ROLE OF LIBRARY NETWORKING

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GENERAL

The concept of library network came for a long tradition of cooperation in librarianship. When one library provides a service to another library the rudiments of library network is found. The cooperative system among libraries have existed also in the form of Interlibrary Loan System and Union Catalogue, But this kind of cooperation and the recent developments of networking differ in many ways. Though it can be called that networking is only an extension of traditional cooperative arrangements.

DEFINATION OF NETWORKING

The term 'Networking' or 'Network' is used in different contexts. Information network has become very popular and is used frequently by information specialists.

"Network as a firm of arrangement or an administrative structure that links a groups or individuals or organizations who have agreed to work together and/or have resources so that the information - form the local to national level of all network participants are met." (UNESCO)[1].

"Within the field of information service the term network implies the existence of a group of separate information centres that participate in some form of Resources Sharing for their mutual benefit." (F.W. Lancaster)[2].

In short a network has been used to mean: a collection of interconnected computers, when multiple computer are interconnected using some media and intercommunication facilities are provided, a Network is setup.

Networking solves the problems of PC isolation. It lets PC- users share files, applications and resources.

Advantage of Computer Network
* Resource Sharing
  Data, device and applications are shareable.
* Eliminating Duplication
* Reliability
  Availability of alternate computer & Data sources makes it possible to continue operations in spite of hardware failures.
* Heterogeneous connectivily- machines of different platforms and operating systems can be interconnected.
* Communication - Users can communicate easily, instantaneously & economically over large distances. Electronic Bulletin Boards, E-Mail, etc. are part of this.
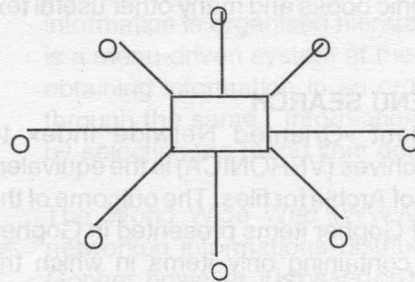
General Structure of a Network

In a network, computer (known as hosts) communicate with each other by means of a communication sub-net. The sub-net consists of -
(1) Transmission lines

(2) Switching elements - or packet switch nodes data switching exchanges, route data along the appropriate transmission lines.
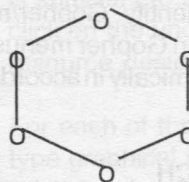
Communication Subnets are

(1) Point - to point - pairs of switching elements like telephones are connected. Communication lines, may be direct or thru intermediate nodes.

(2) Broad Cast - All machines share a common communication channel. This is the type of subnet found in LAN (Local Area Networks).

Lan Topologies : (1) Star
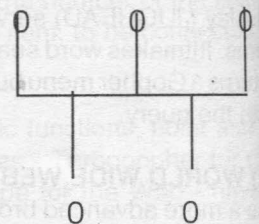   (2) Ring
     (3) Bus

(1)
all nodes are connected to the central nodes

(2)
each node is connected to 2 other nodes

(3)
all nodes connected to common communication media

They can be interconnected by using cables which can be...

-- ARCNET

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-- Ethernet    )  The choice depends of
     -- thin    )  data speeds, distances]
     -- thick   )  involved & costs.
-- FODI         )
   (Fiber Optics )
   Data Interface)
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Library Network Development

There has been a spurt in activites on library network developments in the recent past. Some of the factors responsible this are :

* Growth in awareness of the need for resource sharing.
* All round resurce crunch.
* Increase in computer installations in the library environment & the enhancements of the skills of library personnel.
* Improvement in computer communication facilities. Availability of general data network like
                              NICNET, INET.
* Creation of facilities for electronic mail by ERNET, SIRNET etc.

