NEED FOR INTERNATIONAL COOPERATION TO MEET INFORMATION REQUIREMENTS OF SCIENTISTS IN A DEVELOPING COUNTRY*

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Introduction

Scientific and technological revolution in communication has lead to globalisation of science. Internet and electronic communication now play an integral part of all scientific endeavors. No doubt there was close interaction among scientists working all over the world, through letters, journals and telephones even before the advent of the electronic communication. But none of the communication media has had such a dramatic effect as the introduction of the Internet. In view of this technological change, it is necessary that librarians working in special libraries acquire new skills if they have to work in the new environment. Cooperation and coordination will be the bedrock for library activities of the millennium. These two C's confined hitherto to certain traditional activities in the library has now extended to most areas in the library and to other players in the Information Arena as well as such as the Publishers and Vendors. Both librarians and publishers/vendors have to develop symbiotic relationships to prosper. Thus networking and consortia formation, a result of the 2C's will play a prominent role in library and information activities. In this paper we have discussed the role of librarians in special libraries in developing countries like India in relation to the above two activities networking and consortia formation and the need to work towards international cooperation.

Information Access: Indian Scene

Funds for scientific research is very limited and in a developing country like India, it is even more so. In the year 1996-97 0.66% GNP was devoted to research and development activity which is lower than the previous years. This is a very small proportion when compared to developed countries like UK, US and Japan where more than 2% is allotted to research (DST,1999). Batten (2000) has shown that in

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the case of grants for astronomy there is a shocking disparity in per capita expenditure in terms of GNP from the worlds richest to the world's poorest countries. The disparity is considerably more than a factor 100. Though Batten talks of Astronomy it can be said that this is true of science taken as a whole. India's per capita expenditure was only $2.48 during 1996-97, which shows that very little can be achieved with this grant. These are the figures for scientific activity taken as a whole and it is difficult to estimate from this how much is spent on libraries and in acquiring scientific information. One can, however, safely surmise that it is negligible.

It should also be mentioned here that in India there is a wide gap between the facilities available in government funded research institutes and the universities. UGC supports research and development in the universities but this is very meager. India after independence followed a policy of funding newly created research institutions, may be with a view to improve her visibility in the world scientific community, but neglected research in universities thus creating the necessity for the researchers in the universities to depend on the Research institutions. Due to lack of sufficient funds the universities remained mostly teaching institutions and did very little research. After a few decades, government did recognise this draw back and to extend support to scientific research in the universities created inter-university Centre like the Inter-university centre for Astronomy and Astrophysics.

There are two ways of providing better information facilities for the scientists. One is to persuade the government to increase the allocation of funds for research activity and other is to use efficiently the existing resources available. In this paper the emphasis will be on the efficient and effective use of the available resources, as persuading the Government to increase its budget is way beyond the scope of librarians alone. It is in the context of the efficient use of available resources that the role of science libraries and specially, its trained staff has become very crucial.

Today in India there are 200 universities about 400 National Laboratories and 1300 in house R & D units of industries. India is becoming Internationally Competitive, so there is need for infrastructure development. There are 80 thousand scientists employed in these institutions and industry who have qualifications at the post graduate level and above and are actively involved in research work and these scientists need information. Special librarians and libraries under Science and Technology group are in a much better position than libraries attached to the universities. Many special libraries have access to computers, CD-ROM databases and telecommunication facilities such as e-mail and Internet access. These special libraries are attached to various scientific institutions such as

the CSIR Laboratories, Defence Research and Development Organisation, Indian Council for Agricultural Research, Indian Council for Medical Research, Department of Atomic Energy, Indian Space Research Organisation, Indian Institutes of Technology, Indian Institute of Science, Indian National Science Academy and Department of Science and Technology. (DST, 1999).

Government Policy

Government of India recognized the importance of access to information and has stated in the 9th plan document "Communication features are needed for the vast majority of our research and teaching community to escape from intellectual isolation. Information technology needs to be deployed appropriately to ensure greater dissemination of knowledge in various fields of science. This can be achieved through internet connectivity with broad band channels for multi-media facility, networking of libraries and computers etc. This will be a major information resource not only for basic research in science and engineering but in all academic fields including health, medicine, and humanities. It must be done in a well-coordinated manner. (9th Five-year Plan, 2000)

The Working Group of the Planning Commission on Libraries and Informatics for the Ninth Five-Year Plan 1997-2002 made important recommendations for the networking of libraries. Librarians attached to special libraries have been playing an important role in providing information to scientists at his place of work. Globalisation of Information Communication has removed all geographical barriers and has enhanced the opportunities for access to vast amount of information. There is a need for the librarians to develop new skills which will benefit the scientific community. "For the information professional the question must be how to unlearn and relearn-how to maintain a valid role in the provision of information at a time when developments in technology have brought the power of information searching to the non-specialist. The answer must be that the information professional develop additional value-added skills".(Marfleet & Kelly, 1999)

We discuss below a few areas in which librarians will have to play an active role.

