

# ELECTRONIC INFORMATION SOURCES IN CENTRAL AMERICA\*

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## RESUMEN

Se presenta un resumen de la situación en el uso y creación de recursos de información (tradicionales y electrónicos) en América central, por medio de ejemplos específicos que ilustran los problemas y oportunidades que traen las nuevas tecnologías informáticas. Un apéndice contienen una lista de contactos regionales.

## ABSTRACT

*This paper presents an overview of the use and creation of traditional and electronic information resources in Central America. The focus is on specific examples that highlight the problems and opportunities presented by new information technologies. An appendix contains a list of useful regional contacts.*

## TRADITIONAL MATERIALS

In Central America, the use and creation of electronic information resources suffer the same problems that limit the access to the more traditional resources, such as books, magazines, and newspapers. These problems (illiteracy, low educational levels, cost of materials, etc.) keep the demand for information services at very low levels, impeding their development. This creates a vicious circle: no information, low expectations from the users, no demand for improved services, and so on.

First, illiteracy rates are very high. For example, 82% of all Guatemalans are functionally illiterate and educational coverage in the rural areas averages 2.9 years of schooling (*Lineamientos*, 1990; *La Educación...*, 1990.) Even in Costa Rica, where literacy rates are highest, only 3% of the population has some level of post-highschool education (*Encyclopedia of the Third World*, 1987.)

This causes the demand for books to be low, resulting in a small publishing industry. The available data for book publishing<sup>1</sup> show that about 500 new titles are published annually in Central America, with editions in the low thousands (1,000 - 10,000 copies). Books are primarily imported from other Spanish speaking countries (e.g., Mexico, Spain, Argentina.) For example, during the first four months of 1991, more than 40,000 books were imported from Argentina (*Informe...*, 1991). Half of these went to Costa Rica.

As a result, books are scarce and expensive, and unfortunately, libraries are little help to potential readers. From the available statistics, we know that there are approximately 1,000 libraries holding less than 10,000,000 volumes in the region<sup>2</sup>.

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Even if we double these numbers to account for libraries not included in the statistics, 20 million volumes barely add up to about two volumes per literate Central American. Librarians have to deal with the highly unreliable postal systems, lack of foreign exchange to import equipment, supplies, and materials, and the extremely low salaries that make librarianship unattractive as a lifetime career.

There is one bright spot in this bleak horizon: special libraries built around the needs of non-profit foundations and research institutions. In order to prepare project proposals and research papers, these organizations need information. Their directors see libraries and information services as a worthwhile investment and visiting researchers, who are used to their own countries' libraries and information sources, expect a certain level of service and motivate local planners to invest in similar services. Interviews were conducted by the author at four NGOs in Guatemala<sup>3</sup> with the purpose of describing the characteristics of these libraries. All have very small collections (between 1,000 and 10,000 volumes) that include books, reports, and magazines both in English and Spanish. These libraries are invaluable resources, both for internal staff, and for visiting lecturers, researchers, and the general student population. Two of these libraries have a computerized catalog and are run by a professional librarian. However, there is little contact between these and other local libraries, although all librarians expressed their interest in cooperating, especially in collection development efforts.

### ACCESS TO ELECTRONIC RESOURCES

The access to computer databases depends on technical resources: computer equipment, software, and telecommunications systems. Fortunately, the basic technical expertise needed to manage these resources already exists in the region. The basic problems with unreliable power supplies, the expense of maintaining and repairing equipment, difficulties at the user interface level, etc. are issues that most users have to deal with, and many do so successfully. At this time, developing access opportunities depends more on leadership, funding, and on the perceived value of information, than on solving technical problems.

#### *Availability of Computer Equipment.*

In Central America, governmental agencies, banks, and large business firms (especially US subsidiaries) have been computer users since the early 1950s. Computer centers grew around expensive mainframe computers, which, needing air-conditioned installations and specialized personnel, acquired and maintained an air of mystery and grandeur. The data managed at these centers is mostly internal and operational, for purposes of control (accounting, inventory, payroll, marketing, etc.) and not to be shared with researchers or other interested parties. With the advent of the personal computer in the 1980s, computers became more affordable, less mysterious, and therefore, accessible to smaller and more varied organizations, including small businesses, schools, non-governmental organizations (NGOs), universities, and libraries and documentation centers.

