

**COMPARATIVE EVALUATION OF ONLINE AND CD-ROM SEARCHES IN
A CELL SCIENCE LIBRARY IN INDIA**

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ABSTRACT

Examines the use of online and CD-ROM databases at the National Centre for Cell Science Library, Pune, India. The technologies of online and CD-ROM are analysed and the day-to-day use of these two technologies presented. Increased online and CD-ROM searches created the need of comparing both the system at preliminary level which provided an integrated view of the information process at the NCCS library for future electronic information services. The findings indicate that requests for online searches remained fairly constant, while demand for CD-ROM searches steadily increased. From an analysis of search data of these two systems, the study concludes that both information systems are complementary to each other.

Keywords: Online searches and retrieval; CD-ROM databases; Database searches.

INTRODUCTION

Electronic databases and computer networks are bringing forth significant changes in both formal and informal information transfer mechanisms in science and technology. More than 6,000 electronic databases are estimated to be available today, which include a large number of bibliographic and scientific databases (Rajashekar, 1994). While the majority of these databases can be accessed online using computer communication network, they can also be acquired on tapes, diskettes and CD-ROM discs and searched locally. CD-ROM databases thus come closer to the concept of desktop global information systems, since the entire set-up including a PC, a CD-ROM drive, CD-ROM discs,

associated soft-ware and documentation can be housed on a single table top.

The medical literature has been growing rapidly and is being stored in electronic media enabling faster and more flexible access to the literature since the 1960s. Increased online and CD-ROM searches created the need of comparing both the systems at preliminary level to have an integrated view of the information process at the National Centre for Cell Science Library, India for future electronic information services.

The present study compares online and CD-ROM searches carried out at NCCS funded by the Department of Biotechnology (DBT) of the Government of India. The library and information ser-

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vices of DBT established in 1990, now provides a wide variety of information services to NCCS scientists and university scholars. The NCCS library, is essentially a special library in the area of biomedical sciences and biotechnology and is frequently used by about 300 users from academic and research institutions. The primary objective of the library is to provide, exhaustive and expediate information to user's community for their specific-cum-peripheral information requirements having relevance to their research work at NCCS. Users at NCCS have benefited from online searching of international databases through DIALOG since October 1993.

The library started offering the CD-ROM search service from 1992. Considering the information needs of the users and other criteria such as cost, content, scope, coverage (Medline - 3,700 journals, *Biotechnology Abstracts* - 12,000 publications, including conference proceedings and patents), frequency of updating, user friendliness of search software, down-loading capabilities, vendor support, etc. the library started acquiring the *Dialog Ondisc* (Medline) and Silver Platter's *Biotechnology Abstracts* from 1984 and 1982 respectively.

METHODOLOGY

A list of individuals who used either services during the period studied was compiled, using (i) the search register maintained in the library wherein patrons provide keywords to carry out searches, (ii) the Medline CD-ROM sign up sheets and (iii) online search request forms. The

other parameter used in the study is the feedback obtained from selective dissemination of information (SDI) service. The SDI service is generated as each new monthly CD-ROM disc arrives and outputs are sent to each scientists with a request to retain the users part for his perusal and return the feedback part to the library after ticking the items of which full-text copies is required. To find out why a user prefers a specific system, it is important to encompass users of both services. There-fore, users were asked to indicate who had completed the CD-ROM searches. This helped to identify the librarian mediated searches during 1972-1995. The study does not attempt any cost analysis of both systems. The data used comprises of the number of searches done on either system.

DISCUSSION

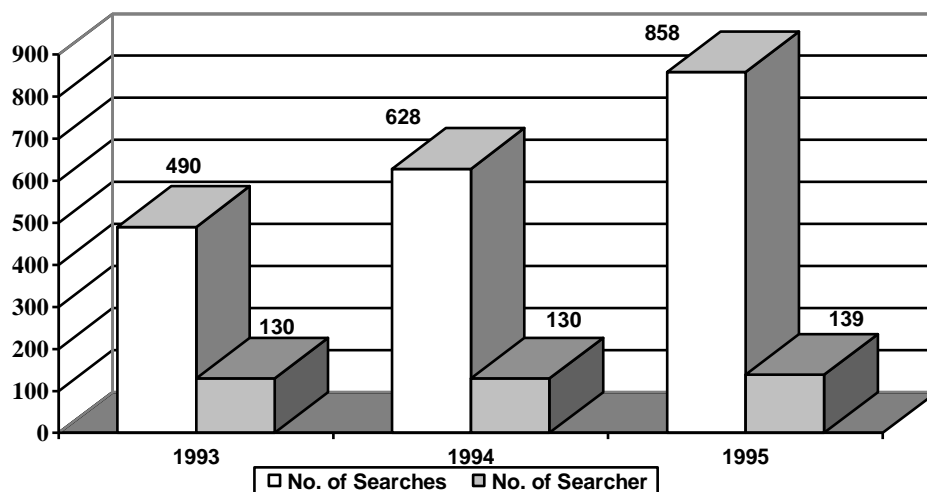
From the analysis of the CD-ROM searches, it is found that there were a between 130 and 139 searchers conducting searches in 1993 to 1995. Searches substantially increased from 1993 and 1994 to 490, 628 and 858 (Table 1, Figure1). Subject-wise analysis of CD-ROM searches revealed that molecular biology/ molecular genetics account for the highest percentage (11.8%) of searches followed by cell biology (10.9%) and cell and tissue culture (10.1%). Enzymology accounts for the lowest percentage (3.6%) followed by the pa-tents (2.0%) (Table 2). An examination of the interlibrary loan requests during 1993-1994 for full text articles reveal

