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### A University Information Center as a Potential Unit of a Network

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**Key Words.** Latin America · University · Information centers · Communications · Information networks · International · Discontinuity · Survival · Development · Biomedicine · Mexico · Regional Library of Medicine · Brazil · Journals · Research · Documents · Information resources

**Abstract.** Latin American researchers, despite their low purchasing power, heavily depend on extraregional resources from which they get information and in which they publish the best product of their research. Most of them are active in universities which, in turn, are the main document pools. The contribution of these researchers is essentially in biomedicine. The principle characteristics of the information infrastructure that supports the biomedical researchers of this region are lack of continuity and survival, poor documentary and information resources, unqualified staff, scarce links to extraregional information net systems, bad communications and unlogistic approaches and administration. The structure and services of the Information Center for Science and Humanities of the National Autonomous University of Mexico (UNAM) are outlined as a possible model for the improvement of the information infrastructure needed to support Latin American research.

#### Some Preliminary Words

Man has always had the means to communicate his needs, no matter how rudimentary they were and still are. The organization of information up to the point of creating specialized centers involves the necessity to communicate needs, but at the most elaborate intellectual level. When the need arises to develop networks of information, it reflects the degree of growth, complexity and interdependence that information has reached.

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To speak of information networks has different implications, when approached from a high, medium or low developed corner of the world, because one of the modern paradoxes is that the less developed a country is and the more it requires information, the less it expresses and meets this need through the rational application of the 'information' concept.

It may be advantageous to be halfway, in a position which enables one to ponder on the long process from the extremes of nothing to almost all and to observe the momentum that is gathered by information from one end to the other, not disregarding the possibility that the gap between the developed and the developing may be increasing.

Within the complex structure of a modern communication network, 'half-way' in Latin America means particularities which are worth mentioning. It is natural to think of information networks coupled with international cooperation. A national network without external connections is unrealistic. One of the most relevant international activities of today is the great amount of effort invested by the developed countries and the international organizations to assist and support the creation of the information infrastructure in the less-developed countries. When doing this, the main concern of the developed should be to face the crucial problem of discontinuity.

Discontinuity is a common event in some areas of the world. When talking of information networks, therefore, it should be kept in mind that their units should be independent enough to continue their work despite the adversity that others, mainly the focal one, could face in their road to survival.

Survival then, informationwise, is extremely difficult, with the danger of great wastes of efforts and resources.

The transfer of information, so closely related to decision-making, may be the most sophisticated of the intellectual activities, whose relevance may not be easily understood in those areas of the world where basic education — without underestimating health and nutrition — appear as insurmountable problems.

### Some Facts on Biomedical Information in Latin America

At present, biomedicine is the most preferred of all disciplines by researchers in this corner of the world.

It is wrong to assume that Latin America is a homogenous region. The fact is that, besides its great heterogeneity, it is poorly communicated despite its common languages. It is also composed of countries with awkward communica-



tion habits with regard to gathering specialized information. It is a common practice to greatly depend on information sources out of the region, which are the most important and complete.

This leads one to remember the reason prevailing in the creation of one of the best resources of biomedical information existing in the sub-continent: the Regional Library of Medicine (BIREME), a joint project of the Brazilian government and the Panamerican Health Organization, with the assistance of several institutions, mainly the National Library of Medicine of the United States.

The reason underlying the creation of this biomedical information center, was the large volume of requests for interlibrary loans made by Latin Americans to the National Library of Medicine. Despite its great development, BIREME is essentially servicing Brazil, which justifies its creation by itself. However, after a decade from its creation as a South American regional center, its authorities and technical advisors are pondering on the advisability of developing similar national centers in other Latin American countries. By doing this, the foundations would be set forth for a truly biomedical information regional network.

One more comment which cannot be underestimated is that for many years the dubious quality of most of the Latin American scientific journals has been a matter of concern. It is a well-known fact that the majority of these journals covers the biomedical field. To give an idea of what researchers in this part of the world do in this connection, it is necessary to go beyond the regional borders.

Without speculating on the number of Latin American specialists actively involved in research, we do know that most of their production, as manuscripts, is exported to foreign vehicles of worldwide circulation.

In fact, the Latin American researcher is as active and able — as far as manuscripts production is concerned — as any other of his colleagues in the rest of the world, since we know that these investigators produce about 2,328 documents per year, and that such documents circulate in approximately 1,162 non-Latin American journals. The two journals which include the largest number of Latin American manuscripts are the Dutch journal *Biochimica et Biophysica Acta* and, secondly, the Swiss journal *Experientia*. This contrasts with the fact that approximately two-thirds of all the manuscripts exported from Latin America are published in US and UK journals.