The library network development in India deals with

:(1) Metropolitan Area Network (MAN)
      These include
                 Ahmedabad - ADINET
                 Bombay   - BONET
                 Madras   - MALIBNET
                 Calcutta   - CALIBNET
                 Delhi   - DELNET
 (2) Country - wide networks, INFLIBNET (for universities)
 (3) Sectorial Networks DESINET (for defence lab) for Oil & Natural Gas Biotechnology information (OILNET)

The path of development taken by networks varies and broadly 2 routes are followed :

(1) Individual libraries are automated & then linked thru a computer communication network eg. CALIBNET & INFLIBNET. Ultimately such *networks*, would produce Open Public Acces Catalogues (OPAC)

(2) Libraries are networked thru E-Mail on start with, while individual libraries may proceed with their own retrospeective conversion activities. The offline services are backed by couriers for physical transfer of documents. DELNET, PUNENET.

Hardware & Software

The networkes use DOS & UNIX based systems. For E-Mail, UUCP & X-400 on DOS are predominantly used.
So far as library automation & catalogue database

creation is concerned, although there is a wide choice on the DOS environment. CDS/ISIS reigns with a large number of installations.
In the Multi-user Unix environment, the popular softwares are :

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MAITRAIYEE  -- on INGRESS
LIBSYS      --  C / COBOL
DELMS       --  COBOL
LIBRIS      --  C Tree
TULIPS      --    ORACLE
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to name a few.

Communication :

(1) Public Data Communication Networks like I-NET supported by Department of Telecommunications.

(2) NICNET

(3) INDONET of CMC Ltd.,

(4) ERNET

These are some of the networks that can be used. Once of the major bottlenecks is library for communication.

Networks like CALINET, DELNET have a star configuration, where as nation wide networks would establish regional nodes, linked together. Most libraries would use PSTN Linbes, whereas in CALIBNET an attempt for leased lines has been made.

Standardization

Since the start of library networking concepts in India, the adoption & adaptation to standards has been a major topic of discussion.
While for communication, hardware, international standards prevail, library standards are a delicate topic & are extensively debated on.
CABLINET has adopted for UNIMARC, whereas INFLIBNET & DELNET have opted to follow CCF (Common Communication Format). While conversion from one standard to another is not a major problem = but uniformity would have been much easier.
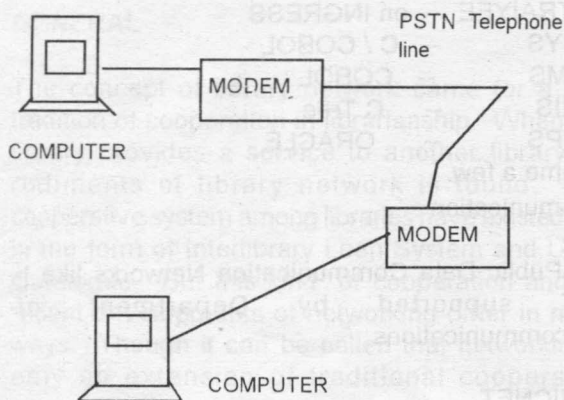
Networking needs of a Library :
(1) In house (LAN)
(2) With libraries in the same town (MAN)
(3) With libraries in the other towm (WAN)

(1) Intra Library :

A library can have a main machine & No. of terminals conducted to it. Connectivity can be made through Local Area Networking.
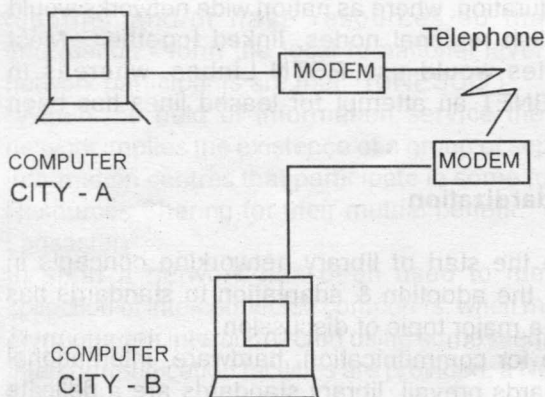
(2) Intra- City :
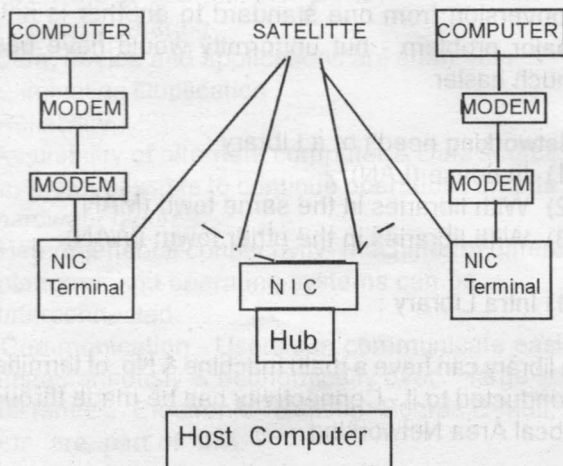
Connectivity is possible using modems & telephone lines.