1. Formation of local, regional and International networks for better cooperation.

2. Formation of Consortia of libraries to share information access and cost.

3. Adoption of Twinning programmes between libraries/librarians of developed countries and developing countries; between librarians of developing countries and among the librarians within the same country.

4. Involving International organisations to provide essential infrastructure and training of information professional.

Networking for BetterCooperation

A library network is a cooperative arrangement between several libraries for the sharing of resources and services. This resource sharing is an important aspect for libraries in developing countries. In India, there are already networks like INFLIBNET, NICNET, INDONET, SIRNET and Regional networks like DELNET, CALIBNET etc. effectively functioning towards sharing the resources and services among many libraries. The establishment of these specialised and multi-type networks at state and national levels is essential and they require support from the government and national agencies. These networks should aim to demonstrate how the members of the networks can get equal access to information is many forms. INFLIBNET, the Information and Library Network of the University Grants Commission was set up to cater to the information requirements of the universities and their research scholars. It also promotes the addition of "value-added skills" to the University librarians by conducting courses and organizing seminars such as the CALIBER, the Convention on Automation of Libraries, Education and Research Institutions. It is involved in the retrospective conversion of records available in the various universities. The various functions of this network can be accessed from URL: http://www.inflibnet.ac.in/function.htm.

This network functions as a model network for the other national and specialised networks in the country. With the limited budgetary allocation in the universities, being part of the INFLIBNET is a worthwhile investment for the libraries and information centers.

Realizing the importance of networks in information sharing and transfer, networks are being set up on the basis of geographical location also. In Chennai (Madras) there is a concentration of research and academic institutions in one location. This location has been designated as a Science City. The libraries of the institutions in the Science City irrespective of their size have formed a network to share resources and facilities. To spread the message of networking in India, the DELNET (Delhi library network) organizes the National Convention on Library and Information Networking (NACLIN) regularly at various places. FORSA (Forum for Resource Sharing in Astronomy & Astrophysics) is another informal network of eight Astronomy libraries in India. The members belonging to this network have been sharing their library resources and services for the last twelve years. Recently, the computerised bibliographical catalog of these libraries have

been merged to have a union catalog, with the respective location of the availability of the documents.

Traditionally, Resource sharing meant, the exchange of documents, cooperative acquisitions, shared storage and shared training programs. In recent times it has expanded to the sharing of resources electronically and has also meant the carrying out of the traditional activities in an electronic environment. (Jimba, 1999). In India, there is a great potential in the form of human resources who are IT savvy, an important component in any communication structure. A well- planned strategy to tap this potential for the use of library networks has to be designed by the government agencies. Training programs for the library personnel to handle the hi-tech libraries should be designed in close collaboration with the help of the IT experts. Collaboration, cooperation and coordination between library and IT personnel are essential for the proper and effective management of library and information centers.

International cooperation & coordination can also be a solution which will mitigate the problem of large investment in materials by libraries in India. An illustration of international cooperation would be the PAM-APF (Physics, Astronomy, Mathematics - Asia/Pacific Forum). It is a recently formed regional network, a collaborative effort from the PAM division of Special Libraries Association (SLA) and the Asia Pacific Interest Group (APSIG) of the Australian Library and Information Association (ALIA). This acts as a forum for the sharing and exchange of information resources and knowledge and has participants from 23 countries.(Corbin et al. 2000). A website of this regional forum has been established at http://msowww.anu.edu.au/library/pam-apf/intro.html

From India, only a few special libraries have currently joined this regional network as members. It will be more beneficial to university libraries to participate in this forum, which will give an international exposure and exchange of resources and knowledge for the information professionals in our country.

Library Consortium

Library consortia is a collective activity, which is a spontaneous phenomena for any group of libraries in any country. For libraries, consortia provide shared expertise, access to new electronic and print resources, professional development and new sources of funds. In India, the consortia concept is still in the nascent stage. When networking of the libraries came into existence, few years back, there was a reserved approach from the information professionals to extend their total cooperation in India. Now after experiencing the benefits of the networking in recent times, there is now a decided move to exploit the advantages of consortia

also. We should prepare ourselves for such a move immediately by analysing and finding answers to the following questions;

a   Is there an ideal model for library consortia? Can we identify any successful practices which can be followed for libraries in India.

b. What is the role of the government in facilitating the establishment of any consortium?

c. How large can the consortia be and still be effective?

d. How can member libraries minimize the time and cost, while maximizing the benefits of collective action?

The consortia models currently available are those developed by the developed countries. To answer the questions raised above libraries in India will have to develop their own models. The CSIR libraries are proposing formation of consortia, so also the libraries belonging to the Science City Network. Initially, we have to spell out the purpose for which a consortium is established and also the commitment from every member of the consortium. Since, we do not have any established working library consortia right now, we need to consult or involve government agencies to form some guidelines. This will offer a level of confidence for our libraries to bargain for better services from the publishers/vendors.

