

USE OF STORAGE TECHNOLOGIES IN LIBRARIES

Dr. Pradip H.Barad

SPM Tatyasaheb Mahajan Arts & Commerce College,

Chikhli Dist. Buldana.443201

Email:barad.pradip75@gmail.com

Introduction:

The computers are being increasingly used in library and information services for processing and repackaging of information and on improving products and services of library and information centers. Computers have made possible the availability of information and have brought many benefits in library and information systems and services. The computers application to the information storage, retrieval and dissemination are the inevitable consequences of the information explosion/overload.

For centuries paper has been considered as the appropriate medium for storing of information. But now the new technologies have succeeded in storing information on various media. Mass storages is necessary to meet the following needs.¹

Permission to make digital or hard copies of all or part of this work for personal or classroom use is granted without fee provided that copies are not made or distributed for profit or commercial advantage and that copies bear this notice and the full citation on the first page. To copy otherwise, or republish, to post on servers or to redistribute to lists, requires prior specific permission and/or a fee.

Providing large-volume digital storage for archival management; Providing users with immediate access to the rapidly growing volume of data and information that is stored in digital information system and is likely to be distributed on optical media in the future; Providing users with access to multimedia information quickly and interactively through the integration of technologies and Transferring large volumes of data and / or files from one system to another.

Libraries have been using microfilm, microfiche and ultra-fiche, which help to store large volumes of data in a comparatively lesser space than the print media. Computer based mass storage technologies are becoming the major storage technologies in libraries and information centres. Computer storage technologies can be grouped into magnetic and non magnetic technologies. The magnetic storage technologies include magnetic tape, magnetic disc, cartridge tape and digital audiotape. The

optical disc, Cartridge tape and digital audiotape. The optical disc storage technologies include read only write once read many and erasable rewritable media.

CD-ROM (Compact disc read only memory):

CD-Rom was developed in 1985. The growth of multimedia titles, games, entertainment and cheap availability of videodiscs, and the latest trend in software distribution through CDs made CD-ROM discs and drives more popular. The CD-ROM, as 12 cm and 1.2 mm thick disc can hold approximately 650-700 million characters equal to about 2,70,000 pages of plain text or about 60,000 suitably compressed images. The advantages of CD-ROM are its huge storage capacity, durability, transportability, light weight, easy and fast access to and non-corruptibility of stored information, immunity to magnetic fields and amenability for parallel searching by multiple users in a Local Area Network(LAN) or Wide area Network (WAN) environment. CD-ROM can be used to store abstracts, databases, full length articles, images, audio and software. The uses of CD-ROM databases are given below;²

1. Facilitate collection development, evaluation print purchase orders,

produce card catalogue and quantitative/ citation studies as databases like books in Print Plus with about 2 million records and a number of indexes offer such flexibility;

2. serve as reference tools.
3. Support current awareness service and selective dissemination of information as it is possible to provide contents, abstracts, full text etc and also facilitate. Information retrieval by a specific journal name;
4. Allow expanded quality of services, enhanced number of users, exhaustive coverage of information at little or no extra cost or time;
5. Are viable and cost effective alternatives to online searching though not as current as online databases;
6. Facilitate library automation, retro conversion of bibliographic data as well as cataloguing since many OPAC of individual or group of libraries are available on CD-ROMs;
7. Amenable for retrospective searching as back files are also available in many cases;
8. Facilitate networking, library cooperation, searching by multi and remotely located users, and resource sharing;

9. Help in saving of resources as less used journals can be discontinued if they are included in bibliographic databases and only those articles needed from such journals can be procured based on CAS and SDI services.
10. Involve lesser transit delays and provide more current information than print media;
11. Enhance the image of the library and serve as excellent public relation tools, especially in the present environment of marketing of information products;
12. Allow exchange of bibliographic data, software, etc.
13. Are ideal for archival purposes of gray literature like internal reports,
14. Newspapers, reports, standards and patents.

Increasing availability of numerous databases such as abstracting journals, dictionaries and encyclopedia on CDs is proving a cost effective solution for libraries. With multimedia extensions, the CD are seen as provider of interactive reading and viewing materials.

CD-ROM networking is the technology that allows workstations on a Local Area Network (LAN) to access CD-

ROM drives on another computer functioning as a CD-ROM server. This enables sharing of information available on the CDs within the organization. The CD-ROMs centrally stored can be connected to an existing network and there is no limit to the number of users that can access them at any time different types of CD-ROM drives are; CD Changers, CD-Tower and CD ROM arrays. Many libraries depend more on CD-ROM databases than the online systems because CD-ROM needs only a fixed annual charge and there is no need to rely upon telecommunication networks. Online searches are used just to supplement the information obtained from CD-ROMs.

The popularity of some CD-ROM databases and the presence of Local or wide area networks in many organizations along with the increasing availability of networking solutions have provided librarians with an impetus for exploring the feasibility of simultaneous multi user access.