(3) Inter-City

This communication is called wide area networking (WAN) and can be accomplished by

(1) Terristrial Communication
(2) Satelitte Communication
(3) MIX of (1) & (2)

Use of V-Sat's or NICNET or I-NET
e.g. NICNET

INFORMATION SERVICES

Some of the New / Activities to present day libraries, can be started.

(1) E-Mail ---- Electronic Mail ---- a facility to send messages to each other over a computer/modem through telephone line. The massages are composed on one computer, sent to another, & read on a remote computer.

(2) Bulletin - Board services --- pasting of information on a Electronic Bulletin Board for passing information & inviting discussions.

(3) CD-ROM Databases access. (Compact Disk - Read Only Memory)
Library databases in various discipline are available such as :
MEDLINE   - Medicine
ECONLIT   - Economics
CHEMBANK - Chemistry, etc. are available on CD's

(4) Online Search of Databases :
Search of information using information services. Like DIALOG allows online access to a no. of Databases such as,

(1) BIOTECHNOLOGY ABSTRACTS
(2) BOOKS in PRINT
(3) GEOBASE etc. to name a few.

5) Generation of Union Catalogues, for serials, thesis, other non-book media and costly books and access to this information.

CHALLENGES TO LIBRARY PROFESSION

In the present Information Centres therefore have to play a more dynamic & pivotal role to ensure that

(1) their scare resources are fully utilized.

(2) the increasingly complex and diverse information needs of their cliente is satisfied.

Both these functions & challenges can be met by more effective Resources Sharing. Not only the money, material & manpower resources can be shared, but also the equipment, the services, the valuable reference expertise can be shared. To make this resource sharing more effective, it is essential to form an Information Networkwhere by libraries & users can have access to the combined resources.

Libraries are thus becoming less & less a physical location & more and more a conceptual means of exploring, acquiring, harnessing and utilization of vast information service or a resource, which users

can access via a communication network.

Broad Objectives of a Library Network

* To rationalize acquisition & to optimize utilization of information resources.

* To promote and support adoption of standards in library operations.

* To improve the efficiency housekeeping operations.

* To generate new services like Bulleting Boards, online access to Remote Databases, Selective Disssemination of information (SDI) ; and to improve the effeciency of existing ones.

The essential objectives of a network are to identify and establish better ways of improving the flow of information among member institutions at all levels. In order to acheive these goals the library network has to play a vital role to satisfy the varied & complex

needs of a clientle.

BIBLIOGRAPHY

(1) Syed, Fazle Rab
The changing frontiers of Library and Information Science / Fazle Rab Syed.-New Delhi : Commonwealth Publishers, 1994. IX, 292 p.

(2) National Commission on Libraries and Infomation Science.
A computer network protocol for library and information science applications : NCLIS / NBS Task force on computer network protocol / National Commisssion on Lib. & Inf. Sci. - Washington : NCLIS. 1977. 90 p.

(3) Networks for networkers
Critical issues in cooperative library development / ed. by Barbara evans Markuson and Blanche Woolls.- London : Neal-Schuman Publishers, 1910. XVI, 444 p.