In view of the above comments, an important aspect of the Latin American reality regarding information becomes evident. Being essentially active in universities, the Latin American scientist works in a situation of relative isolation, in an environment with poor information resources, peripheral to the large extra-regional communication networks on which he greatly depends. Under these

circumstances, the support he receives from the invisible college to which he belongs is far more important to him than to other colleagues in developed countries.

Despite this, he is an important consumer and producer of information, as shown by the experience of the National Library of Medicine, the creation of BIREME, and the number of manuscripts exported to foreign journals.

### **The Information Center for Science and Humanities (CICH) of the National Autonomous University of Mexico (UNAM)**

Universities are the main non-profit consumers and producers of information in Latin America. These institutions produce two-thirds of the Latin American papers published in journals of worldwide circulation. Therefore, it is only natural to expect them to be the leaders in the organization of information centers and systems.

In December of 1975, an important meeting on information in large Latin American universities was held in Mexico. At this meeting, the universities of Buenos Aires, São Paulo, Venezuela, Peru, Colombia, Ecuador and the host, UNAM, were present. By that time, UNAM had already organized its information center whose unique characteristics became apparent during the discussions at the meeting.

This fact is not casual nor accidental. It really expresses a great need. In 1950, the Mexican Scientific and Technical Documentation Center (CDCTM) was organized as a result of an agreement between the Mexican government and UNESCO. Unfortunately, its life was short and by 1962 this center was discontinued.

When describing this fact, it is necessary to go back to 'some preliminary words' in which discontinuity and survival of information institutions is stressed. The importance of discontinuity in this particular case is evident, since the center organized by UNESCO was very successful. But the most relevant fact is that by the time the center disappeared, four-fifths of its users came from UNAM. In addition, during the decade after the closing of the CDCTM, UNAM continued its fast growth and development. By 1971 it had created one-third of the country's total research infrastructure.

When during the 1970s the Mexican government decided to stimulate the scientific and technical development of the country, it was only natural that in 1971 UNAM organized its information Center for Science and Humanities. This



Center was multidisciplinary to meet the broad spectrum of interests in research, teaching, cultural and administrative activities of such a large university.

During the brief period of its activities, the CICH has grown at an uncommon pace. Since the beginning, the Center has received full support from the University's authorities, who are also distinguished researchers and important consumers and producers of information. Once more, it is necessary to remember the crucial concept of continuity and survival of information institutions in certain regions of the world: universities may offer an adequate environment for these tasks.

An information center, in its early stages, cannot pretend to be an information system, nor even less a network. From the beginning, one of the main goals of its administrators should be to make it easily integrable into a broader system whenever the opportunity arises.

No one involved in information activities can overlook that the most important and difficult task is to recruit adequate professional staff. By 1971, the CICH could not have an adequate number of qualified personnel. Consequently, at the beginning, the CICH was only able to offer a modest documents-procurement service and to invest almost all of its efforts to hire and train 'on the job' its specialized staff. This group was selected from young professionals graduated at the University and other institutions of higher education in the country.

The Center's organizational pattern as well as its goals have been permanently reconsidered and reoriented. At present, it can be said that the Center has reached such a degree of maturity to pretend to be a model of a university information center given the circumstances prevailing in a developing country.

In 1979, the Center has a personnel of 41 professionals; 32 are full-time information specialists and the rest part-time analysts. This staff covers a wide spectrum of intellectual activities, both in pure and applied sciences and humanities. Engineers play an important role in the automation of the services and chemists account for an important part of the personnel. The number and characteristics of the Center's staff may be a unique feature in a Latin American university. The CICH is organized in two departments: *Documents Department* and *Information Department*, and two supporting units: the *Administration Unit* and the *Informatics Units*.

*Documents Department* has 3 sections, namely: (1) *Subscriptions*. UNAM is the richest documentary source in the country, with over 90 departments subscribing to approximately 7,000 journals on which the University invests about US \$ 1,000,000 per year, plus some 3,500 obtained by exchange. The

technical and financial coordination of this material, dispersed in so many departments, has been centralized by the CICH since 1976. One result of this centralization, for which a special computerized system was developed, is a catalogue of holdings by subscription. This is a particularly important tool if it is borne in mind that the Center also renders a documents-procurement service, acts as a referral center and, therefore, supports interlibrary loans within and outside the University. (2) *Documents procurement*. This service has the advantage, when compared with other departmental documentation services rendered in the University, of its multiple connections with document sources outside UNAM and the country. As with all other services rendered by the CICH, this one is available to users within and outside the University. Approximately 65% of the documents requested, which have been screened by users in the departmental libraries, must be requested from foreign sources. To accomplish this, the CICH has established deposits or acquired coupons in not less than 25 foreign documentary sources. UNAM holdings satisfy 24% of the requests handled by this service. (3) *Reference library*. Despite the short time since its creation, the Library is the richest of its type in this country. It holds about 200 indexing and abstracting services in all those areas which are of immediate or potential use within or outside the University, with complete collections of those most frequently used such as *Biological Abstracts*, *Chemical Abstracts* and *Science and Social Sciences Citation Indexes*.

