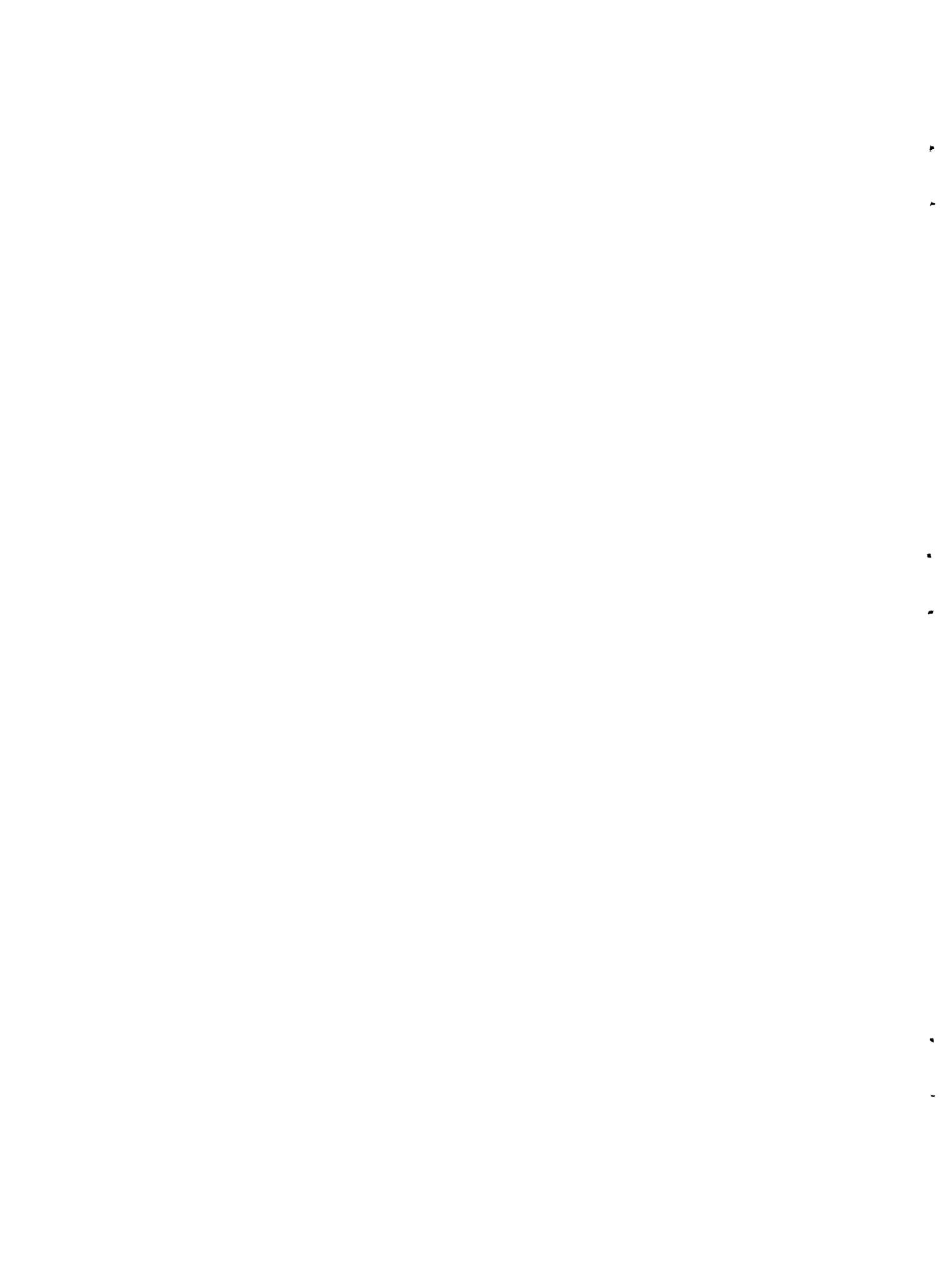


P R E F A C E

This bibliography attempts to treat recent developments in the information field with implications for the Caribbean. Its concern is with the provision of information which could assist in the strengthening of the capacity of a country to guide the growth of its information resources to meet the growing, diverse and changing demand for information from all members of the society. It therefore covers the areas of the economics of information, information systems/networks, information policy, informatics, telematics and transborder data flows.

References are sequentially numbered under broad subject headings. Abstracts have been provided where documents were available for scanning. Author and title indices are included.

Entries were obtained from the CARISPLAN data base at the Caribbean Documentation Centre, bibliographies, indexing and abstracting journals, journals in the information science area; publication lists of United Nations organizations, the subject catalogue at the University of the West Indies library, St. Augustine, Trinidad and Tobago, and personnel in the information area. The focus is on the more recent literature, literature from the 1970s only being cited in cases where its omission would have left a gap in coverage of the subject area.



GENERAL READINGS WITH EMPHASIS ON THE DEVELOPING
COUNTRIES AND INFORMATION

001 Aguiar, Afranio

Existing conditions in developing countries for science and technology information activities.

In: Scientific and technological information for development: proceedings of the Ad-hoc Panel of Experts on Information Systems for Science and Technology for Development. New York: UN, 1985. pp. 41-63

-----> CDC 6482

Based on the authors' experience and assumptions, outlines general characteristics of existing scientific and technological information activities in the developing countries which are classified in three categories according to the level of development in the area. Also describes the common problems and suggests concrete actions to overcome them.

002 Arriaga, Patricia

Distinguishing between the myth and reality of the information society.

In: ATAS Bulletin, n. 3. 1986. pp. 85-90

-----> CDC Serial

Posits that theoretical arguments and empirical evidence advance the hypothesis that the transition to the information economy is an irreversible and necessary process and that the only way to achieve economic growth is by taking the road to the information society. Developing countries will have to emerge as information economies if they are to attain development. Looks at the international distribution of telecommunications and information technology, bearing in mind the three basic prerequisites to fully participating in the information society: having access to a telephone, a television set and a computer. Presents two scenarios which have in common the recognition that the information revolution will have a significant impact on employment, productivity and everyday life. Differences between scenarios are also discussed.

003 Baark, Erik

Constraints on the flow of scientific and technological information: a review of issues with particular reference to developing countries.

In: Scientific and technological information for development: proceedings of the Ad-hoc Panel of Experts on Information Systems for Science and Technology for Development. New York, NY: UN, 1985. pp. 107-112

-----> CDC 6482

Constraints originating in the economic and socio-cultural contexts of information systems in the developing countries are in focus. These constraints tend to derive from the position which information systems occupy in the global or national political and economic structure, and from the role which information plays in development efforts in the Third World. A typology is proposed which distinguishes between four basic dimensions of constraints: constraints on formal and informal information flows and international and national constraints. Concludes that action undertaken to alleviate the disadvantaged situation of people in developing countries should be systematic and consistent.

004 ECLAC. CDCC

Reports to the Caribbean Development and Cooperation Committee: 1978-1985. Port of Spain: ECLAC, 1978.

-----> CDC UN

Summarizes the proceedings, recommendations and decisions of the meetings. Items discussed include: implementation of the CDCC work programme; other activities of the ECLAC Office; action taken on CDCC resolutions; the proposed work programme and draft budget for respective years. The work programme areas include: cooperation in information; the removal of language barriers; science and technology; coordination in planning; social sector; agricultural sector; integration of women in development; transport and communications; international trade and finance; economic survey; demographic analysis; energy and natural resources; support to Eastern Caribbean countries; and Caribbean/Latin American relations.

005 Greene, Gloria; Robb, Reive

Second survey of library and information manpower needs in the Caribbean. Paris: Unesco, 1985. 2 v. PGI-85/WS/12

-----> CDC 4521

Volume one contains main tables, the analysis of the results and conclusions. Apart from the CARICOM States, Bermuda, the British Virgin Islands, the Dominican Republic, Cuba, Haiti, the Netherlands Antilles and Suriname were covered. Findings include: libraries and information systems in the region face a major recruitment and training problem; there is a persistence of relatively high rates of vacancies in specific types of libraries in different countries; it is doubtful whether at present training rates an adequate, relevant supply of manpower can be generated. The encouragement of regional and national library systems to promote and utilize greater cost sharing devices in the short run to eliminate duplication of resources is one possibility for resolving the situation of resource-sharing. Volume two presents the gross data collected during January-July 1984, administered by mailed questionnaires.

006 Griffith-Jones, Stephany

Information access to international finance: what problems for developing countries.

In: O'Brien, Rita Cruise, ed. Information, economics and power: the North-South dimension. London: Hodder and Stoughton, 1983. pp. 70-78

-----> CDC 6541

Deals with business negotiations between particular developing countries and international finance institutions and with international negotiations concerning changes in the world financial system in which developing countries participate directly or indirectly. Developing countries' problems of information access to international finance are seen to be linked to issues of macro-economic management. However it is assumed that some developing countries, which are frequent borrowers in the Euro-market, have a relatively high level of development and experience in the area, and suffer very few information access problems. Concludes that there is a need to expand Third World cooperation in information sharing. A useful task for improving developing countries' information about international finance would be to compile a sort of Who's Who in the Third World financial institutions. The establishment of a research and information centre linked closely to fora where decisions and negotiations on international finance are made is recommended.

007 Hall, Alexander

Scientific and technological information experiences in Jamaica: problems and future prospects.

In: Scientific and technological information for development: proceedings of the Ad-hoc Panel of Experts on Information Systems for Science and Technology for Development. New York, NY: UN, 1985. pp. 69-71

-----> CDC 6482

The management and use of scientific and technological information in the island is relatively new. The orientation of the thinking of persons who need to use this type of information, in particular the manufacturing entrepreneur, is therefore necessary. In the area of technology transfer, emphasis is placed on the use of scientific and technological information in adapting technology for application in developing countries. The Scientific and Technology Information Network (STIN) and its role in linking the technical information systems of various technical organizations within Jamaica is noted.

008 Intergovernmental Council for the General Information Programme

Report by the Intergovernmental Council for the General Information Programme on its activities. Paris: Unesco, 1985. 6 p.

Unesco General Conference, 23, Sofia, 1985.

009 Jequier, Nicholas

Intelligence requirements and information management for developing countries.

In: O'Brien, Rita Cruise, ed. Information, economics and power: the North-South dimension. London: Hodder and Stoughton, 1983. pp. 122-140

-----> CDC 6541

Explores some of the ways in which developing countries could exploit information in a more effective way. Available evidence shows that the developing countries as a group have an underdeveloped information infrastructure. With a population of 78% of the world's total, they have 7% of the world's telephones, and a slightly lower proportion of the world's computers. In the production of knowledge, their share is 3% of the world's research and development expenditure and 5% of its scientific and technological publications. Stresses the need for organized information and an intelligence capability for development. States that good telecommunications facilities, adequate supplies of paper, and the fluidity of scientific and technological communications are important elements of an information-efficient infrastructure to which developing countries should aspire. One of the critical problems facing these countries is to get access to foreign technology in an efficient and cost-conscious way. Questions to be asked by countries contemplating a more active information policy are outlined. A coherent development intelligence effort of which technological, industrial, agricultural and organizational intelligence are components can be seen to play a useful part in the development process.

010 Joint Inspection Unit
 Cooperation between and management of libraries.
 In: ATAS Bulletin, n. 3. 1986. pp. 77-79
 -----> CDC Serial

The organizations of the UN system have long recognized the crucial role of information interchanging in promoting cooperative international problem-solving and in harmonizing national actions to meet common needs. The UN system libraries and services can and should play an important role in information flows and achieving coordinated bibliographic control of the documentation involved. From a questionnaire survey of these libraries (78 libraries responded) it was found that they vary considerably in their use of new technological developments. Only one third of the 78 have computer-based indexes and catalogues, and less than half provide computerized services to users. One third of the 22 larger central and specialized libraries containing largest collections have access to computer data from outside libraries and information systems, and all 22 produce some form of computerized database for their own materials. The impact of the new technologies on libraries becomes many times stronger when introduced on a cooperative basis because they become more cost-effective as the scale of application increases. Despite progress in several agencies, a recent international survey underscores the slow overall pace at which UN information is being made publicly available using new technologies.

011 Marchand, Donald; Horton, Forest W.
 Infotrends: profiting from your information resources.
 New York, NY: Wiley and Sons, 1986. xv; 324 p.
 Presents the central theme of the historical shifts from an agrarian to an industrial, and now to an information economy. As the steam, electrical and gasoline engines became the driving forces behind the industrial revolution, so the silicon chips, fiber optics, laser and other basic technologies are making the information age a reality. Points to the need for companies to rethink corporate strategies in light of the new technologies and examines alternative approaches. Data, information and knowledge have come to be regarded as valuable, costly assets and this view is contrasted with the notion of using information primarily as a cost-displacement and productivity-improvement tool. Alternatives to presently existing industrial management theories are discussed redefining productivity in the information age. The human factor and the changing role of business in the information society are discussed, concluding that information is the key to profits.

012 Melody, W.

Development of the new communication and information industries: impact on social structures, presented at the Symposium.

Symposium on the Cultural, Social and Economic Impact of Communication Technology, Rome, 12-16 December 1983.

013 Sauvart, Karl P.

International politics of trade in data services.

In: ATAS Bulletin, n. 3. 1986. pp. 153-155

-----> CDC Serial

The services sector - encompassing trade, transport, communications, finance, other services - has been the single largest economic sector in all developed market economies and most developing countries. Prospects for an expansion of trade in services are particularly promising for those services whose tradeability has increased because of the advent of the transnational computer-communication systems. Data services are a dynamically expanding business in their own right with international transactions growing at a rapid pace. Transborder data flows (TDF) is seen as nothing more than traded data services. Data services are seen as core services, setting parameters for the operations of most other services and economic activities in general. The international public policy framework exists for international transactions in data services. The US business community has fully recognized the importance of international transactions in services and TDF in particular and has urged government to take action. As such, the Trade and Tariff Act of 1984 was adopted and the services discussion was introduced in GATT. The developing countries opposed the inclusion of services in the GATT work programme, preferring UNCTAD as the forum. In sum, work on an international public-policy framework for trade and foreign direct investment in data services has begun. This will become an important parameter for domestic policies on data goods and services and a crucial part of a more general framework for development of the services sector.

014 Scientific and technological information for development: proceedings of the Ad-hoc Panel of Experts on Information Systems for Science and Technology for Development. New York, NY: UN, 1985. vi; 179 p.

-----> CDC 6482

Papers covering a wide spectrum of issues, encompassing different perspectives in considering concepts and practices relating to information systems, services and networks, both at national and international levels. Stresses the distinctions between the requirements of users of scientific information, on one hand, and technological information on the other.

015 Seiful-Mulkov, Rustum B.

Development of information infrastructure in developing countries.

In: Scientific and technological information for development: proceedings of the Ad-hoc Panel of Experts on Information Systems for Science and Technology for Development. New York, NY: UN, 1985. pp. 134-136

-----> CDC 6482

Four groups of countries ranging from those with a high level of development to those with no information institutions at all are recognized. Issues to be developed include the type of information to be supplied, the channels through which information can be obtained, the handling technologies, the dissemination methods and the use of information by different user groups. Three basic types of information - reference and data information on published or unpublished primary sources; specialized seldom published information; and information on industrial and agricultural technologies - are considered. States that the establishment of any coordination mechanism should not result in the increase of the regular budget. A search for possible variants of coordinating the operation of a global network should be the goal of the study of UNCSTD and the Task Force.

016 Smalls, M.L.

The library profession in the 21st century: transformation for survival. ERIC, 1985. 16 p. ED 267 818
 The approaching information age will encompass a different societal system in the 21st century due to the impact of the information revolution resulting from developments in computer and communications technology. In light of these changes, libraries need to evolve with the new technology by preparing now to become part of the electronic revolution. Librarians must become familiar with all aspects of the communication cycle and its relationship with the organizations and communities to be served; they need to educate themselves about future scenarios relating to employment, education, energy, leisure, communications, etc., and the impact of changes on the role of the library; and they need to know the changing human needs of the information society, and how these needs will effect changes in characteristics of the library system. In the future, emphasis on a customized approach to designing information delivery systems will be the norm. Finally, librarians may assume numerous roles, including: initiator of the transformation of the library system; promoter of the library system; personal guides, information consultants, and information synthesizers of the electronic services and sources; interpreters of information; facilitators or linkers of information networks; freelance specialists; and group practitioners. Libraries should act as centers where users can receive instruction in the uses of new communications technology, assistance in exploiting various databases and important communication information services.

017 Tell, Bjorn V.

Awakening information needs of the developing countries.
 In: O'Brien, Rita Cruise, ed. Information, economics and power: the North-South dimension. London: Hodder and Stoughton, 1983. pp. 141-147

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The infrastructure of information services suitable for developing countries is a matter for international concern. The timescale needed to build a structure of traditional libraries and information centres is much too long due to acute shortages of resources, premises, trained staff etc. One possible approach would be to establish a few national or regional centres of excellence to provide support in terms of equipment, maintenance, telephone communications etc. The centre could have the dual function of, providing an operational service to neighbouring countries, while simultaneously serving as a training centre for personnel.

018 Tell, Bjorn V.

Information consciousness and knowledge enhancement in the LDCs in view of a new international information order. In: International Forum on Information and Documentation, vol. 9, 1984. pp. 3-9

019 Unesco

Consultation on the Coordinated Development of National Information Systems in the Caribbean region; final report and recommendations. Paris: Unesco, 1980. 32 p. PGI-80/WS/20

-----> CDC 1757

Summary report of a meeting to discuss the priorities for national information development; the structure and contents of the activities to be implemented by the Unesco Pilot Project for Coordinated Development of National Information Systems in the Caribbean; and the modalities of implementation. Problems which affect information infrastructure and development are human resources, development of national and regional data communications systems and sensitization of government planners and policy-makers. Other major problem areas discussed include acquisitions, archives, abstracting and reviewing literature, on-line retrieval and data communications systems. Specific problems of the less developed countries (LDCs) and more developed countries (MDCs) are differentiated. Recommendations to the governments of the region and to the LDCs are specified. Recommendations for all countries relate to policy and planning, human resources, education and training, acquisitions, networking, inventories and directories, telecommunications, document reproduction, current awareness services and creation of literature. The Action Plan for implementation in Phases I and II of the Project is set out, stating the date, period, cost and source of funding for each activity.

020 Unesco

Present status of information infrastructure in the Caribbean libraries, archives and documentation centres; background paper. Paris: Unesco, 1980. 50 p. PGI-80/WS/3 Consultation on the Coordinated Development of National Information Systems in the Caribbean Region, Kingston, 12-16 May 1980.

