INFORMATION NETWORKS

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1. Prologue

Doctors and biomedical researchers in USA are able to access information on 16,000 biomedical journals through their desk top microcomputers. Nuclear scientists in India can have access to literature available in more than 100 countries. Demographers and social scientists can obtain information from more than 100 institutions spread around the world. Two thousand libraries in USA and outside are connected through online terminals for cooperative cataloguing, acquisition of documents and related information activities. The philosophy behind such developments is sharing resources and working together for the common goal, namely improving access to information.

2. Information Networks Defined

Let us spend a few minutes on the meaning of the two terms. The first one 'Information' is familiar to all of us. However, to be explicit, it refers to the bibliographical/documented information. The other term is 'Network'. According to Webester's dictionary, network means "in interconnected or interrelated chain, group or system"

In the context of bibliographical information the term network was defined by many. However, the following definition of Broadbent is comprehensive and appropriate.

"An information network is a system that integrates institutions – libraries, documentation centres, information centres and analysis centres – into a coordinated whole, to provide a community of users with relevant input data, irrespective of its origin, format and physical location".

3. Do We Need Networks ?

The answer to this question, needs a probe into the growth of information and its availability to the user. It is an accepted fact that there has been an exponential increase of scientific literature since the beginning of the century. The output of scientific and technical articles in periodicals alone was 19,85,000 during 1960. And by 1980 it was estimated to be 53,00,000 approximately. Whereas in the availability of this information there are many barriers. They are:(i) inadequate foreign currency, (ii) different languages in which the documents are published, (iii) limited number of copies of documents produced (this is particularly true for Govt documents), and (iv) lack of knowledge about the contents of the documents. Substantial information is gathered in the processes of administrative activities of the Government but it never reaches the main stream of book selling activity. Even though there are solutions for each of these problems, the flow of information is still hindered.

4. What are the Fruits?

The fruits of information networks are the array of benefits which can be summarised as follows: (i) Maximum availability of information to the user (researcher, planner, administrator, policy maker, etc.), (ii) Improved access to documents like working papers, background papers, unpublished reports, conference documents which have a very limited circulation, (iii) Access to Govt. publications with small print runs, (iv) Augmenting the availability of resources without increase in budget, (v) Avoiding unwanted duplication of activities leading to information services, (iv) Comprehensive control of bibliographical output. Inspite of these benefits networking cannot be viewed as the only panacea for all the problems in the flow of information. However, it is one of the best approach as for the remedy.

5. Networks can be Classified

The information networks formed world over can be classified on the basis of several criteria, of which the following are important:

Geographical Area — networks covering specific geographical areas. They are either global, regional, sub-regional, national or local,

Subject — networks covering specific disciplines/subjects like population, nuclear science, agriculture,

Activity — networks restricted to specific information activity like control of serials, cataloguing, and

Promotors — networks covering governments, international agencies, political groups and commercial agencies. The networks are also formed normally in combination of the above criteria.

6. Organisational Structures

The information networks operate with different type of organisational structures. All such structures can be generalised into three patterns. They are: (i) Directed (or centralised) networks, (ii) Non-directed (or distributed) networks and (iii) Hierarchical networks. There are both advantages and disadvantages of each of these basic patterns. Many a time, networks function with arrangements combining these basic patterns.

7. Formation of Networks

Information networks cannot be established without involvement of people managing the libraries, documentation centres, information analysis centres, users of information and administrators of the parent institutions. Therefore, their willingness and commitment for participation in the network is a primary requisite. Once it is assured, the following elements help in building the network and operating it for achieving set objectives:

i) Clearly defined scope and objectives of the network,

ii) Clear understanding of the role of coordination and participation in discharging various responsibilities,

iii) Established standards and methods of working,

iv) Management of the networks,

v) Use of common technologies for communication and computerisation

vi) Training for input preparation and use of outputs generated,

vii) Agreement on products to be generated in the network,

viii) A detailed workplan indicating the steps/phases in development, operation and evaluation, and

ix) Budget on continuous basis

8. Global Networks

Among the global information networks, AGRIS, DEVSIS, and POPIN have been described below:

AGRIS, information network system in agriculture was promoted by Food and Agricultural Organisation of United Nations. It started functioning since 1975. It is a centralised network for the purpose of processing the information and decentralised for distribution and dissemination of information. The network has a coordinating centre in FAO with national input centres located in the member countries. AGRIS was proposed mainly to overcome the inadequate coverage by major indexes, the agricultural documents produced in developing countries.

AGRIS coordination activity includes information handling tool like "Guidelines for Bibliographic Description, Classification Scheme". Training and audio-visual programmes were also organised for use of AGRIS products. AGRINDEX, AGRIS monthly magnetic tapes, SDI services are some of the products.

The success of AGRIS was due to the initiatives taken by the respective governments, standardisation of procedures, training for input preparation and use of outputs.

DEVSIS, Development Science Information System was started as an experimental global information network during 1975. It was supported by UNESCO, ILO and IDRC.