In Central America, information centers and libraries were among the first users of microcomputers, CD-ROM readers, modems, and bibliographic databases. For example, in 1990 the UCA (Universidad Centroamericana) in El Salvador found that the *CD-MARC Bibliographic* (a CD-ROM database published by the US Library of Congress) contained information about an estimated 50% of their library collection, and chose this CD as a primary cataloging aid<sup>4</sup>.

### *Systems Development*

Setting up systems software can be difficult and requires support from specialized personnel. «Microisis», for example, is the most popular library database package in the region. In terms of database management, Microisis is very flexible, but relatively hard to setup, especially for inexperienced librarians. This has created a small market for specialized consultants, including many Central Americans who have become experts in solving specific database problems.

### *Development of Telecommunications*

Up to mid-1994, users in all Central American countries (except Costa Rica) had to rely on phone calls to connect to remote networks and databases. Logically, when a one-minute call from Guatemala to the USA cost the equivalent of one's day pay at minimum wage, one would think twice before attempting to connect to DIALOG for a search.

Each country's PTT totally controls the provision of telecommunications services. For example, in Guatemala, GUATEL is the governmental entity that has the «exclusive right to offer public telecommunications services, including existing services and *«all those of a similar nature that are developed in the future.»* This effectively allows GUATEL to regulate the development of any type of services (telephone, telegraph, radio, TV) including those not invented at the time the law was written (about 20 years ago): cable TV, fax, electronic mail, etc. (Ibargüen, 1992). By early 1996, the privatization of telecommunications services is still under discussion in all Central American countries.

Progress has been made with respect to Internet connections. The first Bitnet and Internet nodes were established at the Universidad de Costa Rica, in an effort led by Guy de Teramond, a physicist who had studied in France and who needed *email* to stay in touch with colleagues in Europe. By February, 1996 all Central American countries had some type of access: academic and research nodes had been established in all countries (except El Salvador), in most cases with the help of the Organization of American States; there were also at least 25 private email and internet service and presence providers in the region (see Pasch, 1996.)

### *Database Cost.*

Many authors consider that the fees charged by database vendors in the United States and Europe are excessive and impossible to pay for users in developing countries. Orozco (1988) states that information providers should «consider whether they have an ethical or social commitment to prevent the bibliographic isolation of developing countries.» Vendors, he suggests, could offer reduced rates (for example, based on a country's GNP), stable prices, and generous terms for payment. Most likely, database vendors will be unwilling and/or unable to follow these suggestions. A proposal received from the Mexican DIALOG office in 1993 stated that opening an account from Guatemala would cost US\$500. This included the manuals and a few hours of free searching.

To bring down the cost of online searching, the ITCR (Instituto Tecnológico de Costa Rica) encourages users to search first on the locally available CD-ROMs (Monge, 1994.) At the Universidad Francisco Marroquín (Guatemala) we assembled a collection of 20 academic CD-ROM titles and 10 for «popular multimedia reference» disks by early 1994. Two years later, the CD-ROM collection had more than tripled. Most CDs were initially donated by the Organization of American States (OAS), the Library of Congress, the United States Agency for International

Development (AID), and the Johns Hopkins University. Others were bought with funds from specialized colleges (e.g., Medline was acquired by the College of Medicine) or through donations solicited by the Friends of the Library. The problem with these products is that it is necessary to renew most of them annually, and subscriptions can run into the thousands of US\$.

In general then, access to foreign databases (both online and on CD-ROM) from Central America is severely limited by cost issues. Another issue frequently mentioned in the literature is the low relevance of «foreign» databases to users in developing countries. One study showed that the Index Medicus included only 140 titles published in 32 developing countries (5% of the 2,784 titles indexed), and that only 1.88% of all titles in the 1985 Social Science Index originated in developing countries (Bandara, 1987).