As far as the size and complexion of the consortia is concerned, there is a unique challenge which we face in India. Since there is already a disparity in the availability of funds, between various organisation, it is difficult to form a single group with similar facilities available in libraries. A suggestion would be that the universities network already existing might take the initiative in converting their network into a consortia. This will be a worthwhile attempt since most of the members will have similar interests and resources. Special libraries can design their own consortia, depending on their needs and geographical location as is being proposed for the Science City.

A similar move has been started in Bangalore to form a consortium of special libraries group consisting of 15 members. The primary aim of this consortium is to share the access to electronic journals, their license and the cost. These days, virtually all consortia share their license to electronic resources, but many also offer a wide range of other services such as shared catalogs, interlibrary lending, digitizing, preservation etc. A very important aspect of the commitment is the cost involved in any successful consortia functioning. Though every member of a consortium stand to gain equal access to information for what they pay and several accesses to much more information, we need to be more practical and also jointly

bargain for a different pricing structure from the publishers/vendors. (Louis & Vagiswari, 1999). In addition, the members of consortia have to prepare themselves to overcome the infrastructure challenges, in the form of acquiring the basic knowledge of Information technology and also enhancing their communication with their international colleagues.

Twinning Programme

For better cooperation between libraries at the International level twinning programme appears to be a very fruitful proposal. According to UNESCO Guidelines 1994 Twinning is defined as "The ongoing relationship between two libraries in different countries for the purpose of improving the practice of librarianship boundaries. The Twinning relationship should have mutual but not necessarily equal benefits to both libraries. Kesselman (1999) has written an interesting and detailed paper on International Partnership for Science Technology libraries.

Twinning program will help the resource-poor-library to be in constant touch with resource-rich-library to become aware of the new technologies useful to the library with reference to connection to expensive databases, access to current information and other facilities will be possible through this partnership. It will give an opportunity to the librarians to plan the sort of skills that they should develop to provide good service to both the partners. To enter into an agreement the goals should be specified as well as the financial implications and the time frame. By this it becomes clear what is expected of each library. This would be beneficial only if the partners have their institutional support, so it is necessary to formalise the partnership. IFLA has developed an international database, which acts as a mediator for libraries looking for a potential twinning partner. This programme has been developed by IFLA known as Universal Availability of Publications funded by UNESCO PGI programme. (IFLA, 2000). This is the first time a focal point has been established where libraries can turn to while looking for partners. The twinning program need not necessarily be between the developed and developing countries. It can also be between developing and developed countries. There are areas of specialization and endeavour wherein the information flow might have to be more from developing to the developed. This might especially be so in the areas of population studies, epidemiology of tropical diseases etc.

International Assistance for Training and Infrastructure

It is already well known that international collaboration has had a very profound impact on Indian science. There have been many avenues for exchange of

information, such as funding visits of scientists to international meetings and training programmes in well known laboratories.(ICSU) International council for scientific Unions has played an active role in such exchange programmes. Now known as International Council for Science (ICS) has a large number of adhering bodies (about 25)and has helped many developing countries. (Vijayan, 2000). In case of India the Third World Academy of Sciences has also played an important role in helping scientists to visit International Centre for Theoretical Physics, located in Trieste. In addition to this, there are several fellowship programmes for scientists in India, like the Humbolt fellowship, Fulbright fellowship, Commonwealth fellowship etc. Though collaboration and exchange programmes are many for scientists it is not the case with library and information professionals. There are a few fellowships for librarians like the Fulbright programme and the Commonwealth fellowship, which help one or two librarians working in special libraries. If librarians have to function effectively then there is a need for more international training programmes and also international assistance for visits and travel. PAM-APF has established PAM International Membership Award (PAM IMA) and the PAM International Travel Award (PAM ITA). The first Award provides two years membership to Special Library Association, for the librarians from the developing countries. The PAM Travel Award is sponsored by the Geelong East Rotary club (Australia), which partially funds the PAM IMA winner to attend the SLA Annual conference in the USA. (Corbin et al., 2000). These Awards are for the special librarians working in the libraries where Physics, Astronomy and Mathematics are in focus disciplines. In the case of University libraries and the librarians are concerned, we (AV and CL) have contacted ICTP (Trieste) for helping the libraries to establish infrastructure, in the form of PCs and Internet connection. These are mainly required in the university libraries where ever basic facilities are not available. Also assistance can be extended towards the travel for the library staff to attend any national or international library conferences. Special libraries can act as coordinators between international organisations and the beneficiaries to over see that the funds are utilized properly.

Conclusion

Though libraries and information centers attached to scientific research organisations are reasonably equipped to cater to the information requirements of our scientists, the library staff need to have more specialized training in the new information technology environment. But, this is not the situation in the libraries attached to the universities. They not only need specialized training for their library staff but also a suitable communication infrastructure in addition to building up their resources.

In this paper we are mainly looking towards international sources for funds for infrastructure and communication facilities. But we are also thinking of looking towards our private sector in the country especially the IT industry which has enormous potential to help the government organisations. One major proposal mentioned in the 9th plan document is to achieve the level of 2% of GNP, through the industry. This should be made to come forward in a big way by putting demands in the existing R & D infrastructure and by supporting innovative programmes for technology development and refinement.

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