-----> CDC 2196

Contains the findings of a survey on information infrastructure. The countries analysed are the Bahamas, Barbados, Belize, Cuba, the Dominican Republic, Grenada, Guyana, Haiti, Jamaica, St. Vincent, Suriname and Trinidad and Tobago. Major problem areas cited are: information policy and planning, human resources, acquisitions, archival records, bibliographic tools, inventories and directories, retrieval systems and information dissemination. Recommendations are suggested with the purpose of up-grading national infrastructures and promoting regional co-operation particularly in those problem areas which are common to different countries in the region.

021 Unesco

Unesco's General Information Programme for the 80's. Paris: Unesco, 1985. 10 p. UNESCO/BIE/DOCINF/INF.3 Meeting of Experts in Educational Documentation and Information, Geneva, 19850000.

022 Unesco General Conference, 23, Sofia, 1985. Paris: Unesco, 1985. 92 p.

023 Unesco. General Information Programme

First Meeting of the Bureau of the Pilot Project for the Co-ordinated Development of National Information Systems in the Caribbean, Caracas, 1982; final report. Caracas: Unesco, 1982. 9 p. PGI-82/D11/80/1/Bur.1

-----> CDC

Reviews project activities in the area of policy and planning, human resources, information infrastructure development, standardization and dissemination of information. Recommends that a regional consultant mission be set up to make a detailed plan for the establishment of the referral network; that a second manpower survey be carried out in 1983; and that the work accomplished by the UWI Department of Library Studies be assessed and its future orientation re-defined according to present and projected needs. Other recommendations deal with training courses for archivists and librarians. The Action Plan of the Kingston meeting is also reviewed to determine whether new orientation should be given to some activities.

024 Unesco. General Information Programme

Review of PGI/Unesco activities within the framework of the Pilot Project for the Coordinated Development of Information Systems in the Caribbean 1980-1982. Paris: Unesco, 1985. 33 p.

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The project was conceived as a concrete response to problems which continue to affect information infrastructure development in areas such as, lack of: overall planning; appropriate legislation and adequate government financial provision and support. This report details completed or ongoing activities since its initiation, notes difficulties encountered and suggests lines of action to improve access to and use of information in support of national and regional development efforts. Project activities were undertaken in the areas of policy and planning, human resources, information infrastructure development, automated services, standardization and dissemination of information on information activities. Among difficulties noted were: the lack of policy definition for the development of information services both at the national and regional levels; the need to improve knowledge and expertise in critical areas such as research, management of information systems, information marketing and mechanized information retrieval systems; and lack of adequate data transmission facilities. Suggested action for improved access to and use of information include: the formulation of national information policies; expansion of the UWI Department for Library Studies; establishment of an ad-hoc working group responsible for harmonizing and monitoring existing training programmes for library assistants in the region; and the establishment of national referral centres. The importance of joint approaches to common problems is emphasized.

025 UNISIST Meeting on Regional Cooperation in Information Policy and Planning for Development in Latin America and the Caribbean 1, Lima, 1979: final report. Paris: Unesco, 1981. 25 p. PGI.81/WS/1

ECONOMICS OF INFORMATION

026 Braunstein

Economics of property rights as applied to computer software and databases. Springfield: National Technical Information Service, 1977.

027 Caponio, Joseph F.; Post, J. Frank

Economic issues facing North-South information enterprises: the NTIS experience.
In: Scientific and technological information for development: proceedings of the Ad-hoc Panel of Experts on Information Systems for Science and Technology for Development. New York, NY: UN, 1985. pp. 169-171

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This autonomous agency of the US Department of Commerce is the central source for the public sale of US Government sponsored research, development, engineering and other technical reports, foreign technical reports and other analyses prepared by local government agencies or their contractors. It also handles the promotion, licensing and foreign patent filing for those inventions assigned to the Department of Commerce. Outlines obstacles to be overcome with regard to the less developed countries among which are high costs and lack of foreign exchange. Concludes that in the creation of a global network, the principle of fiscal soundness and productivity must be sustained or the results will be shortlived.

028 Carter, M.P.

The valuing of management information. Part II: using the cost of not having information.
In: Journal of Information Science: Principles & Practices, vol. 10, n. 2. pp. 51-58
This article examines an approach to the valuing of management information, by examining the consequences of not collecting or producing the information, turning this into a cost and then equating it to the value of the information in the organization. This approach is tested in the article against several examples of management information.

029 Cohen, Burton J.

Cost-effective information systems. New York, NY: American Management Association, 1971.

030 Cooper, Michael D.

Economics of information.
In: Annual Review of Information Science and Technology, vol. 8, 1973. pp. 5-40

031 Cooper, Michael D.

Structure and future of the information economy.

In: Information Processing and Management, vol. 19, n. 1. 1983. pp. 9-26

The structure of the US economy is analyzed to determine whether a shift has occurred from a service to an information economy. National income accounting concepts are reviewed to facilitate a critical comparison of the works of Machlup and Porat. Evidence about the future of an information economy is reviewed. It is concluded that the growth of the information economy will not continue at the same rate as it had in the past and further that the growth will be in information products, not information services. It is also concluded that it is unwarranted to restructure the National Income Accounts to reflect a change to an information economy.

032 Feketekuy, Geza; Aronson, Jonathon D.

Meeting the challenges of the world information economy.

In: ATAS Bulletin, n. 3. 1986. pp. 157-160

-----> CDC Serial

Examines issues concerning the rapid development of the world information economy which has sparked new commercial disputes between countries, centering mainly on telecommunications, a highly regulated sector in many countries. This regulation raises important economic issues for multinational enterprises that depend on the international flow of information.

Restrictions on international trade in information services could limit the growth of the world economy and could erode the multilateral trading system. States that the international system of rules and procedures created 35 years ago focussed mainly on tariffs imposed on goods at national borders, and was not designed to deal with a world economy driven by flows of information. Focusses on ITU, OECD and GATT, international institutions and likely candidates for assuming expanded roles in the management of the world information economy during the 1980's. The establishment of a liberal international economic order for information services is in every country's interest. This order is often assumed to work to the detriment of developing countries. This is a false assumption, for the developed countries will keep markets open for basic manufactures produced by developing countries only if they are able to generate new jobs in other information related industries; developing countries eg. Hong Kong, Singapore etc., have already become major exporters of key information services; these service industries provide areas in which developing countries are already competitive and can establish export industries without investing large amounts of capital.

033 Fetterman, John J.

High costs of information and some approaches to its acquisition.

In: Perlman, Mark, ed. Organization and retrieval of economic knowledge: proceedings of a Conference held by the International Economic Association. London: Macmillan, 1977. pp. 121-130

034 Firestone, O. John

Economic implications of patents. Ottawa: University of Ottawa Press, 1971.

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035 Grayson, L.

The social and economic impact of new technology, 1978-1984: a select bibliography. New York, NY: IFI/Plenum Data Co., 1984. 80 p.

This book provides a bibliography on the economic and social impacts of new technology, primarily silicon chip technology, microprocessor technology, and information technology, as a response to the flood of such information from conferences, symposia and the literature in general. National and international initiatives, social impacts on employment, impact of new technology on business, industry, and communications, and administrative impact and industrial relations are all discussed.

036 Helleiner, G.K.

Uncertainty, information and the economic interests of developing countries.

In: O'Brien, Rita Cruise, ed. Information, economics and power: the North-South dimension. London: Hodder and Stoughton, 1983. pp. 28-42

-----> CDC 6541

There are different types of information imperfections: uncertainty about the future; inherent deficiencies about the present; informational deficiencies about the present which are unnecessary. Information-related disadvantages of developing countries in international economic relationships can be addressed by: altering the legal and institutional infrastructure; altering the distribution of risks in contracts; or developing indigenous information systems. Opportunities for developing countries may exist in the arena of software. The structures of current information flow for use by developing countries present a potentially rich field for social scientific research which, if tapped will make a truly rich contribution.

037 Hirshleifer, Jack; Riley, John G.
 Analytics of uncertainty and information: an expository survey.

In: Journal of Economic Literature, vol. 17, 1979. pp. 1375-1421

-----> CDC Serial

Reviews the economics of uncertainty noting that information actions are non-terminal in that a final decision is deferred while actively seeking new evidence. Makes a distinction between terminal and non-terminal actions, the former covering decisions made under fixed probability beliefs. Under economics of information discusses informational decision-making, public information and market equilibrium, the economics of research and invention, informational advantage and market revelation of informational efficiency. Concludes that informational activities have an unusual relation to economic equilibrium; information generation is seen as a disequilibrium-creating process and information dissemination a disequilibrium-repairing process.

038 Hirshleifer, Jack; Riley, John G.

New economics of information. Los Angeles: University of California at Los Angeles, 1976. (Discussion Paper , n. 14).

039 Information economy in the U.S.; its effects on libraries and library networks: proceedings of the Library of Congress Network Advisory Committee Meeting, Nov. 14-16 1984. Washington, DC: Library of Congress, 1985. 59 p.

040 Kilgour, Frederick G.

Economics of computerized library networks.

In: Perlman, Mark, ed. Organization and retrieval of economic knowledge: proceedings of a Conference held by the International Economic Association. London: Macmillan, 1977. pp. 181-189

041 Lamberton, Donald M.

Economics of information and organization.

In: Annual Review of Information Science and Technology, vol. 19, 1984. pp. 3-30

042 Lamberton, Donald M., ed.

Economics of information and knowledge. Harmondsworth: Penguin, 1971.

- 043 Larsen, P.O.
 Knowledge and information.
 In: Organization and economics of information and documentation. International Federation for Documentation, 1982. pp. 14-22
 International Federation for Documentation Conference, Copenhagen, 1980.
- 044 Machlup, Fritz
 Knowledge: its creation, distribution and economic significance, vol. 1: Knowledge and knowledge production. Princeton: Princeton University Press, 1980.
- 045 Machlup, Fritz
 Knowledge: its creation, distribution and economic significance, vol. 3: Economics of information and human capital. Princeton: Princeton University Press, 1984. 644 p. Divided into two parts viz the economics of knowledge and information and knowledge as human capital, the study seeks to survey and clarify some of the relevant literature. In the first section, deals with problems of public decisions, new knowledge, methodology and the evidence for the new speciality's recent growth and for its classification. Section 2 reviews the theory of capital, distinguishing four types. Discusses the possibility of attributing human capacity to either genetic endowment or conscious improvements. The route from investments to returns is explored and various estimates of rates of return to investment in schooling are reviewed.
- 046 Machlup, Fritz
 Uses, values and benefits of knowledge.
 In: Key papers in the economics of information. White Plains: Knowledge Industry Publishers, 1983. pp. 245-264
- 047 Marschak, Jacob
 Economics of information systems.
 In: Journal of the American Statistical Association, vol. 66, 1971. pp. 192-219
- 048 Marschak, Jacob
 Value and cost of information systems.
 In: Wolfgang, Eichorn et al Production theory: proceedings of an International Seminar. New York, NY: Springer-Verlag, 1974. pp. 335-358

049 O'Brien, Rita Cruise; Helleiner, G.K.

Political economy of information in a changing international economic order.

In: O'Brien, Rita Cruise, ed. Information, economics and power: the North-South dimension. London: Hodder and Stoughton, 1983. pp. 1-27

-----> CDC 6541

The central focus of economic activity in post-industrial society is shifting from manufacturing of objects to the handling of information and knowledge. Considers the role of information in the functioning of markets and the inequality of access to information in the international relations models of interdependence. A structure for the analysis of the political economy of information as it relates to North-South interactions, noting policy innovations and their limitations is developed. The implications for the developing countries and North-South relations of technical change in the information industry are considered. An immediate task to be undertaken is the consideration of how the information factor impinges on a variety of international commercial relationships, studies of the information industry, its structure, product cycle and the features of technological change.

050 O'Brien, Rita Cruise, ed.

Information, economics and power: the North-South dimension. London: Hodder and Stoughton, 1983. iv; 156 p.

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Consists of 10 chapters by different authors looking at a concrete set of issues and negotiating strategies in several types of bargaining situations internationally, which are directly or indirectly affected by information problems. Also considers how new technology in information and telecommunications may add a new dimension to North-South inequality in the future.

051 Olson, Harold Anker

Economics of information: bibliography and commentary on the literature. College Park, Md.: School of Library and Information Services, for the US Department of Health, Education and Welfare, 1972.

052 Porat, Marc U.; Rubin, Michael R.

Information economy. Washington, DC: US. Department of Commerce, 1977.

053 Robinson, Sherman

Analyzing the information economy: tools and techniques.

In: Information Processing and Management, vol. 22, n. 3. 1986. pp. 183-203

-----> CDC Serial

This paper examines some of the methodologies underlying studies which attempt to measure the size of the information economy and considers the applicability and limitation for analyzing policy issues concerning libraries and library networks. The author focusses on Porat's "The Information Economy," and Machlup's "The Production and Distribution of Knowledge in the US." Porat stays within the framework and must be redefined. The circular flow of economic activity, the long-run trends in economic structure, the definition and size of the information sector, and an input-output table with information sectors are all discussed.

054 Rochell, C.C.

The knowledge business: economic issues of access to bibliographic information.

In: Information Reports and Bibliographies, vol. 14, n. 4. 1985. pp. 17-23

055 Rubin, Michael R.

Alternative approaches to measuring the information sector.

In: ATAS Bulletin, n. 3. 1986. pp. 121-127

-----> CDC Serial

Two similar yet distinct methods have been devised to define and measure the information sector in the US economy - the Machlup method and the US Department of Commerce Study. Each method identified components of the information sector and measured its contribution to GNP. In a comparative analysis, this article compares both methods focussing on differences in classifications and definitions used and the results of the two studies using 1972 as the base year. The comparison illustrates that the Commerce study defines several information activities but is not able to measure them successfully. The result is a more aggregated, and less detailed, body of data than is obtained with the Machlup method.

056 Rubin, Michael R.

Information, economics and policy in the United States. Littleton, Co.: Libraries Unlimited, 1983.

057 Rubin, Michael R.; Sapp, Mary E.

Selected roles of information goods and services in the US national economy.

In: Information Processing and Management, vol. 17, n. 4. 1981. pp. 195-213

-----> CDC Serial

The study examines selected roles of the information sector in the national economy. Among the findings are the following: (1) the information sector conducts relatively little international trade, in comparison to its domestic activity. Roughly 12% of US exports are attributable to the information sector; over 97% of the sector's output is sold within the U.S.; and the sector's exports account for only a small fraction of 1% of GNP. (2) The historical pattern of employment shows that the portion of information workers has risen from 8% of the US work force in 1870 to 41% in 1970. Relatively little of this growth is the result of new technological innovations such as telephones, radio, television and, more recently, computers. Rather, the growth of public and private bureaucracies, which now total 26% of our total work force, largely explains the growth of the sector. (3) Unemployment within the information sector has consistently been lower than in either the manufacturing or agricultural sectors of the national economy. (4) Since 1967, the high technology elements of the information sector, such as electronic components, computers and telecommunications equipment have experienced appreciably less price rise than the economy as a whole. However, over the same period, the service elements of the sector, including finance and insurance, education and medical care, have experienced greater rates of inflation than has the economy as a whole.

058 Rubin, Michael R.; Taylor, Elizabeth

US information sector and GNP: an input-output study.

In: Information Processing and Management, vol. 17, n. 4. 1981. pp. 163-194

-----> CDC Serial

The paper presents the results of an input-output study of the US information sector, constructed from 1972 tables compiled by the Bureau of Economic Analysis of the US Department of Commerce. The study updates the 1967 transaction table published in 'The Information Economy' (US Department of Commerce, 1977). The results show that between 1967 and 1972, the information sector grew at a slightly slower rate than did the entire economy. While the sector accounted for 25.1% of GNP in 1967, its share of GNP had actually declined to 24.8% by 1972. Many of the elements of the sector out-paced the economy, including electronic instruments and telecommunications.

- 059 Spence, Michael A.
An economist's view of information.
In: Annual Review of Information Science and Technology,
vol. 9, 1974. pp. 57-79
- 060 Stiglitz, Joseph E.
Symposium on Economics of Information: introduction.
In: Review of Economic Studies, vol. 44, 1977. pp. 389-391
- 061 Taylor, Christopher T.; Silberston, Z. Aubrey
Economic impact of the patent system. Cambridge:
Cambridge University Press, 1973.
- 062 Taylor, Robert S.
Value-added process in information system. New York, NY:
Ablex, 1986.
- 063 US. Commission on Federal Paperwork
Our shadow government: the hidden cost of government
paperwork, information and communications costs to the
taxpayer. Washington, DC: Information Resources Management,
Process Studies Division, 1977.
- 064 Varlejs, J., ed.
Economics of information; proceedings of the twentieth
annual symposium sponsored by the alumni and faculty of the
Rutgers Graduate School of Library and Information Studies,
April 3, 1981. McFarland and Co., 1982. 92 p.

065 Wionczek, Miguel

Some reflections on economic information gathering and processing within the frame of the North-South conflict.

In: O'Brien, Rita Cruise, ed. Information, economics and power: the North-South dimension. London: Hodder and Stoughton, 1983. pp. 148-153

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Suggests that the obstacles and difficulties using specialized information to maximum advantage are less technical than social, political and professional, and that these obstacles spring from the nature of underdevelopment itself. States that while the availability of all types of information in the South may be useful for improving its bargaining capacity with the North, its usability depends more on building up the capability to exploit information potential than on the volume available. The collection of information must be selective and functional. Posits that the political management capacity required in a developing country to build up the information gathering, processing and user capacity, especially in international matters, is extremely low and provides reasons for this. Suggests that economic intelligence units ought to be small and agile in their dealings with the administration. With relatively little resource outlay, their contribution to policy could be substantial. Areas in which such units are most needed in the developing countries are: finance, food commodities, minerals, energy alternatives, sources of technology and forecasting.

066 Wolfe, Jack N. et al

Economics of technical information systems: a study in cost-effectiveness. Edinburgh: University of Edinburgh, 1971. 3 v.

INFORMATION POLICY

067 Adams, Scott

Information policy for development: national and information responsibilities. Paris: Unesco, 1976. 47 p.
SC/76/Conf. 690/Col.8

UNISIST Meeting on the Planning and Implementing of National Information Activities in Science and Technology, Herceg Novi, 20-23 April 1976.

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Background commentary covers the information revolution and information as a resource for development. The UNISIST programme and the need for strong national focal points are reviewed and UNISIST accomplishments are overviewed. The Meeting focussed on the main objectives of national information activities, focal points, their structure functions and establishment; setting national priorities; aspects of implementation of a national information plan; interaction of a focal point with international and regional activities. Includes several appendices.