From these statistics, authors may conclude that such databases are not relevant to researchers in developing countries. However, the low production of papers in developing countries and the high rejection rate of these works by foreign publishers has been attributed to the low level of current awareness among scientists in developing countries, whose papers are rejected «due to lack of originality» in 44% of the cases and «due to poor references» in 20.5% of the cases (Gibbs, 1995; Gordon 1979; Eres 1985). Database producers are reluctant to include publications from the developing countries in their databases because of the perceived low quality of research in those countries. Given the low level of investment in research in our countries, our practitioners need access to foreign literature in order to learn about the latest developments in science and technology. As more users gain access to the Internet, especially the World Wide Web, their horizons will broaden: listservs, usenet groups, and simply being able to email a question to a colleague in another country, will help strengthen their information resources.

## DATABASE CREATION

Better bibliographic tools can help researchers produce publishable papers for international journals. It is also important to encourage them to publish in local journals, instead of submitting only to foreign, «respectable» publications (see for example Mattelart, p. 132). When local publications are incorporated into local (and international) indexing tools, the exposure of local publications and authors rises. Building bibliographic and reference databases with a local content is the priority of various projects described here.

### *Cooperation with Established Databases.*

A first step toward the creation of local databases is the collaboration with international databases. The first bibliographic database originating in Latin America was BIREME, from the *Biblioteca Nacional de Medicina* (Brazil.) In 1979 the *Biblioteca* established the Index Medicus Latinoamericano that submitted citations from regional publications to the United States National Library of Medicine database. BIREME played an important role in the development of medical information centers throughout Latin America as early as 1978. The cooperating centers, present in most Latin American countries, receive the updated database in exchange for local information. This has an interesting effect: institutions create and maintain databases of local publications and make them accessible to their community. For example, the *Universidad de Panamá* maintains «LILACSPA», which contains references and abstracts of articles published in Panama in the health sciences. *Universidad de Panamá* also cooperates with the *Agencia Internacional de*

*Energía Atómica*, collecting the local literature on atomic energy. The produced records are later added to the international *INIS* CD-ROM (Barragán, 1994.)

### *Online Public Access Catalogs (OPACs)*

One of the marvels of the Internet is that it is possible to consult hundreds of OPACs around the world. But is this relevant to the needs of users in Central America? By searching the catalog of the National Library of Medicine, we can find out what the latest titles are in a given area. We can also create complete bibliographies on important topics, even if it is impossible to get the items themselves. At least, this could be a first step toward setting up interlibrary loan agreements and collection development efforts. Still, it is easier to examine the holdings of the Benson Latin American Collection in Texas, than the holdings of a library across town. Fortunately, libraries in our region are starting to automate, viewing cooperation as a very important goal.

In Guatemala, the CCEBU (Comité de Cooperación entre Bibliotecas Universitarias) was founded in 1983 by the librarians from the five university libraries in the country. In 1988, with the sponsorship of US AID, each library acquired a PC (286 with 40MB drive), a printer, and a copy of "LOGICAT", a cataloging system produced in México by Sistemas Lógicos. This donation formed for many years the basis for cooperation between the five universities. Diskettes containing the information on theses and reference sections were exchanged. With this, users could be referred to the libraries holding the works needed. In early 1994, all members of the CCEBU agreed that as each library evolves and moves on to new systems, what is really needed is online access to each other's collections.

### *CD-ROM Publishing*

In 1979, as war broke out in El Salvador, the librarians at the UCA (Universidad Centroamericana José Simeón Cañas) saw the need to gather the information published about the war in all its aspects: economics, military, politics, both from local and foreign publications. This information was forwarded to professors, according to their academic interests. The result of these efforts was the creation of the *Bibliografía Salvadoreña*, a Salvadorean bibliography. In 1991, the first computer project at the library was the transfer of this bibliography into a database. In 1992, the library participated in the LATINBASE conference in Guadalajara, where she contacted the CD-ROM producers from the Universidad de Colima (Mexico.) As a result of this meeting, the database was included in a Colima CD-ROM, the «Bancos Bibliográficos Latinoamericanos.» And this is one of the first databases from our region to be published on CD-ROM (Arteaga, 1994; Feria, 1994).