Before describing the activities and goals of the Information Department, it is necessary to begin by saying that, besides the automated system for the centralization of subscriptions, the CICH is endeavoring to cover all those tasks involved in the modern concepts of specialized information processing. As part of the research infrastructure of an important university, one of the main goals of the CICH is also to act as an experimental laboratory in the information field.

*Information Department*: This department is trying to be as comprehensive as possible in its coverage. It includes conventional information services, prepares its own information tools and is involved in the creation of data bases, one important product of the Latin American intellectual work that has not been adequately treated by other systems. The services rendered by this department are: (1) *Retrospective searches*. These are rendered manually, using the indexing and abstracting services of the Center's Reference Library, or by means of on-line retrieval through the access to the commercial services in the United States, such as Dialog, Orbit and The New York Times. (2) *Selective dissemination of information*. The CICH has exclusive rights for Mexico to use the data bases of the Institute for Scientific Information which, being multidisciplinary



and of broad coverage due to their citation modality, offer many advantages. The ISI tapes are processed weekly by UNAM. (3) *Current awareness*. For this purpose, since 1974 the Center has regularly published every 2 weeks (20 issues per year) *Alerta (Multidisciplinary Information in the University)*. This publication is actually an information package with 8 sections, all computerized. The first section, which originated the whole package is a KWOC-indexed basic bibliography, analyzing the contents of 400 core journals covering all disciplines, selected from those received by subscription at UNAM. The titles of the articles of these journals are analyzed at the CR-terminal to select their key words whose Spanish translations are punched on tape and alphabetically ordered and printed in the final format by the computer. Besides its multidisciplinary and the key words in Spanish, the section has the advantage of making reference to works recently received by the university libraries, providing a ready access to the originals. 40 coupons per year are attached to the bibliography for the free obtention of copies of the articles cited. The information package includes current awareness sections with references to state of the art, reviews, bibliographies, etc., in many aspects of the university's work such as 'New Materials, Instruments and Methods', 'Education', 'Third World', as well as 'Future Congresses'. The most important section could be the 'Latin American Bibliography'. In the last 5 years it has regularly compiled papers which, as products of the research in or on Latin America, are published in over 6,000 non-Latin American journals of worldwide circulation. The contents of this section have been analyzed by the Center's staff leading to interesting bibliometric studies from which some of the data reported in this paper are taken. (4) *CLASE (Latin American Citations in Sociology and Economics)*. This quarterly publication has been regularly published since 1976. Apart from being a current awareness instrument, totally in Spanish and computerized, it compiles and analyzes in depth those articles published in Latin American journals, not only with regards to social sciences and economics but also to humanities, particularly education, anthropology, politics, etc., a literature that is very poorly covered by the international indexing and abstracting services. It is indexed in 5 sections: Tables of Contents, Key Words, Citations, Authors, and Institutions. The Citation Index is unique in a Latin American publication and makes reference to all the works cited by the authors in each article of the analyzed journals. (5) *Periodica (Index of Mexican Scientific Journals)*. This computerized quarterly publication was initiated in 1978. It is similar to *CLASE*, with the exception of the citation index, and covers the contents of Mexican scientific and technological journals, including an index of English key words. (6) *Data bases*. The CICH has initiated

a program leading to the preparation of a Latin American data base to make compatible the Latin American bibliography section of *Alerta* with the contents of *CLASE* and *Periodica*. This data base is expected to be available for on-line searches.

To complete the picture, the work of the CICH is supported by the Administration and Informatics Units. The latter is devoted to system analysis, programming and computing activities in order to support the services, administrative routines and development of the data bases.

Not pretending to be an information system, the CICH is a sort of neuron whose dendrites extend up to the purveyors while its axon reaches its users who are in and out the host institution and country. It is ready to become part of any information system.

### Final Comment

The immediate goal for the improvement of information resources in Latin America in order to facilitate and stimulate the work of its biomedical researchers is probably the creation of well-structured information centers that could in the future become units of an intraregional system.

These centers should be provided with sufficient modern equipment, a qualified staff and a convenient degree of security for their survival. They should also be linked to the extraregional information systems, located near the main nuclei of researchers and documents, and operate on a non-profit basis due to the low purchasing power of Latin American researchers as regards the expensive modern information services. Universities seem to offer most of these conditions.

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