068 Albertus, Ursula

Unesco's role in the development of information systems and services (national, regional, international). 13 p.
Seminar on the Development of a Public Administration Network for Latin America and the Caribbean, Bridgetown, 1-3 November 1978. General

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The commitment of UNESCO to contribute to the development of national, regional and international information systems and services is manifested through the action of its General Information Programme and of its sectoral information systems for example, DARE (Social Sciences) and SPINES (Natural Sciences). This paper focuses on the General Information Programme (PGI) as it provides the conceptual framework for UNESCO's information activities as a whole. Its broad objectives are the development of information policies and plans; establishment and promotion of common methods, norms and standards for information handling; improvement and strengthening of information infrastructure and the development of the specialized human resources essential to the planning and operation of existing and future information networks, and education of information users.

069 Appleyard, R.K.

A continent's information policy: the European experience [presented at the Information 85 Conference].
In: Library Association Record, vol. 87, 1985. pp. 455+

- 070 Black, John B.
Report on the national information system [Trinidad and Tobago]. Paris: Unesco, 1986.
- 071 Borko, Harold; Menou, Michel J.
Index of information utilization potential (I.U.P.).
Paris: Unesco, 1983. i; 118p. PGI-83/WS/29 General
-----> CDC 4486
- 072 Brisfjord, I.L.S.
The Institute for International Information Programs:
policy and development.
In: ASIS 85, White Plains, NY: 1985. pp. 202-206
- 073 Cawkell, A.E.
The information society, Part 3 [Telecommunication
networks and socio-economic policies].
In: Electronic and Wireless World, vol. 90, n. 1585. 1984.
pp. 25-26
Discusses telecommunication networks and the interplay between
techno-economic politics, protocols and standards-
particularly the OSI and SNA models.
- 074 Collins, Carol
Montserrat: plan for the development of the national
information system. Paris: Unesco, 1983.
- 075 Collins, Carol
Antigua and Barbuda: plan for the development of a
coordinated national information system: report of a mission.
Paris: Unesco, 1983. vii; 57 p.
-----> CDC 5911
The report deals with the need for information resources to
support national development priorities. It is noted that
there are several proposals for filling the information
documentation gap, but there is no co-ordination for these
plans. Areas of weakness which need special attention are
outlined and specific recommendations are made for improving
the present situation - the acceptance of the offer of the
ECLA Office for the Caribbean to set up a Documentation Unit
as the focal point for participating in the Caribbean
Information System, the establishment of a Documentation and
Information Unit within the Ministry of Agriculture, the
upgrading of the Medical library and the development of the
Law collection at the High Court into a law library.

076 Collins, Carol

Plan for the development of a coordinated national information system: Commonwealth of Dominica. Paris: Unesco, 1981. 48 p. FMR/PGI/83/175

-----> CDC 4491

According to the report, Dominica needs critical information support, in order to ensure that its few resources are efficiently utilized to achieve economic progress. In the socio-economic planning sector, the non-availability of material led to a Government request to the Caribbean Development Bank for technical assistance in the establishment of a special library for the Ministry of Finance. The only viable library service is that of the Public Library, which is not able to adequately discharge additional responsibilities. Recommendations include the establishment of an information system consisting of three elements, an advisory body, a central planning mechanism and the components for delivering service. A national planning agency is also envisaged to serve as the focal point for the development of the system.

077 Collins, Carol

Unesco

Grenada: plan for the development of a national information system. Paris: Unesco, 1981. 75 p. FMR/PGI/81/159

-----> CDC 2812

Reviews documentation on previous efforts relevant to the development of an information system for Grenada. Assesses major national goals and information requirements and evaluates the existing information infrastructure. Defines information policy objectives and presents an action plan for the development of Grenada's national information system. Designed for phased medium term development (1-5 years), the system is comprised of a permanent advisory body - the Advisory Council on National Information and Documentation; a National Documentation Centre to provide information needs for the Government and private sectors; and a National Library Service to provide information services to the education institutions, parishes and communities. Details of the phased implementation, including organizational, manpower, physical, financial and legal implications, are given.

078 Collins, Carol

St. Vincent and the Grenadines: technical report: plan for the development of a coordinated national information system. Paris: Unesco, 1982. 63 p.

-----> CDC 5007

The need for information support to implement development goals eg. increased agricultural production and markets, continued development of manufacturing and tourism, development of alternate sources of energy, achievement of primary health care, upgrading of education, is stressed. A survey of existing services reveals the best developed is the Public Library, and that critical gaps exist in the needs of the socio-economic planning sector where efforts are being made to organize libraries, and where it has been agreed that the Documentation Centre being established would be upgraded to serve the entire government service. It is noted that the internal organization of an information system should allow for maximum use of material acquired. It is also considered important that there be bibliographic control of all material existing in the state and that opportunities for automating the system be assessed in terms of cost effectiveness, prior to positive action. Recommendations include that in the setting up of a National Co-ordinated Information System, the basis of the existing system be retained, changes being made to improve the efficiency of the components; that new responsibilities be added; and that a national archives be created. Also suggests that user education programmes be mounted in the early stages of development in association with ECLA Office, Port of Spain and Unesco Action Plan.

079 Duchesne, Roderick

Role of national libraries in national and international information systems: a policy statement approved by directors of national libraries meeting in Lausanne, 20-21 August 1976.

In: Unesco Bulletin for Libraries, vol. 31, n. 1. 1977. pp. 7-25

-----> CDC Serial

The need for national information programmes is first examined. Consideration is given to the concept of a National Information System (NATIS). The main roles of the national library in NATIS are identified. The concept of an international information system is outlined. In conclusion, the major current challenges to national libraries are summarized. These are: to provide leadership within the library component of NATIS; to participate actively in the planning and overall development of the national information system; to participate in the development and improvement of the international information system and arrange effective representation of the nation's libraries and users at the international level.

080 Durrant, Fay
 Proposal for a national information policy for Saint Lucia. Port of Spain: ECLAC 1985.

081 ECLA. Subregional Office for the Caribbean
 Factors to be considered in the design of policies for development of information infrastructure in the Caribbean. 1981. 17p CDCC/MIDIS/81/2
 Regional Workshop on Methodology for Inventory of Development Information Units, Bridgetown, 19-23 October 1981. General
 -----> CDCUN

Examines the nature and parameters of information as reflected in the information transfer cycle and the policy questions or issues existing in relation to these elements. The organization and control, secondary publications and services, information presentation, dissemination and assimilation of the information transfer cycle are briefly discussed. The document outlines the goals of an information policy - to ensure effective utilization of accumulated knowledge in science and technology, social sciences; to ensure the availability of adequate information for decisions for management and for policy; to focus the attention of governments and private organizations on the problems of information availability and use. Human and financial resources, the creators and users of information and their identification and definition of their needs, policies of information service and the flow of information and its assimilation are looked at in the light of the policy outlined.

082 Gray, John
 Information policy and planning for economic and social development: a dynamic approach. Paris: Unesco, 1979. 30 p. PGI.79/CONF.606.COL.4
 UNISIST Meeting on Regional Co-operation in Information Policy and Planning in Latin America and the Caribbean, 1, Lima, 1-5 October 1979.
 -----> CDC 4422

083 Humphreys, K.W.
 National information policy.
 In: Library Association Record, vol. 86, 1984. pp. 362-363

084 International information policy; report of the fifteenth United Nations Issues Conference. Stanley Foundation, 1984. 28 p.

085 Jamaica. National Council on Libraries, Archives and Documentation Services

Plan for a national documentation, information and library system for Jamaica. Kingston: NACOLADS, 1977.

086 Jamaica. National Council on Libraries, Archives and Documentation Services

Plan for a national documentation, information and library system for Jamaica 1986. Kingston: NACOLADS, 1986.

087 Jequier, Nicholas

Intelligence requirements and information management for developing countries.

In: O'Brien, Rita Cruise, ed. Information, economics and power: the North-South dimension. London: Hodder and Stoughton, 1983. pp. 122-140

-----> CDC 6541

Explores some of the ways in which developing countries could exploit information in a more effective way. Available evidence shows that the developing countries as a group have an underdeveloped information infrastructure. With a population of 78% of the world's total, they have 7% of the world's telephones, and a slightly lower proportion of the world's computers. In the production of knowledge, their share is 3% of the world's research and development expenditure and 5% of its scientific and technological publications. Stresses the need for organized information and an intelligence capability for development. States that good telecommunications facilities, adequate supplies of paper, and the fluidity of scientific and technological communications are important elements of an information-efficient infrastructure to which developing countries should aspire. One of the critical problems facing these countries is to get access to foreign technology in an efficient and cost-conscious way. Questions to be asked by countries contemplating a more active information policy are outlined. A coherent development intelligence effort of which technological, industrial, agricultural and organizational intelligence are components can be seen to play a useful part in the development process.

088 Joint United Nations Information Committee
Towards a common public information policy.

In: ATAS Bulletin, n. 3. 1986. pp. 79

-----> CDC Serial

The objectives of JUNIC have been strengthened by its adoption every two years of a Joint Plan of Action which serves as the framework for practical cooperation between organizations of the UN. The plan focusses on a number of selected projects concerned with special events or issues given higher priority by the UN.

089 Jordan, Alma

Development of integrated information policies with special reference to the English-speaking Caribbean. 1983. 49 p.

Conference on the Transfer of Scholarly, Scientific and Technical Information between North and South America, Ann Arbor, Michigan, 11-14 April 1983. General

-----> CDC 5189

Gives a detailed analysis of the information climate of the Commonwealth Caribbean. Provides a historical review of the climate for the pre 1960's through to the 80's. Discusses the role of the following regional agencies which have been active in promoting co-operation for information in general and for scientific and technical information in particular: (1) Caribbean Community Secretariat; (2) Economic Commission for Latin America; (3) Association of Caribbean Universities, Research and Institutional Libraries; (4) University of the West Indies; (5) The Caribbean Agricultural Research and Development Institute; and (6) Caribbean Development Bank. Outlines the requisites for the formulation of a national information policy in the region on the premise that the effective transfer of scholarly, scientific and technical information between North and South America is mainly dependent on the levels of infrastructure now existing and which are developed in the South, enabling those countries to improve their capability and interest in generating, transferring and utilizing information. Treats the harmonization of national, regional and international information policies and strategies and hindrances to full success are identified. Six main areas of difficulty are: (1) information - the commodity which has no simply definable characteristics; (2) multi-disciplinary jargon; (3) the service entity to which there is a wide diversity of terms applied; (4) the professionals and the profession; (5) priority users and programmes; and (6) international programmes and grants. Includes references.

090 Keren, Carl
IDRC

Barbados National Library and Information Service.
Ottawa: IDRC, 1981. IDRC Manuscript Reports IDRC-MR68e
-----> CDC 858

In its search for an improved national information system, the Barbados National Council on Libraries, Archives and Documentation Services (NACOLADS), proposed the creation of a national library that would group, under a single administrative umbrella, all government-dependent library services. This report presents an alternative organizational approach to be named the Barbados Library and Information Services System (BLISS). Based on the network concept in which nodes of the network have equal status and responsibilities with the exception of such activities that serve the network as a whole, BLISS is comprised of seven principal network nodes: the Public Library and its branches; libraries in government offices and institutions; school libraries; the national archives; the University of the West Indies library and other on-campus libraries; special libraries in banks and private and semi-private institutes; and the BLISS directorate. Matters relating to personnel, resources and special facilities are discussed. The principal recommendations deal with changes in tasks and procedures within the network, training to upgrade staff and open channels for professional advancement and some job mobility and the restructuring of expenditure to establish a sound division between expenses for salaries and the acquisition of materials. Recommendations are also made on such topics as archives, school libraries, the need for database creation, regional cooperation, and to develop information services for the development needs of Barbados.

091 Menou, Michel J.

Information systems for decision support in national information policy-making and planning.

In: Information Processing and Management, vol. 21, n. 4.

1985. pp. 321-61

-----> CDC Serial

It is widely recognized that national policies and plans severely suffer from the lack of timely and relevant data which could support decision making. Through a pilot project sponsored by UNESCO/PGI and a subsequent application project at the Brazilian Institute for Information in Science and Technology (IBICT), an information system is being developed in order to overcome this obstacle. It consists of several related modules for the control of the internal production at the national agency and of the development projects and their related contracts, and for the monitoring of the information scene, both national and international. The two first modules are based upon the items of standardized work plans. The third one consists of a coherent series of data bases which contain basic information about the actors and components of the information scene, further transformed into single and aggregated numerical values. The latter are themselves aggregated and standardized according to a comprehensive list of variables, which are calculated on an international basis for the upper levels of the system. The system has been designed in order to cater to various perspectives of the information sector and the calculation of specific or composite indicators. It is linked with a bibliographic information system which controls the documents from which part of the data have been extracted, and with a referral system. The principles and examples of practical applications of the system are presented. The prospects and requirements for its full-scale implementation are discussed.

092 National and international information policies.

In: Government Publications Review, vol. 11, 1984.

093 Neelameghan, A.

Unesco

Guidelines for formulating policy on education, training and development of library and information personnel. Paris:

Unesco, 1978. 38 p. PGI/78/WS/29

-----> CDC 5728

The main objective is to provide general advice on major issues and factors to be considered in formulating an information manpower development policy, especially concerning education and training of information personnel. Covers the areas: preamble to policy guidelines; desirable attributes of information manpower policy; education planning; education and training as instruments of policy, organization and management of education programmes; regional considerations.

- 094 Parker, Stephen
Plan for the development of the national information system of St. Christopher-Nevis. Paris: Unesco, 1982.
- 095 Parker, Stephen
British Virgin Islands: proposals for the development of a National Library Service. London: British Council, 1984.
- 096 Projects in information policy and planning. Paris: Unesco, 1977. 6 p. PGI.77/CONF.501/COL.11
Advisory Committee for the General Information Programme, 1, Paris, 1977.
- 097 Reynolds, H.
Bibliographic guide to issues of national and international government information policies.
In: Government Publications Review, vol. 11, 1984. pp. 1-39
- 098 Rhoads, James B.
Unesco
Role of archives and records management in national information systems: a RAMP study. Paris: Unesco, 1983. iv; 56 p. PGI-83/WS/21
-----> CDC 5733
The aim is to assist information policy and planning specialists in creating and developing modern archival and record management systems and services, particularly in the public administration, as part of coordinated national information systems. Identifies and describes the elements that comprise a comprehensive programme for achieving the economy and efficiency in the management of current records, and for systematically identifying, preserving and encouraging the use of archives. As such the areas of records creation; records use and maintenance; records disposition and archives administration are covered.
- 099 Rouse, R.
Whither the book? considerations for library planning in the age of electronics.
In: Advances in library administration and organisation, v. 4. Greenwich, Conn.: JAI Press, 1985. pp. 159-175

100 Seminar on the Evaluation and Analysis of National Information Policy, Kingston, June 24 and June 27-29, 1985: final report. Kingston: National Council on Libraries, Archives and Documentation Services, 1985. 60 p.

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Objectives of the seminar were to produce proposals for a national information policy statement and make recommendations for action based on such a statement. The government of Jamaica was urged to formulate a policy statement which recognises the need, inter alia, for information planning at the national level. Actions to be considered by government include: co-operation of the private sector in the provision of information; integration of users in the process to determine information needs; improved library and information services especially to the underserved; adoption of legal and administrative measures to make information more easily available to all sectors of the society; particular attention should be paid to scientific and technical information; that measures be taken to exploit information generated by government; identification of financial provision for information services to facilitate increased education and training opportunities as well as conditions of service; and that priority be given to the review and upgrading of legislation affecting library and information services.

101 Slamecka, Vladimir

Implications of modern information technology for national information policy and planning. Paris: Unesco, 1979. 19 p. SC.79/WS/66
UNISIST Meeting on the Planning and Implementing of National Information Activities in Science and Technology, 3, Warsaw, 1979.

-----> CDC 4415

This report summarizes the topics of discussion of the Third UNISIST Meeting which addresses the subject of modern information technology and its implications for national information policy and programmes. Three viewpoints discussed were: the relationship of information technology to national information policy; factors influencing effective application of modern technology; and issues of future application of information technology. Urges Unesco to provide leadership in the conceptualization and progressive development of the information sector, incorporating into it the broadest realistic view of knowledge as a resource, and of information services as the means for placing it at the disposal of society.

- 102 Smith, E.V.
Roles of public and private sector resources in a national information infrastructure.
In: The future of information resources for science and technology and the role of libraries. IATUL, 1985. pp. 7-17
International Association of Technological University Libraries Meeting, 11, Oxford, 1985.
- 103 Sugimoto, Y.
Comparative study of science and technological information policy in advanced countries.
In: Library and Information Science, n. 22. 1984. pp. 143-159
- 104 Suprenant, Thomas T.
Problems and trends in international information and communication policies.
In: Information Processing and Management, vol. 23, n. 1. 1987. pp. 47-64
-----> CDC Serial
An international "information war" threatens to inhibit or block worldwide evolution into a superculture based on electronics and telecommunications. Three interlocking issues, the New World Information and Communication Order(NWICO), World Administrative Radio Conference(WARC) and Transborder Data Flow(TBDF), are examined in order to identify problems and trends in international information and communication policies.
- 105 Tell, Bjorn V.
Design and planning of national information systems.
Paris: Unesco, 1976.
- 106 Tell, Bjorn V.
Information for a changing society: some policy considerations. Paris: OECD, 1971.
- 107 Trinidad and Tobago. National Library Information and Archives Service
Working group on UWI Libraries; [draft] report. 1986.

108 Unesco; Guyana. Ministry of Information
Guyana: report on activity towards the creation of a
national information policy. Georgetown: Ministry of
Information, 1979. PGI/UNISIST/LA/1/4
-----> CDC 4421

At the official level there is no study or set of guidelines on a national information policy to date. Positive action was taken in 1977 when an Ad Hoc Committee was organized to: evaluate the existing information system and services; make recommendations to government. Notes government's commitment to a Development Support Communications policy. Discusses areas of finance and services stating that stress is placed on the importance of nationally generated data bases as the bedrock of activity in national information systems.