The first CD-ROM fully produced in Central America was the CRIES CD-ROM. CRIES is the *Coordinadora Regional de Investigaciones Económicas y Sociales*, the entity that coordinates the efforts of 30 research centers in 14 countries in Central America and the Caribbean. In its first edition, the CRIES CD-ROM contains 12 databases, including the catalog of publications at CRIES, a directory of Central American research projects in the social sciences, and most notably, two unique databases that cover the recent social and political changes in Nicaragua: RECORD, originally commissioned by the OAS during the 1989 elections and growing at a rate of over 30,000 records per year; and MIG, created by the well-known researcher José Luis Coraggio, and containing a selection of 50,000 articles that cover the transition period in Nicaragua (1979-1989). This CD was possible because the right

elements came together at the right time: CRIES was collecting the information and was ready to make it available; their documentation director saw the value of publishing this information; and the Universidad de Colima was there to help (see Stewart, 1994.)

### *Online Databases*

The business sector in developed countries is an avid consumer of information, financial statistics, business directories, research, marketing reports, etc. Research firms in the US and Europe collect and sell information on Latin American business, but only a few Latin American companies do likewise. In Central America, few businessmen are ready to invest in information. The concept of a corporate library is unknown. Again, non-profit organizations have taken a leading position in the creation of online electronic resources.

ACCESO, a Costa Rican foundation, supports Central American NGOs by helping them communicate through email. The system uses APC's node in Nicaragua, «nicarao», which was the first uucp node in the region. ACCESO's *Programa Centroamericano de Enlaces* provides funds to organizations that wish to convert and share their information. The three formats under consideration are online discussion groups, online documents, and online databases. The priority topics are human rights, small business, environment, and rural development. Topics related to information services are also considered: a discussion group on Central American librarianship was formed in 1994 (Sáenz, 1994.)

The World Wide Web makes it easier to place information on the Internet, at least in textual form. For example, the proceedings of the "OAS Meetings" in Guatemala (1993, 1994) were not published on paper, but are available on the World Wide Web at the following address: <http://fiat.gslis.utexas.edu/~gpasch/interca.html> These pages are visited by hundreds of readers every month.

### *Resource Directories*

The 1992 edition of DIBALC («Directorio de Bases de Datos de América Latina y el Caribe») published by UNAM, lists about 150 Costa Rican databases, 2 Guatemalan, 1 Nicaraguan, and 1 from Panama. This directory is a good starting point for finding regional databases. Its disadvantage, as with any printed directory, is the difficulty of keeping it updated.

The LAIB and LAIBWIN directory-databases produced by Casey Walpole of the Latin American Database Interest Group (affiliated to SALALM, the Seminar on the Acquisition of Latin American Library Materials) were updated in 1993, and can be downloaded from the University of Texas LANC service (<http://lanic.utexas.edu/>). In fact, LANC (Latin American Network Information Center) is a directory of gopher and web sites relevant to Latin American scholars, including extensive pages on Central American Internet resources. Most of the linked Web pages contain texts and photographs, with a few full-text and statistical databases.

## FINAL COMMENTS

In Central America, electronic information resources are being used and developed mostly at research and academic institutions. The examples presented in this paper show that *innovators* and *early adopters* of CD-ROMs, catalog systems, email, etc. are playing important roles in the creation of local information resources. However, there are almost no basic statistics describing the present situation (e.g.,

availability of printed materials, number of information centers), and very few studies have examined the use of information and its impact on research, publishing, or the culture in the region. There is much room for related research, especially in describing the innovation leaders who champion the use of the new technologies.

## NOTES

- <sup>1</sup> Data from «The Book Trade in Central America: A Panel Discussion», *The Book Trade of the World*. Vol.2, Chase (1983), Publishers' International ISBN Directory, Unger (1991), *Unesco Statistical Yearbook 1991*, Libros Centroamericanos (Catalog # 87), Literatura de Vientos Tropicales (Catalogs, 1991) and the University of Texas at Austin UTCAT (October 1991).
- <sup>2</sup> Sources: *World guide to libraries, 9th edition*, München: K. G., 1989. *World encyclopedia of library and information services*, 2 ed., Chicago: ALA, 1986. *The world of learning*, 38th ed. London: Europa Publications, Ltd., 1988.) References.
- <sup>3</sup> We thank the librarians at the following organizations for the information provided: ASIES (Asociación de Investigaciones Económicas y Sociales), CIEN (Centro de Investigaciones Económicas Nacionales); CIRMA (Centro de Investigaciones Regionales de Mesoamérica), and Defensores de la Naturaleza (DN). Each library was visited one to three times between July, 1992 and May, 1994.
- <sup>4</sup> Information about this and other examples cited in this paper can be found in the papers presented during the «OAS Meetings» in Guatemala (1993, 1994.) These papers are available on the World Wide Web at: <http://fiat.gslis.utexas.edu/~gpasch/interca.html>