DEVSIS system supports the concept of decentralised input, centralised processing and decentralised dissemination. The objectives of DEVSIS are maximising resources at the country level. The emphasis placed on documents in DEVSIS is non-conventional literature. The products of DEVSIS include 'Devindex' and machine readable database.

POPIN, United Nations Population Information Network is relatively a new development of global networks promoted by UN. POPIN is a decentralised network for the coordination of population information activities at global level. POPIN has a membership of 100 institutions involved in population activities. The POPIN coordination unit unlike AGRIS has no role of consolidating information. The coordinating unit has made considrable progress in producing documents for networking. They include: Population Multilingual Thesaurus; manual for networking, computerisation and classification. Regional networks of POPIN are in the process of development. The most progressive one among them is POPIN ESCAP located in Population Division of UN-Economic and Social Commission for Asia and the Pacific, Bangkok. Sub-regional network like ASEAN POPIN covering ASEAN countries has already been initiated. There are initiatives for the development SAARC POPIN also.

9. Regional Networks

Among the regional information networks HELLIS and APINESS have been described.

HELLIS, Health Literature Library and Information Services, a regional network of health science libraries promoted by World Health Organisation, Regional Office for South East Asia (WHO-SEARO) came into existence during 1979. HELLIS covers all 11 member-

countries of WHO and Regional office for South East Asia. The overall objectives of HELLIS network are to make better use of existing resources in each country, in other countries of the region and in other regions of WHO. The structure of the network consists of national network with a national focal point and regional non-directed network linking the national focal points. The WHO-SEARO coordinates the national focal points. The products of the network include directories of national network libraries and cooperatively produced index of medical literature (ie INDEX MEDICUS-SEARO, WHO). Two national focal points were designated as source centres for supply of photocopies to all 11 member-countries. The network funding is mainly provided by WHO but national governments do not seem to have allocated any funds. This will be a hinderance for continuation of network activities when WHO funding ceases. There are other networks promoted by WHO-SEARO like Primary Health Care (PHC) Information Network and Health Service Research (HSR) Information Network which are still in their infancy.

APINESS, Asia-Pacific Information Network in Social Sciences launched in 1986 has been promoted by UNESCO and Asian Social Sciences Research Council. The immediate objective of APINESS is to link up the existing major social science libraries and documentation centres in the region (Asia-Pacific of UN) to facilitate exchange of knowledge. APINESS proposes to support the activities related to development of new information centres, production of indexes, abstracting services, directories and inventories.

10. National Information Networks

National information networks play significant role in the development of regional and global networks. Among them OCLC and NISSAT are described.

OCLC (Online Computer Library Centre) has emerged in 1981 from Ohio College Library Centre, a cooperative computerised regional network of 54 colleges libraries in Ohio, USA. OCLC consists of bibliographic computer and telecommunication system for sharing of library resources. Its services are available to a wide range of libraries in USA and outside. Nearly 6000 libraries use OCLC. 2000 have the online terminals. The overall objective of OCLC system is to reduce the cost of input per unit (document) and increase the availability of information and documents to its users. The online Union Catalogue of OCLC is developed in a cooperative way by the regular input of participating libraries, retaining individuality of each library collection at the same time. Inter-library loan requests are operated online. The OCLC system is used for book cataloguing, serial control, acquisition, monitoring etc. The network has a Board of Trustees of 16 members to guide on policy and budget. The OCLC has 21 regional networks.

NISSAT, National Information System for Science and Technology in India was established in 1977. NISSAT, a decentralised network consists of sectoral centres, regional centres and local information units. The coordination is done by NISSAT coordination unit in the Ministry of Science and Technology. NISSAT aims to promote and support the development of information centres. Integration and linking of sectoral centres is still awaited.

11. Activity Oriented Networks

Activity oriented networks like PHILSOM, (an acronym of schools of medicine) is an activity based network to control serials in the

area of medicine. The data-base was essentially promoted by the Washington University School of Medicine Library in St. Louis in the year 1962. It became a network by 1968 for periodical holdings in libraries. The network functions as a distributed system. The products of PHILSOM are computer generated desk copy of the holdings. Individual network members can also produce subject list. The central coördinating unit annually brings out a Key-Word Out-of-Context list. The system can be used not only for inventory of holdings but also for control of receipts, reminders, etc.

12. Epilogue

Computer/electronic technology has brought in significant improvements in information networks during 1970s. Manually operated information resources and their inventories have been mechanised. The publishing world also added their share by introducing computers into production of journals. MEDLARS (Medical Literature Analysis and Retrieval System) gave the lead as the first computer-based bibliographical system covering, the entire gamut of bio-medical science. The other development like INSPEC, DIALOG, ORBIT, EAS/ RECON, BLAISE, EURONET have made their impact on online information systems covering several disciplines in science and technology. However, most of these services do not have adequate arrangement for document supply. With the introduction of electronic imaging and video-text technologies, the future of information networks is promising. The developments that can be anticipated are not only in improved online availability of records (surrogates) of information, but also supply of documents (full texts) online.

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