109 Unesco
Working Paper. Paris: Unesco, 1980. 19p PG1-80/CS/14/5
Consultation on the Co-ordinated Development of National
Information Systems in the Caribbean Region, Kingston, 19-22
May 1980. Limited
-----> CDC 3034

Reviews the conceptual framework of the pilot project for developing national and regional information systems through fostering technical cooperation amongst developing countries. Lists and analyzes the major problems of information development within the region such as the lack of policy and planning, human resources, acquisition and bibliographic control, the non-existence of archival records and several other aspects of information processing and retrieval. Discusses the areas of action given priority within the project including: cooperative and intersectoral research, education and training, co-production of materials and the provision of technical and advisory services. Examines the proposed institutional framework outlining the criteria by which existing institutions are to be evaluated if they are to be part of the programme. Such criteria include an orientation towards development, concern with an area clearly related to the action programme and the capacity to undertake regional activities. Outlines the work programme.

110 UNISIST

Information policy objectives (UNISIST proposals). Paris: Unesco, 1974. 26 p. SC/74/WS/3

-----> CDC 6052

Information policy must seek to ensure that the world's professional and specialized knowledge is fully and properly used in guiding social evolution. As such a checklist of proposals for information policy objectives is presented. This comprehensive list has a national focus, taking into consideration the UNISIST feasibility study which recommends that a governmental or government-chartered agency should exist to guide, stimulate and co-ordinate the development of information resources and services at the national, regional and international levels. Policy areas include primary communications, libraries and translations; secondary services and systems; needs and gaps in national services; networking and technological facilities; support activities; economic, financial and legal problems, aid to developing countries.

111 UNISIST Meeting on Regional Cooperation in Information Policy and Planning for Development in Latin America and the Caribbean I, Lima, 1979: final report. Paris: Unesco, 1981. 25 p. PGI.81/WS/1

112 Wesley-Tanaskovic, Inez

Guidelines on national information policy: scope, formulation and implementation. Paris: Unesco, 1985. 40 p.

-----> CDC 4523

These guidelines concentrate on major problems related to national information policy and planning, and focus on the following: identification of information requirements; promotion of effective use of information; a basic policy statement with regard to the provision of information; information policy-making procedures; the implementation of information policy; the national information co-ordinating organization. Includes a step-by-step approach to national information policy formulation and implementation.

INFORMATION SYSTEMS/NETWORKS

113 Albertus, Ursula

Unesco's role in the development of information systems and services (national, regional, international). 13 p. Seminar on the Development of a Public Administration Network for Latin America and the Caribbean, Bridgetown, 1-3 November 1978. General

-----> CDC 1629

The commitment of UNESCO to contribute to the development of national, regional and international information systems and services is manifested through the action of its General Information Programme and of its sectoral information systems for example, DARE (Social Sciences) and SPINES (Natural Sciences). This paper focuses on the General Information Programme (PGI) as it provides the conceptual framework for UNESCO's information activities as a whole. Its broad objectives are the development of information policies and plans; establishment and promotion of common methods, norms and standards for information handling; improvement and strengthening of information infrastructure and the development of the specialized human resources essential to the planning and operation of existing and future information networks, and education of information users.

114 Association for Caribbean Transformation

ACT Agricultural Information System capability. Port of Spain: ACT, 1987.

115 Beckles, David; Creasey, John
Regional approach to the collection and use of
information on expertise, research projects and scientific and
technological potential (STP) in the Caribbean. Caracas:
Unesco. General Information Programme and UNISIST, 1986. 79 p.
FMR/PGI/LAC/86/1

-----> CDC 4556

The terms of reference of the consultants were to study the feasibility of the establishment of a regional database and information system on research facilities, projects and researchers to be set up at ECLAC's Caribbean Office within the Regional Network for the Exchange of Information and Experience in Science and Technology in the Caribbean Region (CARSTIN). Science and technology and general information initiatives are reviewed. Also provides information on institutions and networks providing expertise or information e.g. CARIRI, CBIN, CARISPLAN. Survey evidence from both documentary and interview sources expresses a demand for systematic collection and use of basic reference and source information for skills and expertise as well as descriptions of research projects. Outlines a strategy for information collection and handling under the headings: the management philosophy of CARSTIN; data elements and questionnaires; collection criteria; information retrieval; ECLAC as the regional facilitator etc. Database design and automation requirements are detailed. Suggests that a pilot survey be carried out in Barbados and St. Lucia. Activities are to be divided into three phases; preparation, interviewing and analysis. Twenty recommendations conclude the report. Annexes include: summary of the regional referral system questionnaire on information specialists; data element matrix for science and technology units, questionnaire on projects or scientific and technological service activity.

116 Bisogno, Paolo

RAHNIS: cooperation between Unesco and ISRDS-CNR within the field of scientific and technological information for development.

In: Scientific and technological information for development: proceedings of the Ad-hoc Panel of Experts on Information Systems for Science and Technology for Development. New York, NY: UN, 1985. pp. 163-164

-----> CDC 6482

Describes the proposed structure and operation of the Research and Human Needs Information System (RAHNIS) which has grown out of Unesco's programme on Research and Human Needs. The system will consist of a network of co-operating regional and sub-regional information centres with one assuming the co-ordinating role. Each centre will be responsible for the collection of data on regional activities and dissemination of data collected by the entire network. Centres will operate as referral centres to encourage regional and international cooperation between scientists engaged in similar types of research and thus contribute to a reinforcement of the programme on Research and Human Needs.

117 CARDILS: project report. St. Augustine: CARDILS, 1986.

118 CARICOM

Caribbean Trade Information System Workshop, March 24-26, 1986, Barbados; working document. Georgetown: CARICOM, 1986. 91 p.

-----> CDC

The terms of reference of the mission team briefly were to identify users and their information needs, examine procedures used by existing trade information systems with a view to developing a prototype computerized system; convene a workshop for the preparation of a project proposal for a fully operational information system and assess a sample design of the prototype. The methodology used included visits to and contacts with major organizations, users and suppliers in the area, and a questionnaire to serve as a step towards the coordination of services and information for the trade sector. Outlines information needs for exporting companies and trade policy personnel, and details overall findings. A country by country analysis of trade information activities is described. Details a project proposal, the development objectives of which are: to assist Caribbean countries in the development of efficient trade information services that contribute to export development policies and activities; to establish a regional trade information network system; and to foster technical co-operation in trade information. Lists activities and time schedule for countries, outputs expected and inputs required, resource allocation for focal points, estimated costs, budget summary, description of posts etc. The Caribbean Trade Information System (CARTIS) computerized trade information system design is included as an annex.

119 CARNEID

Report of a Workshop on Information and Documentation in Education, Christchurch, Barbados, 25-29 November 1985.

Bridgetown: CARNEID, 1986. 52 p.

-----> CDC 6229

The objectives of the workshop were: to formulate cooperative action for information/documentation in education; to examine national policies in the area; to provide guidelines to help initiate, implement or improve information exchange on education; and proper utilization of information/documentation. Papers were presented on CARNEID, the Caribbean Information System and CARNEID and the acquisition, organization, retrieval and dissemination of educational information and documentation. The common problems of the sub-region were: lack of trained information personnel; lack of funds to support the infrastructure needed; lack of recognition on the part of planners and policy-makers of their need to take advantage of inter-regional and international linkages; the need for micro-computers and suitable software and regional co-operation to exploit resources to the best advantage. Among recommendations for the establishment of a Caribbean Information System for Education (CARISED)/CARNEID were: that CARNEID's Documentation Centre should act as a clearinghouse for documents/information, maintain a regional data base and provide copies of required documents; that CARNEID should be responsible for the preparation and publishing of an abstracting journal of the region's holdings.

120 Chico, Leon V.

TCDC-type mechanism for sharing technical information: the Technonet experience.

In: Scientific and technological information for development: proceedings of the Ad-hoc Panel of Experts on Information Systems for Science and Technology for Development. New York, NY: UN, 1985. pp. 165-168

-----> CDC 6482

Technonet Asia is a co-operative grouping of 14 participating organizations in 11 Asian-Pacific countries which aims at improving the quality and efficiency of production in small and medium industries (SMIs). Its programmes revolve on the following areas: technical information service; industrial extension and consultancy service; transfer and sharing of technology; enterprise and entrepreneurship development. To make the network operational all participating organizations agree to share experiences as well as industrial technical information on products and processes. Technonet relies on a cadre of information specialists and industrial extension workers who are seen as vital links between the sources of technology and the SMIs. The network has succeeded in facilitating the transfer of technology and its assimilation.

121 CLADES; Unesco. General Information Programme
 Basic principles for a regional programme to strengthen
 cooperation among national information networks and systems
 for development in Latin America and the Caribbean (INFOLAC).
 Santiago: CEPAL, 1986. 79 p. LC/L.389

-----> CDC UN

The report gives the rationale and the guidelines for the establishment of a regional programme for cooperation among existing information networks in Latin America and the Caribbean. The report is divided into five major sections - introduction, programme objectives, modalities of programme action, institutional framework and regional programme areas. The need for sharing of information resources and benefits because of the constraints of operating individual information networks is discussed. The broad objectives of the Programme and the basic requirements which projects or activities should meet are addressed. The objectives are as follows: development of information project and programme management capabilities; evaluation of modern information management technologies; compatibilities; interconnection and systemization of data bases; promotion of information services utilization; human resource training. The proposed programme would cover a period of five years and would consist of a group of specific projects in priority areas aimed at initiating a regional cooperation effect.

122 Collins, Carol
 CARTIS update. Georgetown: CARICOM, 1987. 2 p.

-----> CDC Files (CARTIS)

The CARICOM Secretariat completed the design of the computerized Caribbean Trade Information System (CARTIS) in August 1986. The nodules consist of: company/product/country profiles; trade statistics; trade news and opportunities; bibliographic information; suppliers of trade information and services. These nodules have the capability of accepting information on diskettes directly into the system. A pilot phase was tested in Jamaica at the Jamaica National Export Corporation and at the Ministry of Trade in St. Lucia. Currently data is being input in the nodules. A proposal to secure funding for the project is being considered by UNDP and it is hoped that execution of the project with ITC as the collaborating agency should start in May 1987.

123 Defay, Jacques

Some priorities in a global network of science and technology information.

In: Scientific and technological information for development: proceedings of the Ad-hoc Panel of Experts on Information Systems for Science and Technology for Development. New York, NY: UN, 1985. pp. 143-148

-----> CDC 6482

Priorities to be considered include: categories of scientific and technological users; categories of primary information and literature; means of access to stored information; non-scientific and non-technological information; concept of global scientific and technological network and co-operation of the network exclusively with national information systems. Concludes that the improvement of existing systems to meet the requirements of developing countries as well as new initiatives should be the aim of the network. In this concept the role of national governments and their focal points would be to help establish the basis and conditions for wide-spread and decentralized use of the system, and also to provide a national catalog to ensure maximum use of documents in the country and to minimize the need for international lending and photocopy services.

124 Durrant, Fay

Report of a consultancy mission on behalf of IDRC to make recommendations concerning the establishment of an OECS Regional Network, and the resources (human, material, financial) required to establish a subregional network. Ottawa: IDRC, 1985.

125 Durrant, Fay

Regional information system strategy for the Caribbean to the year 2000. Port of Spain: ECLAC. Subregional Headquarters for the Caribbean, 1987. 123p. WP/RIS/L.87/1 Meeting on Regional Information System Strategy for the Caribbean, Port of Spain, 27-29 May 1987.

-----> CDC UN

In an effort to identify the relevant issues which impact on the regional information systems, examines the factors influencing their development, the available resources in the region and the national policies to be implemented in the next decade. The priority sectors as identified by member states, information needs and services required, mandates of relevant organizations, the activities of regional and international organizations, resources and national policies are analyzed. The mechanisms to facilitate the national and regional information flow are outlined, noting that the lack of intra-regional data communication facilities is a barrier. It is recommended that UWIDITE be expanded to provide the basis of a publicly available regional data network. Proposes that linkages of the system with the national and regional mass media will provide for wider dissemination; and the establishment of a regional network of information systems as the main coordinating mechanism. Recommendations are outlined under the following headings: design of regional systems, input, data processing and dissemination of information.

126 ECLA. CDCC

Workshop on Caribbean Energy Information System, Port of Spain, Trinidad, 14-18 May 1984. Port of Spain: ECLA, 1984. 5 p. CDCC/8/CRP.2

-----> CDC UN

Outlines the subject areas of importance, the type of information, data input and demand on services, present resources and existing gaps in services. Recommends the formation of a Caribbean Energy Information System (CENIS), the overall goal of which would be to enhance the region's capabilities in terms of energy information, collection, storage and utilization. Presents details of a six point plan of action for immediate implementation.

127 ECLAC. CDCC

Patent information and documentation unit within the Caribbean Documentation Centre, ECLAC/Port of Spain: background, activities and services. Port of Spain: ECLAC, 1986. 22 p. LC/CAR/G.172

-----> CDC UN

The unit established in May 1985 acts as the coordinating centre for the collection of granted or re-registered patent documents in the Subregion and forms the Caribbean Patent Information Network (CARPIN), a subregional information system in the field of industrial property. In addition the unit classifies these patent documents according to WIPO International Patent Classification System; prepares search files, maintains a computerized data base, CARPAT; stores hard copies with a view to maintaining a microform system; provides an information service to users from industrial enterprises, governmental agencies, research and development institutions. Includes several appendices relating to operations of the unit.

128 ECLAC. Subregional Headquarters for the Caribbean;
CARICOM

Report of the Meeting on Regional Information System Strategy for the Caribbean. Port of Spain: ECLAC. Subregional Headquarters for the Caribbean. , 1987. 29p. LC/CAR/G.228

Meeting on Regional Information System Strategy for the Caribbean, Port of Spain, 27-29 May 1987.

-----> CDC UN

The Meeting discussed and made recommendations on the Consultant's report on a regional information system strategy. It was recommended that the systems be grouped under three main categories: science and technology, social sciences and the humanities. Compatible data structures should be established to ensure communication between the systems. Recommendations also related to national information policies; facilities for the electronic transfer of data; repackaging and dissemination of system holdings; and the main agencies to be employed in the dissemination of such, among others. The formulation of a Consultative Committee to monitor the policies was proposed. Includes an executive summary of the Consultant's report.

129 Francis, Hannah; Evelyn, Shirley

CAGRIS: a strategy for the dissemination of Caribbean agricultural information. St. Augustine: UWI Library, 1985. 10 p.

Seminar on the Strengthening of Regional Agricultural Research in the Caribbean, Port of Spain, 3-6 December 1985.

-----> CDC 6510

This sectoral network is proposed to support agricultural planning, education, research and development and production by making timely and relevant agricultural information available. Its goals are to: coordinate at the national and subregional levels, the services offered by agricultural information units; train a cadre of information intermediaries to manage these units and participate in CAGRIS; develop services for users of the system and create a depository of research results provided in the region. The operational structure, based on AGRIS and CARIS, encourages all countries to participate in preparation of input and dissemination of output and entrusts management and central processing to a major organization. CAGRIS is to maintain links with AGRIS, AGRINTER and CARIS. Work has begun on the compilation of a regional inventory with the collection of data relating to current research in Trinidad and Tobago.

130 Globachev, O.I.; Chakhmakhchev, A.G.

Systems of information support and services of science, technology, and industrial production in CMEA member countries. Moscow: UNIDO, 1986.

131 Horrocks, Norman; Lesser, Barry; Oxley, John H.; Vagianos, Louis

Issues relating to a United Nations global referral network: an overview.

In: Scientific and technological information for development: proceedings of the Ad-hoc Panel of Experts on Information Systems for Science and Technology for Development. New York, NY: UN, 1985. pp. 25-37

-----> CDC 6482

Highlights some of the more important problems to be resolved before implementation of the global referral network can proceed. Issues regarding information division, governance, cost, interfaces and education are the major problems discussed. Notes that a common thread has emerged throughout: the benefits which proper construction of the system can achieve are extraordinary, if appropriate means and ends are clearly articulated at the outset.

132 IDRC project summary: Caribbean Technological Consultancy Service. Ottawa: IDRC, 1984.

133 IDRC project summary: Debt Recording and Management System (ECCB). Ottawa: IDRC, 1986.

134 IDRC project summary: Market Information System Project Phases I and II. Ottawa: IDRC, 1981.

135 IDRC project summary: Project for the Development of the Information Network of the Organization of Eastern Caribbean States (OECS INFONET). Ottawa: IDRC, 1986.

136 IDRC project summary: the Caribbean Agricultural Research and Development Institute Literature Service (CARDILS). Ottawa: IDRC, 1981.

137 Menou, Michel J.

Information systems for decision support in national information policy-making and planning.

In: Information Processing and Management, vol. 21, n. 4. 1985. pp. 321-61

-----> CDC Serial

It is widely recognized that national policies and plans severely suffer from the lack of timely and relevant data which could support decision making. Through a pilot project sponsored by UNESCO/PGI and a subsequent application project at the Brazilian Institute for Information in Science and Technology (IBICT), an information system is being developed in order to overcome this obstacle. It consists of several related modules for the control of the internal production at the national agency and of the development projects and their related contracts, and for the monitoring of the information scene, both national and international. The two first modules are based upon the items of standardized work plans. The third one consists of a coherent series of data bases which contain basic information about the actors and components of the information scene, further transformed into single and aggregated numerical values. The latter are themselves aggregated and standardized according to a comprehensive list of variables, which are calculated on an international basis for the upper levels of the system. The system has been designed in order to cater to various perspectives of the information sector and the calculation of specific or composite indicators. It is linked with a bibliographic information system which controls the documents from which part of the data have been extracted, and with a referral system. The principles and examples of practical applications of the system are presented. The prospects and requirements for its full-scale implementation are discussed.

138 Mitchell, Carl L.

Assessment of requests to IDRC for fisheries and marine sciences information systems - Eastern Caribbean. Ottawa: IDRC, 1986.

139 Osborn, Paul

SATIS: a network of institutions.

In: Scientific and technological information for development: proceedings of the Ad-hoc Panel of Experts in Information Systems for Science and Technology for Développement. New York, NY: UN, 1985. pp. 172-175

-----> CDC 6482

Describes SATIS- Socially Appropriate Technology International Information Services- which specializes in information and communication on the manufacture, maintenance and management of technologies and processes for popular development. Programme areas are access to and exchange of information, diffusion of information and resource development, resource guides. Operations in each of the areas are briefly described. Outlines points for attention for SATIS' further growth among which is evaluation of the technical quality and applicability of available information in facilitating viable and sustainable development.

140 Primus, Wilma J.

Caribbean Information Network; final report, 12 February 1985-28 February 1987. Port of Spain: Caribbean Documentation Centre, 1987. 22 p.