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## Appendix

INFORMATION AND REGIONAL CONTACTS  
REGIONAL RESEARCH CENTERS:

ICAITI Instituto Centroamericano de  
Tecnología Industrial  
Licda. Rocío Marbán, Library Director  
Avenida La Reforma 4-47 Zona 10  
Guatemala, ciudad  
Tel. (502) 2 310631 Fax. (502) 2 317470

INCAP Instituto de Nutrición de  
Centroamérica y Panamá  
Lic. Francisco Ralón, Library Director  
Carretera Roosevelt Zona 11  
P.O.Box 1188  
Guatemala, ciudad  
Tel. (502) 2 723762 Fax. (502) 2 736529

CIDIA Centro Interamericano de  
Cooperación para la Agricultura  
Apartado Postal 10281  
San José  
Costa Rica

USAID Regional Information  
Clearinghouse  
USAID Guatemala  
1 Calle 7-66 Zona 9  
Edificio Plaza Uno  
Guatemala, city  
Tel. (502) 2 320322  
Fax. (502) 2 320495

## NGO'S, UNIVERSITIES, AND RESEARCH CENTERS:

ACCESO  
Fundación ACCESO  
Apartado 288-2050  
Costa Rica  
Tel. (506) 237650  
Fax. (506) 237649  
[acceso@nicarao.apc.org](mailto:acceso@nicarao.apc.org)

CIEN  
Centro de Investigaciones Económicas  
Nacionales  
María del Carmen Aceña, Director  
P.O. Box 260-C  
Guatemala, ciudad  
Tel. (502) 2 337014  
Fax. (502) 2 337022

Colima Universidad de Colima,  
Centro de Discos Compactos  
Lic. Domingo Zúñiga  
Avenida Universidad 333  
Apartado Postal 134  
Colima, México 28040  
Tel. (52)331-43004  
Fax. (52)331-43006  
[lferia@volcan.ucol.mx](mailto:lferia@volcan.ucol.mx)

CRIES Centro de Documentación (CEDOC)  
Apartado Postal 3516  
Managua, Nicaragua  
Tel. (505) 2 621312  
Fax. (505) 2 621244  
[criesdoc@nicarao.apc.org](mailto:criesdoc@nicarao.apc.org)



ITCR/CIT Centro de Información  
Tecnológica  
Instituto Tecnológico de Costa Rica  
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SPEAR The Society for the Promotion of  
Education & Research  
Lusiola Castillo - Resource Center  
P.O.Box 1766  
Corner Pickstock & New Road  
Tel. (501) 2-31668 Fax. (501) 2-32367  
lcas@spear.bl  
See:  
<http://fiat.gslis.utexas.edu/~gpasch/castillo.html>

UCA Universidad Centroamericana José  
Simeón Cañas  
Directora/Biblioteca  
Autopista Sur, San Salvador  
Tel. (503) 734400

U de Panamá  
Universidad de Panamá  
Vicerrectoría de Investigación y Postgrado  
Lic. Víctor Barragán, Director  
Administrativo  
Ciudad Universitaria octavio Méndez Pereira  
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Ciudad Universitaria, México DF 04510  
Tel. (550-5215 X 3345.

LAIB/WIN SALALM's Latin American  
Interest Group Database  
K.C. Walpole, Creator/Lourdes Feria,  
Director  
76200.3533@compuserve.com  
lferia@volcan.ucolima.mx  
See: <http://lanic.utexas.edu/project/laib/>

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Information Center  
Ning Lin, Technical Director  
ILAS, SRH 1.321  
The University of Texas at Austin  
Austin, TX 78712  
<http://lanic.utexas.edu/>  
info@lanic.utexas.edu