DVD (Digital Video Disc or Digital Versatile Disc)

Digital Video disc or digital versatile disc is an optical storage medium look like a CD but with high storage capacity. DVD facilitates greater data density by making the pits smaller and the spiral tighter, small recording pits, more closely spaced tracks,

and backward compatibility with CD-ROM for reading these tightly packed discs lasers that produce a shorter wavelength beam of light required. DVD technology provides data capacity that is at least 6 to 7 times greater than CD-ROM. Various form of DVDs are available, some of them are DVD-Video of DVD ROM, DVD-RAM . High storage capacity is achieved by compression technology and storing data on multi-layer sides. The DVDs are developed in four forms; the single side single layer, single-side double layer , double side double layers. A single sided single layer DVD can store 4.7 GB of data to double side double layer DVD Can 17 GB of data. The application DVD-RAM and DVD RW include data archiving software development video and audio editing and recording ones own optical discs.³

Some of the benefits of DVD are;

1. To, represent more multimedia elements and to integrate many reference source on a single DVD disc.
2. Its use as a single interchange standard to provide unification for computer, consumer electronics and entertainment industry;
3. Its backward read compatibility with existing CDs and future compatibility with read/write and WORM discs;
4. Its utility as a single file system for all disc types;
5. Its low cost;
6. DVD can deliver the data at a higher rate than CD-ROM;
7. It does not need for mandatory containers for playing discs;
8. Its reliability in data storage and retrieval including error correction capability for ROMs and rewritable discs;
9. Its high online capacity of 8.5 GB on a single side or 17 GB on both sides;
10. DVD drives can read both CD-ROMs and DVD-ROMs
11. Better security of data; and
12. Its high performance for sequential and non-sequential data.

High Density CD and DVD are the latest trend in storage technology. Hybrid jukeboxes can accept CDs optical discs or digital linear tapes to provide storage capacities of the order of a few Terabytes are being developed. With enhanced data transfer rates and a few GB online capacity, DVD is

being seen as a replacement to VCR. A DVD recorder may be used to record programmers digitally. Optical medium have long-term archival standard and it can be used for both online and archival applications. Optical medium claim a shelf life of more than 100 years. Another technology expected to play a vital role in storage applications is magnet optic technology.

Fluorescent Multi-layered technology is the latest storage technology. FMD-ROM can store 140 GB of data on a single disc. It is based on 3 D florescence of chemicals in the pits and grooves.

Database and database Management systems:

A database is a collection of logically related pieces of electronic information that have been organized into categories (Known as fields) and grouped into units (known as records) . Databases are created so that stored information can be found when needed. It is designed, built, and populated to take in information and information sources acquired for the specific purpose of serving user groups. It has an intended group of users and some preconceived applications in which these users are interested. The selection of information and other sources is based on the objective of serving them.

DBMS (Database management system) is the software used to manipulate and access data stored in a database. It provides facilities that allow users to deal with data without needing to know how that data is actually stored or retrieved. DBMS acts as an interface between the user and the data. The maturation of DBMS technology has coincided with significant developments in distributed computing results the emergence of Distributed database management system is a database management system capable of supporting and manipulating distributed databases. Distributed database is a logical database that is physically divided among computers at several sites on a network. The basic motivation for distributed databases is improved performance, increased availability, shareability, expandability and access facility. Distributed database management system manages applications based on data access from different sources at multiple location.

Data warehousing and data mining:

Data warehousing involves integrating the data from a number of source databases in to one target resource centre, the data warehouse. The Data warehouse provides the required resource for informational purposes, and is analysis and decision support oriented, not operational or transaction oriented. The

data warehouse is relatively non-volatile because the data are updated at fixed periodicity and not any time in between. Warehouse generation, data management and data access tools are the three distinct aspects in the implementation of data warehousing⁴

planning, forecasting, organization and management decisions can be made on information obtained from the warehouse by data mining. Data mining is the process of extraction of previously unknown potentially useful information from the database. Various data mining algorithms exist which can extract various association rules, classification rules or can cluster the data. The single distinguishing characteristic of the data mining algorithms, which differentiates is from the traditional algorithms, is that it works on extremely large data set. Predictive modeling (using statistical clustering techniques), link analysis (Using association theory) and deviation detection (filtering techniques) are the major operations involved in data mining process⁵.

Conculation :

The future of library automation systems will include information kiosks, where people with no computer experience can access information easily. Information scientists will create the human computer

interfaces and library scientists will manage the resources. Current trends in library automation reflect the dynamic nature of library automation. Library automation will continue to change and evolve in the future.

References :

- [1] Gupta, Praveen (2003) Information Technology, Jaipur: ABD ,.
- [2] Kothari, C. R. (2006) Research Methods and Techniques. New Delhi: New Age International.p.57-120.
- [3] Kumar, P.S.G. (2004) Research Methods and Statistical Techniques. New Delhi : B.R. Publication.p.79-179.
- [4] Muhammed Haneefa K.(2006) Application of Information and Communication Technologies In Speccial Libraries. in Research on Library Computerisation. New Delhi : ESS ESS Publication.p.242-535.
- [5] Murthy, C S V: Information Technology, Himalaya, Mumbai, 2001, P 1-79.
- [6] Ojha, D.C., R.K. Dave and K.K. Sharma. (2000). Impact of Information Technology on Libraries ; A Futuristic Approach. *ILA Bulletin* vol. 36, no.3. October – Dec. p. 87-92.