-----> CDC (Day) File

The project is designed to enable the Caribbean Documentation Centre to mechanize its data processing and production services and to expand the coverage of the Caribbean Information System to include an information network on patent information. Activities accomplished are reviewed under: computerization, document delivery and access to external databases, computer facilities at the Trinidad and Tobago focal point, the Patent Information and Documentation Unit, workshops and other outreach programmes to transfer computerized skills and the promotion of services. Includes as an annex the procedure for the computerized production of CARISPLAN Abstracts.

141 Primus, Wilma J.

Microcomputers in an information network: the Caribbean situation.

In: International Online Information Meeting, 7, London 6-8 December 1983. New Jersey: Learned Information, 1984.

-----> CDC

The paper describes briefly the structure, functions and activities of a vibrant information network in the Caribbean - the Caribbean Information System for Economic and Social Planning - but one which does not at present make use of telecommunications technology as a medium for information transfer. While there is a sizeable demand for data communications within the Caribbean, as well as considerable potential demand for access to data outside the sub-region, a short-term solution using in-house microcomputers at the national focal points for data entry and retrieval is recommended.

142 Production and Marketing Information System: [report of feasibility study]. Georgetown: CARICOM, 1987.

143 Ruhl, Mary, J.

Public and private data bases and services in the United States: their availability and usability in developing countries.

In: Scientific and technological information for development: proceedings of the Ad-hoc Panel of Experts on Information Systems for Science and Technology for Development. New York, NY: UN, 1985. pp. 113-133

-----> CDC 6482

Addresses the following topics: S+T information in developing countries; information resources; user requirements; information technology; costs; administrative obstacles; interactions with users. Concludes that US data bases contain valuable information to scientists in developing countries, however administrative issues are more instrumental in the availability of information services than technological ones. Finance, user training and experience in searching data bases are also important considerations. Notes that the value of the databases must be increased. This should occur as the country becomes a high level user and as producers solicit the country's publications. Includes several recommendations.

- 144 Stalberg, Christian
 ECONET: a network with a mission.
 In: VITA News, 1986. pp. 16-17
 -----> CDC

ECONET, established in 1983, has grown into an international network of 260 users in over half a dozen countries. The network is for NGOs and academic institutions worldwide that are involved with issues of environmental protection, sustainable development and disaster relief. ECONET poses the question to what extent are computer telecommunication technologies relevant to the needs of developing countries. Identifies support groups which exist to strengthen the work and impact of the grass roots organizations working in villages. These groups provide information services, training and logistical help.

- 145 Trinidad and Tobago. Ministry of Agriculture, Lands and Food Production
 Draft outline of fisheries information management needs and draft action proposal. Port of Spain: Ministry of Agriculture, Lands and Food Production, 1986.

- 146 Trinidad and Tobago. National Library Information and Archives Service
 Working group on special libraries information network; [draft] final report. Port of Spain: s.n., 1986. [90 p.]
 -----> CDC 6509

Describes the findings of a questionnaire survey of all types of special libraries, information units and documentation centres. Assesses the existing facilities in relation to national goals and priorities and desirable standards and then makes proposals for the future development of a network structure to improve the delivery of information services by maximizing the use of resources. Among these proposals are the introduction of library and information networks using modern computer and telecommunications technology; the setting up of an Information Network Division (INDIV) in the NALIAS structure and the possible grouping of libraries into two main sectoral networks - science and technology and socio-economic information. Twenty six recommendations under the headings - future structure and policies, automation, funding, staffing, resources and user services are listed. A draft information policy statement concludes the report. Appendices include sample questionnaire; network membership lists, science and technology and social sciences network - subject arrangement.

147 UN. Centre for Science and Technology for Development
Existing and planned information systems and services of
the organizations of the United Nations System.
In: Scientific and technological information for
development: proceedings of the Ad-hoc Panel of Experts on
Information Systems for Science and Technology for Development.
New York, NY: UN, 1985. pp. 155-162

-----> CDC 6482

Provides a short review of all the scientific and
technological information systems and services of the
organizations of the UN and their existing and planned
activities. Included are DHL/UNBIS, PSCA/Outer Space, DIESA,
UNCTC, ECLAC, ECA, ESCAP, UNIDO, UNEP, UNCHS(Habitat), UNDP,
UNFSSTD, UNCTAD, UNU, FAO, ILO, Unesco, WHO, WIPO, WMO, IAEA
and ACCIS.

148 UN. Centre for Science and Technology for Development
Information system for science and technology for
development: issues for consideration.
In: Scientific and technological information for
development: proceedings of the Ad-hoc Panel of Experts on
Information Systems for Science and Technology for Development.
New York, NY: UN, 1985. pp. 19-22

-----> CDC 6482

Identifies some of the principal issues for discussion by the
panel to serve as input for the preparation of the report to
the Intergovernmental Committee. Areas focussed on include:
development of national information systems on science and
technology; trends in information processing and
communication; nature of scientific and technological
information required; linkages with international systems; and
a global international network on science and technology.

149 Unesco

Consultation on the Coordinated Development of National Information Systems in the Caribbean region; final report and recommendations. Paris: Unesco, 1980. 32 p. PGI-80/WS/20

-----> CDC 1757

Summary report of a meeting to discuss the priorities for national information development; the structure and contents of the activities to be implemented by the Unesco Pilot Project for Coordinated Development of National Information Systems in the Caribbean; and the modalities of implementation. Problems which affect information infrastructure and development are human resources, development of national and regional data communications systems and sensitization of government planners and policy-makers. Other major problem areas discussed include acquisitions, archives, abstracting and reviewing literature, on-line retrieval and data communications systems. Specific problems of the less developed countries (LDCs) and more developed countries (MDCs) are differentiated. Recommendations to the governments of the region and to the LDCs are specified. Recommendations for all countries relate to policy and planning, human resources, education and training, acquisitions, networking, inventories and directories, telecommunications, document reproduction, current awareness services and creation of literature. The Action Plan for implementation in Phases I and II of the Project is set out, stating the date, period, cost and source of funding for each activity.

150 Unesco

CARSTIN Consultation Meeting, 1, Port of Spain, Trinidad, 12-14 December 1984; final report and recommendations. Caracas: Unesco, 1984. 12 p. PGI-84/CARSTIN-CONSULT I/6

-----> CDC 4568

The Meeting was convened to seek and receive advice from specialists in the Caribbean on the effective implementation of the Regional Network for the Exchange of Information and Experience in Science and Technology for Development (CARSTIN). The status of STI in the countries are outlined under the headings: infrastructure, manpower, user needs, constraints in providing required services; perceived advantages of participation in CARSTIN. The discussion centred around CARSTIN's objectives which are: to build up the national and regional STI infrastructure; create a framework for the exchange of STI and experience; and enhance the national and regional capacity for STI handling and use. Issues to be addressed on a short and medium-term basis include: STI policies; computerization, access to external data bases, telecommunications and standardization; infrastructure and manpower development.

151 Unesco
CARSTIN Consultation Meeting, 2, Castries, St. Lucia,
20-22 October 1986; final report and recommendations. Caracas:
Unesco, 1986. 58 p. PGI-86/CARSTIN-CONSULT II/6

-----> CDC 4569

The eight priority actions identified for 1985-1986 at the first consultation meeting were in various stages of implementation. Lists activities implemented among which were: pilot project for a computerized regional referral system on R+D projects, specialists and institutional expertise and facilities in S+T applied to development; pilot project for a regional technology transfer information support system; pilot project for a regional data base and information system on marine science and technology; Caribbean Information System on New and Renewable Sources of Energy (NRSE/1). The national information infrastructures ranged from well developed and coordinated information systems to the absence of any formalized structure. Personnel, training, and support for information were identified as problems. Activities at CARIRI, ECLAC, Institute of Marine Affairs, Scientific Research Council and UWI, of relevance to the meeting were described. Recommendations to the member states of the subregion for urgent attention are: training of personnel; adoption of a national information policy and building up of a national information system; improvement of the telecommunications infrastructure and the provision of sufficient financial resources. Further development of on-going projects and seven new projects were also recommended. Includes several annexes.

152 Unesco

Working Paper. Paris: Unesco, 1980. 19p PGI-80/CS/14/5
 Consultation on the Co-ordinated Development of National
 Information Systems in the Caribbean Region, Kingston, 19-22
 May 1980. Limited

-----> CDC 3034

Reviews the conceptual framework of the pilot project for developing national and regional information systems through fostering technical cooperation amongst developing countries. Lists and analyzes the major problems of information development within the region such as the lack of policy and planning, human resources, acquisition and bibliographic control, the non-existence of archival records and several other aspects of information processing and retrieval. Discusses the areas of action given priority within the project including: cooperative and intersectoral research, education and training; co-production of materials and the provision of technical and advisory services. Examines the proposed institutional framework outlining the criteria by which existing institutions are to be evaluated if they are to be part of the programme. Such criteria include an orientation towards development, concern with an area clearly related to the action programme and the capacity to undertake regional activities. Outlines the work programme.

153 Unesco. General Information Programme

First Meeting of the Bureau of the Pilot Project for the Co-ordinated Development of National Information Systems in the Caribbean, Caracas, 1982; final report. Caracas: Unesco, 1982. 9 p. PGI-82/D11/80/1/Bur.1

-----> CDC

Reviews project activities in the area of policy and planning, human resources, information infrastructure development, standardization and dissemination of information. Recommends that a regional consultant mission be set up to make a detailed plan for the establishment of the referral network; that a second manpower survey be carried out in 1983; and that the work accomplished by the UWI Department of Library Studies be assessed and its future orientation re-defined according to present and projected needs. Other recommendations deal with training courses for archivists and librarians. The Action Plan of the Kingston meeting is also reviewed to determine whether new orientation should be given to some activities.

154 US. Agency for International Development

LAC Regional project paper: Caribbean Justice Improvement. Washington, DC: US. AID, 1986.

INFORMATION THEORY

155 Computer science. Paris: Unesco, 1985. 27 p.
PER.85/WS/1

156 Cook, Michael
Guidelines on curriculum development in information
technology for librarians documentalists and archivists.
Paris: Unesco, 1986. v; 123 p. PGI-86/WS/26

-----> CDC

The principal aim is the promotion of harmonized education and training among librarians, information scientists and archivists, considered as the main branches of professional activity in information. Training in information technology is seen within the context of planned development, and issues concerning overall information systems and development plans, manpower planning and investment are discussed. States that there appears to be three categories into which the information technology subjects can be divided. These are: reprographics, computerized applications and telecommunications applications. Argues that the subjects should be taught in close association with strictly professional subjects. Course modules are outlined.

157 Derr, R.L.
The concept of information in ordinary discourse.
In: Information Processing and Management, vol. 21, n. 6.
1985. pp. 489-499

The concept of information as it is actually used in ordinary discourse is elucidated, using philosophical methods of conceptual analysis. Five essential properties and four derivative properties of the phenomenon of information are identified. This concept of information is contrasted with several proposed concepts in the literature of information theory, communication theory, and Information Science.

158 Galvin, T.J.
Significance of information science for the theory and practice of librarianship; [paper presented at IFLA Conference in Munich, 1983].
In: Libri, vol. 34, 1984. pp. 81-87

159 Guinchat, Claire; Menou, Michel J.
General introduction to the techniques of information and documentation work. Paris: Unesco, 1983. 340 p.

- 160 Hirshleifer, Jack
Where are we in the theory of information.
In: American Economic Review, vol. 63, supplement. 1973. pp. 31-39
- 161 Machlup, Fritz; Leeson, Kenneth.
Information through the printed word: the dissemination of scientific, scholarly and intellectual knowledge. New York, NY: Praeger, 1980. 4 v..
- 162 Regional Seminar on Curriculum Development in Information Studies, Bangkok 1985; final report. Paris: Unesco, 1985. 38 p. PGI.85/WS/33
- 163 Siforov, V.I.
The science of information and its problems.
In: International Forum on Information and Documentation, vol. 8, 1983. pp. 16-21
- 164 Zunde, Pranas
Selected bibliography on information theory applications to information science and related subject areas.
In: Information Processing and Management, vol. 20, n. 3. 1984. pp. 417-497
-----> CDC Serial
A compilation of a selective list of documents which focus on information theory applications to information systems' analysis and design. The bibliography is organized alphabetically by author and includes a subject index.
- 165 Zunde, Pranas, ed.
Information theory applications to information science; proceedings of the Workshop on Information Theory Applications to Information Science Atlanta, US, 15-16 April 1982.
In: Information Processing and Management, vol. 20, n. 3 (special issue). 1984.
-----> CDC Serial
Contains papers presented to the workshop organized with the intention to evaluate the theoretical and practical ramifications of information theory in information science and information engineering. Among topics covered were: the growth of knowledge; the problems of information science and the application of information theory in the search for solutions; Shannon's information measures and their usefulness beyond communication theory and engineering; and data as information.

INFORMATICS

- 166 Abramson, Norman
Data communication and information exchange network (ASTINFONET); pilot project, phase 1: Asia-Pacific region (mission). Paris: Unesco, 1985. 43 p. FMR/PGI/85/145 RP/1984-1985/VII/1.3/Technical
- 167 Alvarez, J. et al
Informatics and small computers in Latin America.
In: Journal of the American Society of Information Science, vol. 36, 1985. pp. 259-67
- 168 Arthur Andersen and Co.
Trends in information processing technology.
In: ATAS Bulletin, n. 3. 1986. pp. 17-21
Highlights the trends in some key aspects of computer and communications technology focussing on microcomputers and storage media. In the case of the former, states that the control phase in the use of PCs is at hand. The pros and cons of optical storage are discussed; noting that optical technology promises to significantly reduce the cost of information storage in the future. Predicts that systems of the future will be implemented on a common technical infrastructure capable of delivering each type of function to a single intelligent workstation. The infrastructure will feature a three-level hierarchy with a mainframe at the centre, departmental computers at the next level and intelligent workstations (PCs), connected by LANs, providing the human interface.

169 Baark, Erik

Appropriate information technology: a cross-cultural perspective.

In: Unesco. Journal of Information Science, Librarianship and Archives Administration, vol. 4, n. 4. 1982. pp. 263-268

-----> CDC Serial

Reviews the criteria for assessment of appropriate information technology - resource requirements, effects of technological change and the functions of technology. Comparing the characteristics of modern information technology developed and applied in the industrialized societies of the North with the constraints for information utilization in the developing countries of the South, however, it becomes apparent that although cost reductions may facilitate the use of such technologies, the effects and functions of advanced information technology are not appropriate in the context of the South. Options for the South lie in the development of software geared to a pattern of utilization emphasizing direct access to relevant information, the development of information networks and the employment of human intermediaries between advanced information complexes and information users.

170 Baark, Erik

Constraints and options for the development of new information technologies.

In: ATAS Bulletin, n. 3. 1986. pp. 136-140

-----> CDC Serial

Outlines constraints facing developing countries associated with new information technologies - infrastructural bottlenecks, economic and social factors, constraints facing policy-making, effect of new information technologies and transborder data flow. Notes that policies for the promotion and regulation of new information technologies must cover: the production of hardware; the development of systems technology and applications. Sectors of education, research and product development are identified as most relevant for policy action.

171 Boon, Gerald K.

Information technology: a brief assessment in a North-South perspective.

In: Proceedings of the Society for International Development on the Information Revolution and Developing Countries. Rome: 1986.

172 Chen, Ching-Chih

Libraries in the information age: where are the microcomputer and laser optical disc technologies taking us. In: Microcomputers for Information Management, vol. 3, n. 4. 1986. pp. 253-265

-----> CDC Serial

The paper intends to illustrate how information technologies have had, and will continue to have, a fundamental impact on the manner in which information can and will be used. Since a library is one of the many information providers in this information age, clearly its role has changed greatly. These changes are illustrated by reviewing first the library's earlier responses to new information technology and then by discussing how recent technological developments have dramatically changed the mode of library operations and services. Emphasis has been placed on the impact of the recent years' dynamic and revolutionary developments of microcomputer and laser optical disc technologies on library information delivery and services. In order for libraries to thrive in this flamboyant environment, they must learn to keep pace with the whirlwind pace of new technological developments and sharpen their ability to conceptualize and develop new appropriate information programs for promoting better information access.

173 Clutterbuck, David

Informatics takes off in the Third World. In: International Management, 1982. pp. 25-26

174 Comanie, Benjamin M.

Information technology and cultural change: towards a new literacy.

In: ATAS Bulletin, n. 3. 1986. pp. 91-94

-----> CDC Serial

The new literacy is the bundle of information skills that may be required to function in society, skills that may evolve from the capabilities made possible by the increasingly widespread use of inexpensive communications (computer and communications) technology. The current notion of literacy has evolved from the technology of the quill pen, paper, movable type and the mechanically powered rotary press. The foundation of the new literacy is the social and cultural change likely to come about from the increased use of digital electronic processing. The new literacy is expected to develop in 2 stages: In Stage I, we may be using newer processes and formats for substantive manipulation, retrieval and storage but thinking about the substance in traditional ways. Stage II, where we are at present involves the expanded use of intelligent devices in many aspects of life. This controversial observation, new literacy may involve a lessening of print dominated behaviour, accompanied by the development of intellectual and creative processes tied to electronically stored information.

175 Cook, Michael

Guidelines on curriculum development in information technology for librarians documentalists and archivists.

Paris: Unesco, 1986. v; 123 p. PGI-86/WS/26

-----> CDC

The principal aim is the promotion of harmonized education and training among librarians, information scientists and archivists, considered as the main branches of professional activity in information. Training in information technology is seen within the context of planned development, and issues concerning overall information systems and development plans, manpower planning and investment are discussed. States that there appears to be three categories into which the information technology subjects can be divided. These are: reprographics, computerized applications and telecommunications applications. Argues that the subjects should be taught in close association with strictly professional subjects. Course modules are outlined.

176 Davidson, R.B.

Information technology in the Third World. Manchester: Manchester University, 1983.

- 177 Diebold, John
Information technology as a competitive weapon.
In: ATAS Bulletin, n. 3. 1986. pp. 104-106
-----> CDC Serial

The blinding pace of technological change is not only creating new opportunities and industries overnight, it is redefining the competitive edge. Many companies are recognizing information technology as a competitive weapon. There is still a wide gap, however, between current applications and the potential opportunities information technology can provide. Incorporating information technology, creating new products and services, defining the business, costs and information resource management are discussed. In conclusion, information technology is seen as a tool that can be managed to one's advantage, yielding new strategies, increased profitability and new business prospects.

- 178 Dion de Melo Teles, Jose
Reserved market strategy in Brazil.
In: ATAS Bulletin, n. 3. 1986. pp. 147-151
-----> CDC Serial

Brazil is one of the Third World nations which has successfully implemented strategies for development of the nationally owned informatics sector. Traces the successful development of this sector from the mid-70s which saw efforts to initiate its own computer capabilities and central government's support in intervening with rules and regulations to dramatically change the then existing market forces and competitive patterns controlled by multinational firms. The challenges now being faced are: to ensure that the development of informatics adequately corresponds to the overall development of the country; to reduce the dependence of locally built electronic products on the rapidly changing world market for high technology components and integrated circuits. Limitations are the lack of skilled researchers, high costs of research and development and of internal manufacturing programmes, and the small industrial consumer market.

- 179 Dougherty, Richard
 Computer revolution in research libraries.
 In: Unesco Courier, vol. 38, n. 2. 1985. pp. 26-27
 -----> CDC Serial

The appearance of new technology has created new opportunities for libraries as well as organizational stress. Technology has enabled librarians to play a more central role in providing publications, information and data. However the ability to deliver documents has not kept pace with the improvements in providing bibliographic access. One of the more important developments will be the growing interdependence between libraries and campus computer centres. States that those who formulate public policy should realize that research libraries of universities comprise a cohesive national resource.

- 180 Dunn, D.A.
 Information resources and the new information technologies: implications for public policy.
 In: Information: Reports and Bibliographies, vol. 13, n. 2. 1984. pp. 7-19

- 181 Flores, Gustavo
 Information and technological development: definition of terminologies.
 In: Scientific and technological information for development: proceedings of the Ad-hoc Panel of Experts on Information Systems for Science and Technology for Development. New York, NY: UN, 1985. pp. 23-24
 -----> CDC 6482

Proposes basic definitions for the following terms: data, information, information system, information network, informatics, communication network. Points to the need to devise a strategy for the generation, importation and assimilation not only of technologies, but also of scientific and technological information.

182 Fobes, Jeff
 Overview of informatics and development. Elmsford, NY:
 Pergamon Press, 1987. 23 p.
 International Informatics Access '87, Dallas, Tex., 17-21
 March 1987.

-----> CDC

Informatics is changing the ways the people of the world interact, their attitudes and expectations. Traces the history of information and communications technologies, defining informatics as the science of the systematic and effective treatment, especially by automated machines, of information seen as the medium for human knowledge and for communication in technical, economic and social contexts. Discusses the broad implications and effects of informatics; who wants and manages international informatics access and the need for an informatics policy. In the latter discussion, highlights the SPIN conference convened by Unesco and the IBI in 1978 which recommended the need for a national informatics policy in each country. Such a plan should: define strategies and applications priorities; elaborate a policy of governing actions for acquiring informatics; draw up training programs for technical and administrative specialists; formulate a coherent education and research policy; set up a program to establish a national informatics industry for both hardware and software.

183 Forester, Tom ed.
 Information technology revolution. Cambridge, Ma.: MIT
 Press, 1985. 674 p.

184 Gantz, John
 Managing information technology resources: who's in
 charge.

In: ATAS Bulletin, n. 3. 1986. pp. 127-

-----> CDC Serial

States that companies have commenced bringing all their information processing activities - computing and communicating resources under one roof. This has many implications for the jobs of the telecommunications, data processing, MIS managers. Discusses these implications under the following headings: technology forces, management challenge, co-ventures, merging voice and data. Notes the evolution of the post of chief information officer, chief command post of information processing activities.

185 Gonzalez, Luis E.
 Desarrollo de la informatica en los sistemas de
 educacion de paises de America Latina y el Caribe. Santiago de
 Chile: Oficina Regional de Educacion de la Unesco para
 America Latina y el Caribe, 1985. 167 p.

186 Gonzalez, Luis E.

Informatica y los recursos computacionales en la administracion y planificacion descentralizada del sistema de educacion en Chile. Santiago de Chile: Oficina Regional de Educacion de la Unesco para America Latina y el Caribe, 1985. 81 p.

187 Gotsch, Carl H.

Applications of microcomputers in third world organizations.

In: ATAS Bulletin, n. 3. 1986. pp. 69-73

-----> CDC Serial

Three main considerations to be addressed are: the necessity of ascertaining that the problem really is one in which a computer will help; care in the selection of hardware and software for successful installation; and an accurate assessment of the pool of human resources available to implement and maintain the system. The planning and budgeting, administration and control and, research environments are studied from the point of view of microcomputer applications, hardware and software and training and systems management. States that the advent of microcomputer technology provides benefits of electronic data processing at a fraction of the cost of installing a mainframe system: however, there are other costs involved e.g. training people and reorganizing the information flow. Failure to deal adequately with the institutionalization of microcomputer application can result in systems that operate at far less than their technical capability

188 Griffith, Jose-Marie

Main trends in information technology.

In: Unesco Journal of Information Science, Librarianship and Archives Administration, vol. 4, n. 4. 1982. pp. 230-238

-----> CDC Serial

In recent years, significant developments in microelectronics have considerably extended the range of possible applications of automated information handling. Some of the more promising applications of new technology - microcomputers storage technologies, digital communications, videotex and teletex - are described. Predicts that it is unlikely that there will be a total replacement of non-electronic by electronic publishing. Foresees also the replacement of microforms by electronic storage media when the process of converting from paper into electronic form is sufficiently low in cost to warrant its widespread adoption.

189 Gumbs, Barbara; Collins, Carol

Information services: prospects and strategies for the Caribbean. s.n.: s.l., 1986. 12 p.

National Seminar on Services: Prospects for Growth, 3-5 June 1986.

-----> CDC 6606

Provides an overview of activities in informatics in the region and suggests potential services for development. These are the production of software packages, and data entry services and production of online databases. Characteristics of information companies are identified and there is a discussion of issues to be addressed. The infrastructural arrangements that need to be put in place are outlined stating that the existence of the proper infrastructure will ensure that in the area of services a strong position can be maintained with regard to the international trade in services and the provision of services at home. Policies with regard to telematics, informatics and informatics laws and data protection are considered as vital to the establishment of an informatics industry.

190 Hobday, Michael

Telecommunications and information technology in Latin America: prospects and possibilities for managing the technology gap. Vienna: UNIDO, 1985. iv; 51 p. ID/WG.440/2 Regional Meeting for the Initiation of a Regional Network for Microelectronics in the ECLAC Region, Caracas, 3-7 June 1985.

-----> CDC UN

Briefly discusses the strategic importance of telecommunications both as infrastructure for information based technology and in the accumulation of microelectronic capabilities. The existing demand for digital telecommunications facilities in the developing countries could be employed as a means for leapfrogging intermediate forms of communications infrastructure and for gaining vital capabilities in the broader area of information technology. Examines the international market structure of the industry and the impact of digital technological diffusion. This process of microelectronic diffusion has opened up opportunities for entry by the developing countries. Examines the current and forecasted market demand for the region and shows that the large market, and the planned adoption of fully digital telecommunications present a potential for exploiting the leading edge properties of telecommunications. Selected countries are looked at stressing the importance of differentiating between economies of different sizes and different levels of economic and technological infrastructure. Points to possible areas of mutually beneficial international collaboration especially for the smaller countries. States however that much will depend on individual and co-operative government policy initiatives in successfully managing the technology gap.

- 191 Horowitz, I.L.
New technology, scientific information and choices for democratic societies.
In: Representation and exchange of knowledge as a basis of information processes. Amsterdam: North-Holland, 1984. pp. 397-415
Research Forum on Information Science, 5, Heidelberg, 1983.
- 192 Informatics: an era begins; an interview with Joel de Rosnay.
In: Development Forum, vol. 14, n. 8. 1986. p. 1, 4
-----> CDC Serial
States that the world is presently passing from a society centred on energy and transportation to one centred on information and communications. These changes pose problems for developing countries: access to technology; whether or not it is necessary for a developing country to use certain types of communications networks; access to large data banks of developed countries. This could mean a gap between information-rich and information-poor countries. Assumes that little by little the developing countries will provide themselves with access points to major telecommunications networks. A number of developing countries already manufacture electronic components and software programmes which can be expanded to the benefit of these countries using their cultural wealth. Warns against the temptation of isolation or autonomy which can lock a country into operating systems, software and hardware tied to that country but prevent contact with programmes in neighbouring countries or international programmes. Concludes that the world is in the reticular age in which everyone can play a role within local networks, within larger networks and ultimately in the planetary network.
- 193 Information technology and the print and publishing industries: edited proceedings of the Pergamon Infotech State of the Art Conference, London, 11-12 October 1985. Pergamon Infotech, 1985. 247 p.
- 194 Interim Intergovernmental Committee for the Intergovernmental Informatics Programme, Paris, 1984; final report. Paris: Unesco, 1985. 48 p. SC/MD/77
- 195 Jones, Kevin P.; Taylor, Heather
Design of information systems for human beings, Informatics 6: proceedings of a Conference held by the Aslib Information Group. London: Aslib, 1981. 96 p.

- 196 Kent, A., ed.; Galvin, T.J., ed.
Information technology; critical choices for library
decision makers. New York, NY: Dekker, 1982. 477 p.
- 197 Ligomenides, P.A.
Notions and dynamics of information.
In: Journal of Information Science, vol. 10, n. 4. 1985. pp.
149-58
- 198 Lutz, T.
Information - the catalyst for corporate change.
In: Data Management, 1986. pp. 25-30
Beginning with a brief history of the introduction of the
computer in the late 1950s into business, the author then
moves into problems which have emerged as the present
information revolution has been seen to create a "second
industrial revolution." Three major recommendations aimed at
the reorganization of the corporate structure conclude the
article: 1) develop the decision makers - they must learn the
characteristics of Management Information Systems and the
managing of these tools; 2) adjust the corporate culture - in
every aspect the value of information must be emphasized for
the success of the firm; 3) change the role of information
systems professionals - from technologist and computer guru to
business information counselor and guide: i.e., strong
business knowledge MUST supplement technological capability.
- 199 Lynch, C.A.; Brownrigg, E.G.
Library applications of electronic imaging technology.
In: Information Technology and Libraries, vol. 5, n. 2. 1986.
pp. 100-106
This paper discusses three areas in which new technology will
solve costly and long-standing library management problems.
The concerns described include storage requirements,
preservation of library collections, and remote access to
library resources. Each topic is given an overview, and
applicable technologies, and further necessary technological
developments required are examined.

200 Machiraju, N. Rao

Microcomputer based informatics: some training considerations. Elmsford, NY: Pergamon Press, 1987. pp. 49-52
International Informatics Access '87, Dallas, Tex., 17-21
March 1987.

-----> CDC

The systematic planning and implementation of training programs is critical to the success of any technological innovation. Suggests an approach for organizing training programs in microcomputer based informatics by first assessing the training function, then discussing front-end analysis, developing training strategies and evaluating training outcomes. A checklist for evaluating computer software is included.

201 Martyn, John

UAP and the new information technologies.
In: Unesco Journal of Information Science, Librarianship and Archives Administration, vol. 4, n. 1. 1982. pp. 38-42

-----> CDC Serial

Recent applications of electronics to information processing and transfer e.g. videodisc and videotape, teletext and videotext, word-processing systems are briefly described. Discusses the problems and possibilities for universal availability of publications pointing out that opportunities exist for the delivery of identified documents to be done faster and cheaper than at present. Investment in equipment and training are necessary for opportunities to be realized. Concludes that whatever the technology, the requirement at the local and national levels to collect, organize and make available the local and national documentation will not change.

202 Mason, Robert M.

Office automation and information technology trends: their impact on libraries and information center management.
In: Microcomputers for Information Management, vol. 3, n. 1. 1986. pp. 1-13

-----> CDC Serial

Reviews recent research on the rate of implementation and the impact of office automation. Outlines how the impact of office automation can lead to changes in the roles and services of libraries and information professionals. The broad diversity of the information media and the growing demand for direct access to information point to a redefinition of the roles of the information professional and the information centre. The former may become more of a service manager and user advisor and the information centre is expected to offer new services and to become a centre for retraining and continuing education.

203 Matthews, J.R.

Growth and consolidation: the 1985 automated library system marketplace.

In: Library Journal, vol. 3, n. 6. 1986. pp. 25-37

This annual article reviews the progress and pitfalls experienced by the automated library system marketplace during 1985. Marketplace activity is represented by events in four segments: turnkey systems; library-developed software; software designed to run exclusively on microcomputers; and production of computer output microform catalogs. A list of turnkey vendors is appended.

204 New information technologies and development.

In: ATAS Bulletin, vol. 3, 1986. xvi; 177 p.

-----> CDC Serial

Attempts to construct a bridge of understanding between innovations in information technology and efforts to integrate these resources into the development planning process. Articles give emphasis to the search for practical approaches, methodologies and techniques which policy makers might use in identifying issues raised by the diffusion of information technologies and for determining appropriate strategies for addressing these issues. Recent advances in information technologies are examined to understand how they can be combined with more traditional information technologies to respond to the needs, conditions, resources and aspirations of each country. Five major areas covered are: technology, experiences, implications, capacity building and policy options.

205 Page, John

Informatics techniques and strategies for information transfer: working document. Paris: Unesco, 1980. 48 p.

PGI.80/CONF.612/5

UNISIST, Working Group on Technology of Systems' Interconnection, 2, Paris, 1980.

-----> CDC 4438

A brief historical background of the impact of information technology on information transfer precedes the state of the art in the functional areas in the transfer of scientific and technical information, outlining problems in these areas particularly those facing developing countries. Among these problems are mentioned the potential for information management and the processing of locally produced information. Possible solutions in terms of applying informatics technology are discussed, including other elements of an infrastructural, legal or regulatory nature. Six recommendations are included among which is the call for the establishment of information services as the foci for the exploitation of overseas online services, organization and management of locally produced information and liaison with other overseas sources of relevant information.

206 Rada, J.

Microelectronica, la tecnologia de informacion y sus efectos en los países en via de desarrollo. Mexico: El Colegio de Mexico, 1983.

207 Ross, Ian M.

Telecommunications and the new information technologies: trends and implications.

In: ATAS Bulletin, n. 3. 1986. pp. 13-17

-----> CDC Serial

The communication of information creates and advances societies. The proper application of today's communication and information technologies can play a major role in helping a country to educate and train its people, increase productivity and efficiency. The current information age has been made possible by the technology developed for the telephone network. An overview of the essential elements involved - terminals, transmission, switching and signalling - is presented. Voice and data services are reviewed and the underlying technologies and trends e.g. microelectronics, photonics and software are seen as holding the potential for a great variety of new services in important sectors e.g. agriculture and industry. Fundamental planning, cost-reactive communication, systems engineering and standards are some of the criteria to be considered by any country seeking to enter the information age.

- 208 Tanahashi, T.K.
Informatics and Third World development: perspective and prospect for an intergovernmental programme. Paris: Unesco, 1985. 35 p. SC.85/WS/35
- 209 Tocatlian, Jacques
Promotion of information technology applications in Third World countries: PGI's role. Paris: Unesco, 1985. 13 p. PGI.85/WS/15
- 210 Towards an information technology resource strategy in development.
In: ATAS Bulletin, n. 3. 1986. pp. 163-165
-----> CDC Serial
Hypothesizes that the growth of the information sector reflects the capacity of an economy to: add value to the factors of production and thereby create new wealth; distribute this new wealth more efficiently and equitably. Conceptualizes three stages from the perspective of the North and the South: the actual development balance, the information sector development strategy and the new development balance. States that the extent to which the South examines the relationship between the growth of the information sector and development and integrates their understanding into effective strategies will be reflected in its position to offer new knowledge and understanding of this subject to the world. The production, processing and use of information technologies require co-operation, integration and interdependence among individuals, cultures, nations and states.
- 211 Unesco
Informatics for development: framework for an Intergovernmental Informatics Programme. Paris: Unesco, 1985. 31 p. SC.85/WS/60
- 212 Unesco
Setting up of the Intergovernmental Informatics Programme and of a Committee to be responsible for co-ordinating that Programme. Paris: Unesco, 1985. 7 p. Unesco General Conference, 23, Sofia, 1985.

213 Van Reeken, A.J.

Fundamentals and tools for networking in terminology.

In: pp. 132-142 Networking in terminology: international co-operation in terminology work.

In July 1982 a project was started within the Netherlands Standards Institute to produce a vocabulary of informatics. This paper reports on the scope, method and problems of the project, and concludes with a plea for a whole series of such bilingual information vocabularies of ISO-based terms. The project was based on the following ISO categories: data processing, information and documentation, office machines, and micrographics.

214 Weingarten, Fred W.

Information technology assessment.

In: ATAS Bulletin, n. 3. 1986. pp. 116-120

-----> CDC Serial

New information technologies promise an endless stream of benefits: applications that serve societal needs of people for food, shelter and education; technologies that generate employment and economic growth and technologies that link people and countries. The principal policy goal facing Governments is to manage the introduction of these technologies in such a way that the benefits are realized and social costs minimized.

TELEMATICS AND TRANSBORDER DATA FLOWS

215 Abramson, Norman

Data communication and information exchange network (ASTINFONET); pilot project, phase 1: Asia-Pacific region (mission). Paris: Unesco, 1985. 43 p. FMR/PGI/85/145
 RP/1984-1985/VII/1.3/Technical

216 ACCIS

Towards computer-based communications systems.

In: ATAS Bulletin, n. 3. 1986. pp. 76-77

-----> CDC Serial

Presents findings and recommendations of a review of studies on telecommunication links to determine the utility of telecommunication links among the specialized agencies of the U.N.; the review should indicate alternative possibilities cost and benefits. Recommends that there should be one unified common facility to which a broad range of users could link and via which they could access their electronic mail. The possibilities of the International Computing Centre playing such a broad role should be carefully investigated.

217 Akhtar, Salim

Role of communications in technology transfer.

In: VITA News, 1986. pp. 4-5, 20

-----> CDC

Technology transfer data flow is moved by the international telephone network and by communication satellite. Of the 450 million telephone units throughout the world 10% are found in Africa, Asia and Latin America. Among the developing countries only China and India have successful satellite programs. Communications hardware, telecommunications software and satellite systems have become an economic factor that can facilitate economic linkages among developing countries. The rapid decrease in costs has enabled many developing countries to promote technology transfer on a wider scale. Unfortunately national and regional infrastructures continue to be inadequate and new technologies transferred cannot lead to an immediate increase in productivity as far as overall national development is concerned. Calls for institutions as Volunteers in Technical Assistance to co-operate closely with developing countries in all aspects of communications technology.

218 Battu, Daniel P.; Rose, John B.

Telecommunication services for the transfer of information and data: a case study in Indonesia. Paris: Unesco, 1984. viii; 83 p. PGI-84/WS/10

-----> CDC 4460

- 219 Bellardo, T.
Telecommunications and networking.
In: Library Journal, n. 110. 1985. pp. 51-52
Mid-Year Meeting of the American Society for Information Sciences, 14, 1985.
- 220 Black, John B.
Computer conferencing, its potential role in Caribbean science and technology information exchange: Caribbean region - (mission). Paris: Unesco, 1985. 24 p. FMR/PGI/LAC/85/2
- 221 Black, John B.
Report on computer conferencing in the Caribbean region. Paris: Unesco, 1985.
- 222 Boss, R.W.
Telecommunications for library management. White Plains, NY: Knowledge Industry Publications, 1985. 180 p.
- 223 Carne, E.B.
Modern telecommunications. New York, NY: Plenum Press, 293 p.
This volume presents an integrated view of contemporary telecommunications, including a survey of user needs and motivations that affect the expansion of such new services as teleconferencing, electronic mail, videotex, and interactive television. New dimensions in the field are also studied, including: terrestrial and satellite facilities, and future residential and business applications are explored. The companies involved in competition in the field are listed and the basic science research available to the reader is presented in bibliography form.
- 224 Cawkell, A.E.
The information society, Part 3 [Telecommunication networks and socio-economic policies].
In: Electronics and Wireless World, vol. 90, n. 1585. 1984. pp. 25-26
Discusses telecommunication networks and the interplay between techno-economic politics and standards - particularly the OSI and SNA models.

225 Crane, N.R.
Unesco

Public data network services; background document.
Paris: Unesco, 1980. 25 p. PGI-80/Conf.612/Col.2
UNISIST Working Group on Technology of Systems'
Interconnection, 2, Paris, 1-4 December 1981.
-----> CDC 4436

After a brief description of the data transmission process, the document discusses the user classes of service; international user service and facilities; and call set up and clear down times. Includes as annexes: international user classes of service in public data networks; recommendation X.2 revised international user services and facilities in public data networks; provisional objectives for call set-up and clear-down times in public synchronous data networks (circuit switching); hypothetical reference connections for public synchronous data networks.

226 Divilbiss, J.L., ed.

Telecommunications: making sense of new technology and new legislation. ERIC, 1985. 120 p.
1984 Clinic on Library Applications of Data Processing, 14-16 April 1984.

This collection of papers addresses the impact of rapidly changing telecommunications technology on libraries. A brief introduction by James L. Divilbiss sets the stage for the following papers: (1) "Making Sense of New Technologies and New Legislation" (Joseph Ford); (2) "Selection and Use of Telecommunications Consultants for Library Automation" (Rodney B. Perry); (3) "Modeling Library Communications Traffic" (John C. Kountz); (4) "Telecommunications for Libraries" (Richard W. Boss); (5) "A Collection of Books" (Herbert P. Crane); (6) "Telecommunications in the Office" (Michael A. Flavin); (7) "Electronic Mail Services in the Library and Information Center Community" (Dennis Oliver); (8) "Packet Radio for Library Online Catalogs" (Edwin B. Brownrigg); (9) "Narrowband Teleconferencing" (Joan Maier McKean); and (10) "Establishing a Data Communications Network: A Case Study" (Deborah K. Conrad) (ERIC).

227 Eckart, Hummel

Data transmission and new teleinformatic services: CCITT achievements. Paris: Unesco, 1980. 58 p.
PGI.80/Conf.612.6

UNISIST Working Group on Technology of Systems'
Interconnection, 2, Paris, 1-4 December 1981.

Divided into four parts, the document deals with data transmission over the telephone network; channeling equipment for leased or switched applications; public data networks; and new CCIT defined services - teletex, facsimile and videotex.

228 Garriot, Gary

Low-cost satellite communications for developing countries.

In: Scientific and technological information for development: proceedings of the Ad-hoc Panel of Experts on Information Systems for Science and Technology for Development. New York, NY: UN, 1985. pp. 137-140 New York, NY, 1985.

-----> CDC 6482

Volunteers in Technical Assistance (VITA) and the Radio Amateur Satellite Corporation (AMSAT) propose to help developing nations gain access to needed information resources through the use of an innovative, low-cost communications satellite system called PASCAT which gets its name from the "packet radio" switching technique it uses. Projected to go into operation in mid-1986, the system's resources will be shared by the amateur radio community worldwide, by a network of technical documentation centres affiliated with VITA, by remote field stations of VITA's development projects, and by projects involving non-governmental and private voluntary organizations. A budget of the PASCAT project, examples of information needs critical for Third World agricultural development that could be met through PASCAT, and possible users of the network are detailed.

229 Gumbs, Barbara; Porter, Angela

Potential for the development of data services in the Caribbean. St. Augustine: Caribbean Industrial Research Institute, 1987. 33p.

CARICOM Regional Workshop on Services, Port of Spain, 1-4 September 1987.

-----> CDC 7004

In providing an overview of data services in the Caribbean, a chart showing telecommunication services provided by Cuba, Barbados, the Dominican Republic, Guyana, Jamaica and Trinidad and Tobago is presented. Issues to be addressed include: the provision of an intra-Caribbean data network service; an integrated approach to policy formulation; pricing policy for data services; and the choice and range of transmission links. Telecommunication issues already being addressed at national and regional levels are detailed. The upsurge in off-shore data processing establishments is discussed, stating that in the long term the technology can move towards electronic data capture. Possibilities for taking advantage of the off-shore data business as well as matters for attention are detailed. The examples of India, Mexico and Uruguay are described in the execution of policies for the development of the software industry, suggesting the promotion of this industry as a potential foreign exchange earner. Highlights of data bases in the region are presented and the creation of data bases for export is proposed as an option for consideration. Strategies for the development of national or regional data bases and national objectives on which transborder data flow can have an impact are outlined. Among recommendations presented are: that priority be given to devising mechanisms for the lowering of telecommunication tariffs and the development of intra-Caribbean facilities; the establishment of a regional software centre and clearinghouse.

230 ~~Hobday, Michael~~

Telecommunications and information technology in Latin America: prospects and possibilities for managing the technology gap. Vienna: UNIDO, 1985. iv; 51 p. ID/WG.440/2 Regional Meeting for the Initiation of a Regional Network for Microelectronics in the ECLAC Region, Caracas, 3-7 June 1985.

-----> CDC UN

Briefly discusses the strategic importance of telecommunications both as infrastructure for information based technology and in the accumulation of microelectronic capabilities. The existing demand for digital telecommunications facilities in the developing countries could be employed as a means for leapfrogging intermediate forms of communications infrastructure and for gaining vital capabilities in the broader area of information technology. Examines the international market structure of the industry and the impact of digital technological diffusion. This process of microelectronic diffusion has opened up opportunities for entry by the developing countries. Examines the current and forecasted market demand for the region and shows that the large market, and the planned adoption of fully digital telecommunications present a potential for exploiting the leading edge properties of telecommunications. Selected countries are looked at stressing the importance of differentiating between economies of different sizes and different levels of economic and technological infrastructure. Points to possible areas of mutually beneficial international collaboration especially for the smaller countries. States however that much will depend on individual and co-operative government policy initiatives in successfully managing the technology gap.

231 International Institute of Communications (UK)

Use of satellite communication for information transfer.

Paris: Unesco, 1982. 125 p. PGI.82/WS/5

-----> CDC 4462

In an examination of the potential of the satellite as a carrier of information, in comparison with conventional carriers, and with specialized telecommunication networks, the study begins with a discussion of relevant aspects of development-oriented information transfer. The emphasis is on scientific and technical information. An overview of the implications of satellite use in telecommunication is presented. This is followed by considerations in system planning and implementation with special emphasis on data communications and networks. Continues with a selection of national and international policy issues, an overview of applicable international law and regulation and concludes with observations on future action.

- 232 Irwin, Manley R.
Telecommunication industry: integration is competition.
New York, NY: Praeger, 1971.
- 233 Killen, H.B.
Data communication [Telecommunications system design].
In: Telecommunications and Data Communications System Design
with Troubleshooting. Englewood Cliffs, NJ: Prentice-Hall
Inc., 1986. pp. 1-19
This chapter presents the basics of telecommunications.
Modulation and coding theory are discussed in sufficient
detail to permit an understanding of basic hardware such as
modems. Transmission systems are introduced and the basics of
analog and digital communications are covered.
- 234 King, D.W. et al
Telecommunications and libraries: a primer for
librarians and information managers. White Plains, NY:
Knowledge Industry Publications, 1981. 184 p.
- 235 Lalor, Gerald
University of the West Indies Distance Teaching
Experiment (UWIDITE). Mona: UWI, 1981.
- 236 MacKay, Neilson A.
Telematics in Trinidad and Tobago. Port of Spain:
Tekcom Consultants Ltd., 1987. 6 p.
-----> CDC 6607
Within the last two decades the use of telecommunications
facilities has expanded dramatically. The field of
telematics, in which telecommunications facilities are used in
conjunction with systems for control, signal and data
processing, has accounted for much of this growth. The gap in
this field between the North and the South is very wide due to
the basic requirements for telematics development, many of
which are not available in the developing world. An
opportunity for growth in telematics currently exists in
Trinidad and Tobago. Predicts moderate growth over the next
five years.

237 Mahon, F.V.

Perspectives of access to on-line information by the developing countries.

In: Unesco Journal of Information Science, Librarianship and Archives Administration, vol. 4, n. 4. 1982. pp. 239-244

-----> CDC Serial

Reviews briefly the state of on-line access stating that throughout the 1970s the technology was in place to enable people mainly from the developed countries to access a wide range of information files. Examines the possibilities of extending that access through recent telecommunications development. Telematics developments - videotex, teletex and the microcomputer offer great opportunities for the improvement of information transfer. Technically there are no significant barriers to extending data communications process to the developing countries. However without the parallel development of not only documentation stores but also the necessary skills in information service development, data-base and data-bank development and training, technical access is insufficient. At the policy level, the inclusion of modern information-handling concepts in education and industrial development programmes and the consideration of new technologies in the formulation of a telecommunications policy are essential.

238 Matthews, J.R.; Williams, J.F.

Telecommunication technologies for libraries: a basic guide.

In: Library Technology Reports, vol. 19, 1983. pp. 335-394

239 Melody, W.

Development of the new communication and information industries: impact on social structures, presented at the Symposium.

Symposium on the Cultural, Social and Economic Impact of Communication Technology, Rome, 12-16 December 1983.

240 Mowlana, Hamid

International flow of information: a global report and analysis. Paris: Unesco, 1985.

241 OECD

Telecommunications: pressures and policies for change.
Paris: OECD, 1983. 142 p.

-----> CDC 3373

Presents an overview of the industry its growth and major characteristics. Examines the industry's structure and the impact of this structure on its conduct and performance. Analyses factors changing the structure and explores implications of these changes for policies targeted at the industry. Concludes that governemnts can assist in respect of regulatory policy toward the service provider and in ensuring the growth potential in the area of international competition. By increasing the quality and range of services which can be offered the industry will make a significant indirect contribution to growth.

242 Oeffinger, John C.

Merging computers and communications: a case study in Latin America. Elmsford: Pergamon Press, 1987. pp. 24-35
International Informatics Access '87, Dallas, Tex., 17-21
March 1987.

-----> CDC

Knowledge and information fuel the growth in most sectors of today's global society. Individuals need access to information in order to make the most basic to the most complex analyses and decisions. The linking of computers and communications enables one not only to access but also to manipulate large quantities of information. Internet/LACRIP a microcomputer based international network involving institutions in Brasil, Chile, Costa Rica, Mexico, Uruguay, Venezuela and the United States is used as a case study. Proposes enhancements to the case study for increasing the effectiveness of developing country access.

243 PACSAT: satellite communications for international development: UN group endorses concept and pre-PASCAT experiment is launched.

In: VITA News, 1984. pp. 4-5

-----> CDC

Describes the Digital Communications Experiment (DCE) riding on SAT-2 and its successes in the design effort using electronic mail systems, and in designing a large memory, low power, high capability, space qualified computer system using low cost commodity chips. Representatives from 10 countries in a Special Discussion Meeting of UNIDO identified PASCAT as a useful experiment. PASCAT is a co-operative effort by VITA and AMSAT to demonstrate the use of low orbit satellites as a way to transmit and receive technical information at a fraction of the cost of geo-synchronous satellites.

244 Report of Working Group on Data Services. Port of Spain: s.n., 1987. 6p.

CARICOM Regional Workshop on Services, Port of Spain, 1-4 September 1987.

-----> CDC 7007

Data services are a vital input to all economic activity. They are the infrastructure on which the production of goods and other services are based. These services have emerged as a separate activity in the wider service sector and are contributing an increasing share to GDP. Urgent consideration should be given to the focussed development of data services in the region if the Caribbean is to try to gain some degree of competitiveness in the production of goods and services while retaining a higher portion of value-added in data services through employment and the earning of foreign exchange. Among the recommendations are: that telematics authorities be established at regional and national levels with the aim of promoting the data services sector; that countries of the region be sensitized to the implications of transborder data flows and assistance should be sought with reference to the formulation of policies in this regard; that the Caribbean Governments implement recommendations of the round of GATT negotiations on data services.

245 Ross, Ian M.

Telecommunications and the new information technologies: trends and implications.

In: ATAS Bulletin, n. 3. 1986. pp. 13-17

-----> CDC Serial

The communication of information creates and advances societies. The proper application of today's communication and information technologies can play a major role in helping a country to educate and train its people, increase productivity and efficiency. The current information age has been made possible by the technology developed for the telephone network. An overview of the essential elements involved - terminals, transmission, switching and signalling is presented. Voice and data services are reviewed and the underlying technologies and trends e.g. microelectronics, photonics and software are seen as holding the potential for a great variety of new services in important sectors e.g. agriculture and industry. Fundamental planning, cost-reactive communication, systems engineering and standards are some of the criteria to be considered by any country seeking to enter the information age.

246 Sartori, E.

Transborder data flow and international communications.

In: Academic libraries: myths and realities. Association of College and Research Libraries, 1984. pp. 151-154

247 sauvant, Karl P.
 International politics of trade in data services.
 In: ATAS Bulletin, n. 3. 1986. pp. 153-155

-----> CDC Serial

The services sector - encompassing trade, transport, communications, finance, other services - has been the single largest economic sector in all developed market economies and most developing countries. Prospects for an expansion of trade in services are particularly promising for those services whose tradeability has increased because of the advent of the transnational computer-communication systems. Data services are a dynamically expanding business in their own right with international transactions growing at a rapid pace. Transborder data flows (TDF) is seen as nothing more than traded data services. Data services are seen as core services, setting parameters for the operations of most other services and economic activities in general. The international public policy framework exists for international transactions in data services. The US business community has fully recognized the importance of international transactions in services and TDF in particular and has urged government to take action. As such, the Trade and Tariff Act of 1984 was adopted and the services discussion was introduced in GATT. The developing countries opposed the inclusion of services in the GATT work programme, preferring UNCTAD as the forum. In sum, work on an international public-policy framework for trade and foreign direct investment in data services has begun. This will become an important parameter for domestic policies on data goods and services and a crucial part of a more general framework for development of the services sector.

248 Stalberg, Christian
 Digital telematics: present and future. Elmsford:
 Pergamon Press, 1987. pp. 39-48
 International Informatics Access '87, Dallas, Tex., 17-21
 March 1987.

-----> CDC

Presents an overview of the developments in international networks ranging from transmission medium through satellites to fibre optic cables. Concludes that a viable internal telecommunications infrastructure combined with an effective connection to the international networks is one of the best investments a country can make today. While there are advantages to a country investing in its own electronics industry, such investments are not necessary to begin to take advantage of the opportunities offered by the digital microelectronics revolution.

249 Suprenant, Thomas T.

Problems and trends in international information and communication policies.

In: Information Processing and Management, vol. 23, n. 1. 1987. pp. 47-64

-----> CDC Serial

An international "information war" threatens to inhibit or block worldwide evolution into a superculture based on electronics and telecommunications. Three interlocking issues, the New World Information and Communication Order (NWICO), World Administrative Radio Conference (WARC) and Transborder Data Flow (TBDF), are examined in order to identify problems and trends in international information and communication policies.

250 UN. Centre on Transnational Corporations

International trade and foreign direct investment in data services: transborder data flows in the context of services and the development process. Geneva: UNCTAD, 1984. TD/B/1016

-----> CDC UN

Data technologies form the nexus around which domestic economic and social activities and international economic exchanges will be restructured in the future. Documents developments in the data industries especially for developing countries. Opportunities include the creation of new industries among others and uncertainties can be seen in such areas as the nature of comparative advantage, technology and trade flows and the international division of labour. In all of these processes, transnational corporations play a crucial role since they occupy a central position in the world economy, and the fact that they are the principal originators, suppliers and users of data technology makes them most important agents of change. It is important for developing countries to ensure that they benefit from new technologies and that negative effects are kept to a minimum. In formulating policies in this area developing countries face a two-fold challenge: to secure a position in the new industries arising from advances in electronics and industries supplying data services; to do so while maximizing the costs imposed on established industries by policies to promote new industries.

251 UN. Centre on Transnational Corporations
 Transnational corporations and transborder data flow.
 In: O'Brien, Rita Cruise, ed. Information, economics and
 power: the North-South dimension. London: Hodder and
 Stoughton, 1983. pp. 43-69

-----> CDC 6541

Transborder data flows are international data transmissions over transnational computer communication systems which to transnational corporations are both a commercial good as well as a management tool. In light of the importance of information, the present structure of the international data market and the uneven distribution of the capabilities of applying transborder data flows, for the developing countries the concerns are: the implications of transborder dataflows in the international division of labour; their capacity to establish their own telematics and transborder-data-flow facilities; and the bargaining position of host countries vis-a-vis transnational corporations. Transborder data flows can be seen to lead to an accentuation and the emergence of imbalances between developed and developing countries. They can also be channelled to redress these imbalances. Points to the importance of research in arriving at a full appreciation of the possible costs and benefits of transborder data flows and the conditions under which the application of these flows can be most useful.

252 Unesco

Inter-agency co-ordination in support of information and communication infrastructure in developing countries.

In: ATAS Bulletin, n. 3. 1986. pp. 80-81

-----> CDC Serial

The need to examine inter-agency co-ordination was expressed in a recommendation of the UN. Committee of Information approved by the General Assembly in December 1984. The International Programme for the Development of Communication (IPDC) of Unesco has acted as a meeting ground for the different UN organizations interested in the area. An Inter-Agency Working Group was established under IPDC as an informal mechanism. ITU plays a lead role within the Working Group. ITU/IPDC's close collaboration is evident in several projects one of which will be the compilation of an interim report on the state of world communication to be prepared under the auspices of IPDC. A report on the use of new technologies for development will also be prepared by the Secretariat together with comments of ITU.

253 UNISIST Working Group on Technology of Systems' Interconnection, 2 Paris, 1-4 December 1981; report. Paris: Unesco, 1982. 21 p. PGI.82/WS/2 PGI-82/D11/CONF.1

Provides summaries of the documents of the Meeting followed by a summary of discussions which introduced the problems of Member States with regard to information access. Points to the lack of a sufficient telecommunications and informatics infrastructure as a crucial barrier to the development of networks. Discussions highlight that access to information systems does not solve all information retrieval problems for the developing countries. The lack of appropriate document delivery mechanisms, copyright, transborder data flows and their regulation and multilingual access are detailed as problems which can be caused by improved access to online systems. Unesco's programme in teleinformatics is discussed, noting that the most promising approach appears to be the development of regional computer communication networks taking account of existing national documentation, informatics and telecommunications infrastructure. Several recommendations conclude the report under the following: studies and pilot projects; methodology; international cooperation; reduction of financial obstacles to information transfer; small-scale computers in information systems; new CCIT defined services; standardization of interconnection techniques; use of computers for education and training for use of information systems.

254 Valantin, Robert; Balson, David

Choosing information technologies: case-studies in computer-based communications.

In: ATAS Bulletin, n. 3. 1986. pp. 55-58

-----> CDC Serial

A number of case studies selected from the IDRC telecommunications programme are presented to illustrate efforts to ensure that technologies have a chance to be tested and used before they are either rejected or selected by developing countries. Details particulars of a 1981 workshop on Computer-based Conferencing Systems for Developing Countries and the recommended Computer-based Conferencing System Project on the Bioconversion of Lignocellulosics; CGNET: communications for agricultural research and PACSAT: packet-satellite communications. States that although these activities have been carried out in part to ensure that the interests of developing countries are considered at the early stages in technology development, significant testing in developing-country environments to meet developing-country needs has not yet taken place and should be the next step.

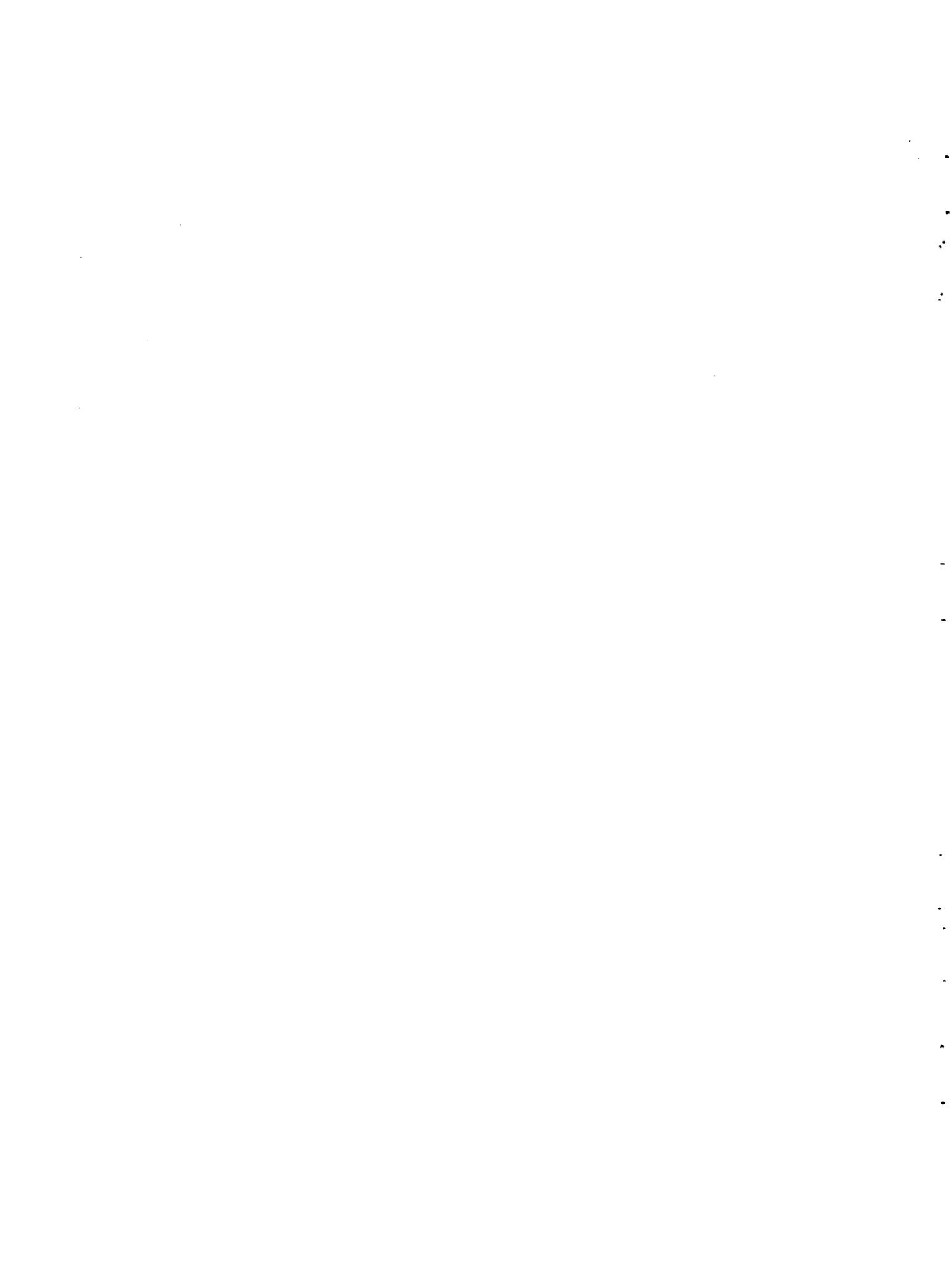
255 Vaughan, V.N.

Use of the telephone network for data communications.
Paris: Unesco, 1981. PGI/CONF.612/INF.1
UNISIST Working Group on Technology of Systems'
Interconnection, 2, Paris, 1-4 December 1981.
Outlines the principal attributes and capabilities of the telephone network, including the General Switched Telephone Network (GSTN) and leased lines for data communication. The various alternatives for data transmission such as the telex, telephone, a circuit-switched or packet-switched public data network or some combination are considered. Discusses considerations of data quality when using the GSTN and steps to minimize deficiencies found.

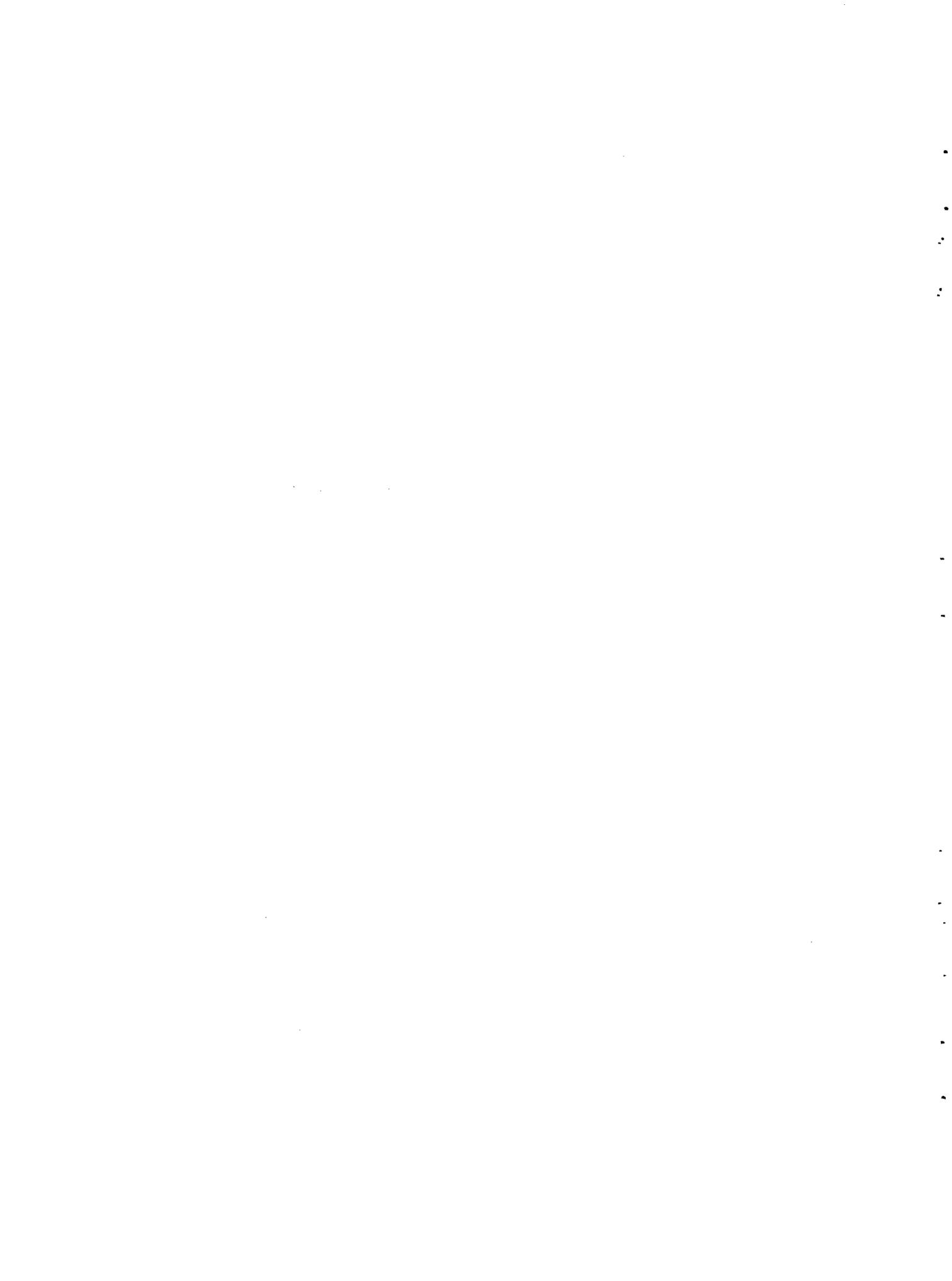
256 Wellenius, Bjorn

Telecommunications in developing countries.
In: Finance and Development, vol. 21, n. 3. 1984. pp. 33-36
-----> CDC Serial

Discusses the role of public telecommunications, pointing to the limited investment in the area among developing countries. These countries account for over 70% of the world's population and 17% of its product and only 7% of its telephones. Discusses the constraints on investing in telecommunications seen in the areas of organization and management, sector structure and policy and limited resources. Suggests the selective introduction of new services, expansion of the role of private enterprise, increased use of international competition in the procurement and financing of equipment, greater flexibility and initiative in cofinancing among external sources as measures to overcome constraints. States that where institutional, financial, economic and technical issues have been tackled in a consistent and sustained manner, the results are impressive.



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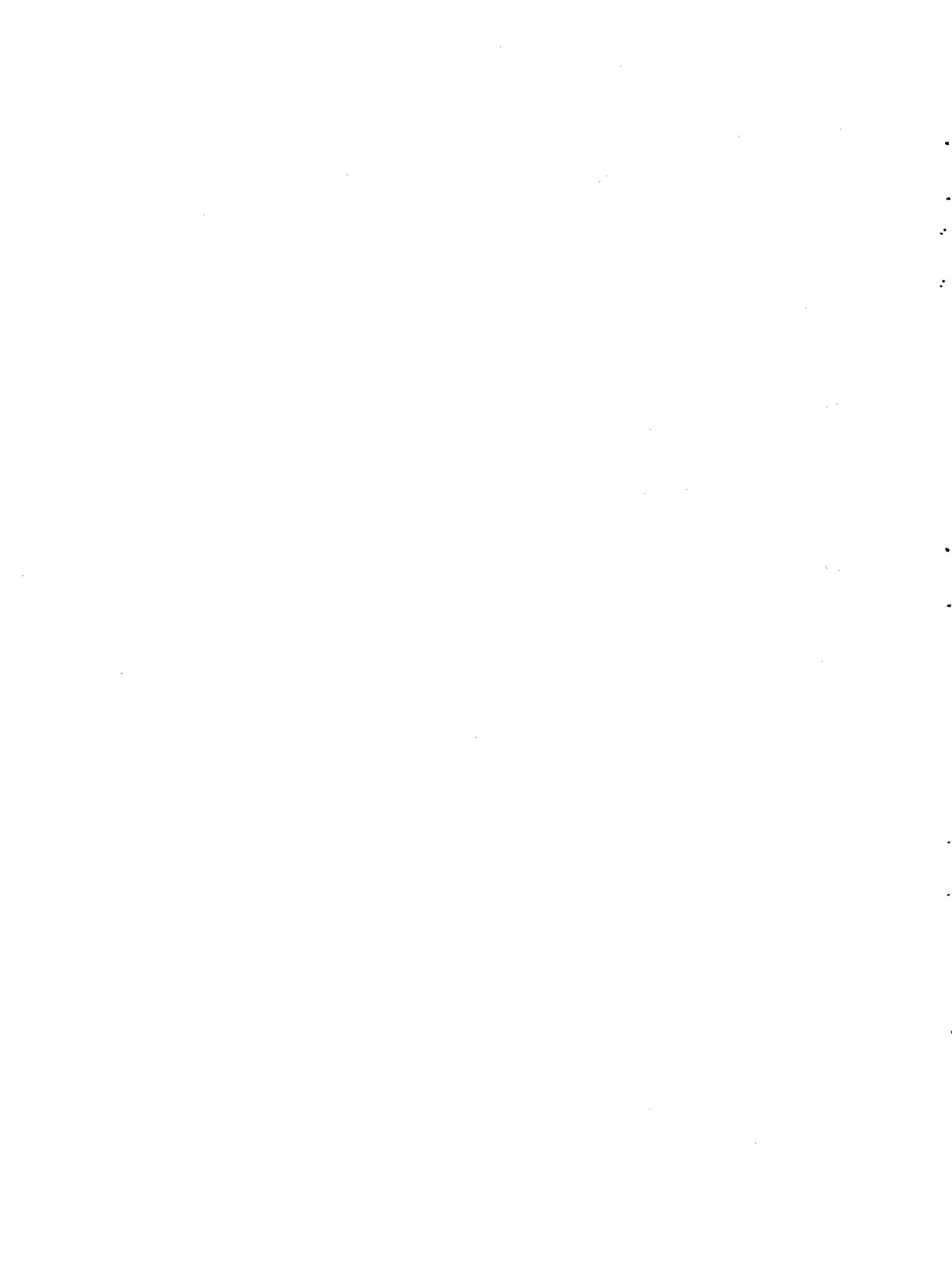
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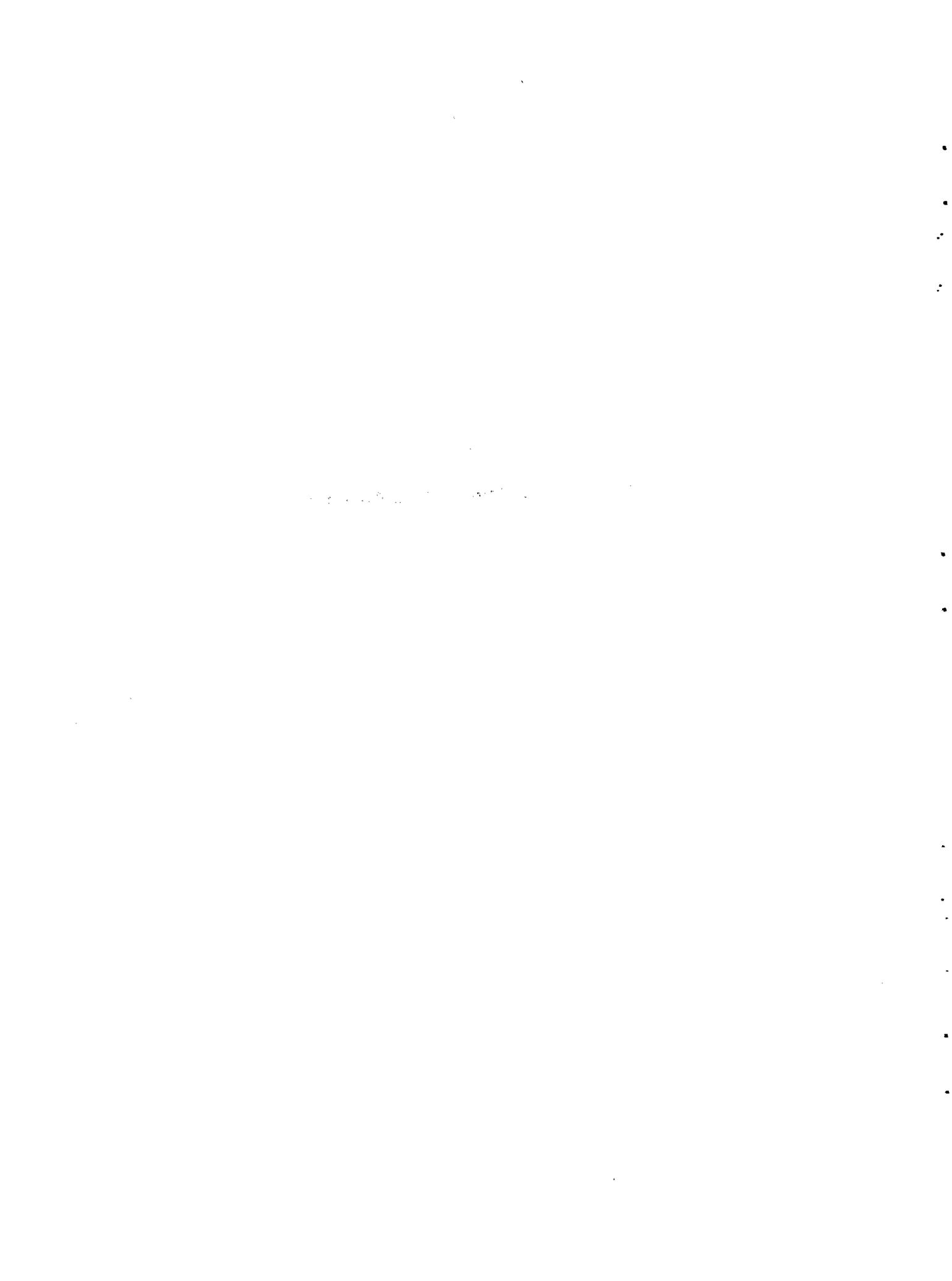
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