Table 1: Subject-Wise Breakup of CD-ROM Searches

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S.I.	Subjects	1993	%	1994	%	1995	%
1	Biotechnology	24	4.8	32	5.0	43	5.0
2	Cell & Tissue Culture	37	7.5	52	8.2	87	10.1
3	Cell Biology	57	11.6	49	7.8	94	10.9
4	Cryobiology	25	5.1	44	7.0	63	7.3
5	Dermatology	32	6.5	48	7.6	36	4.1
6	Diabetes	19	3.8	32	5.0	41	4.7
7	Enzymology	24	4.8	27	4.2	31	3.6
8	Hematology	38	7.7	49	7.8	38	4.4
9	Immunology	38	7.7	42	6.6	84	9.7
10	Molecular Bio/Genetics	42	8.5	78	12.4	102	11.8
11	Oncogene / Cancer	47	9.5	59	9.3	84	9.7
12	Ophthalmology	25	5.1	36	5.7	52	6.0
13	Organ Transplantation	26	5.3	27	4.2	35	4.0
14	Parasitology	40	8.1	32	5.0	49	5.7
15	Patents	16	3.2	21	3.3	18	2.0
	Total	490		628		858	

Figure 1: CD-ROM Searches 1993 – 1995



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that the number of requests received from the users increased from 734 in 1993 to 881 in 1994. About half of the requests generated are from CD-ROM searches.

Online search data is summarised in Table 2 for the years 1994 and 1995. In all 37 searches were conducted in 1994 and 45 in 1995 (Figure 2). The number of searches conducted on non-MEDLARS databases increased considerably during the period suggesting that the searchers used the most appropriate database for their information need rather than the least expensive most accessible database. The status of CD-ROM and online searches indicate that requests for online searches remained fairly constant, while demand for CD-ROM searches steadily increased.

Most end-users prefer to download the CD-ROM references rather than printing. Internal CD-ROM users, comprising 80% of the total searchers preferred searching Medline themselves without depending on an intermediary since there was no cost involved. Moreover, they could browse the entry and be selective. They often saw other related topics while searching and gained information from browsing through abstracts. They found the system to be faster compared to using bound volumes of journals or indexes. A few respondents used CD-ROM because of their ability to select relevant citations easily and weed out extraneous articles immediately. The rest of the searches were performed by intermediaries.

Although the CD-ROM search system is in general user friendly, users find it difficult to switch from one search

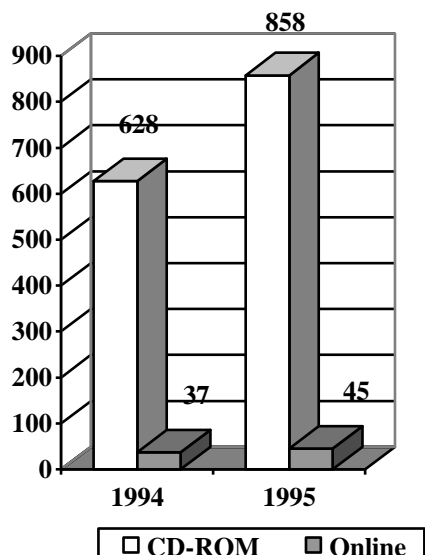
system

Table 2: Online Searches

Sl.no.	Subjects	Searches Conducted	
		1995	1994
1	Biotech/Bio diversity	3	4
2	Cell & Tissue Culture	6	5
3	Cell Biology	3	3
4	Cryobiology	5	4
5	Immunology	2	4
6	Medicinal Plants/Ayurvedic	2	4
7	Mol. Biology/Mol. Gen	4	6
8	Ophthalmology	4	3
9	Organ Transplantation	3	4
10	Parasitology	2	3
11	Patents/Patenting	3	5
	Total no. of searches	37	45

Figure 2: CD-ROM and Online Searches 1994-1995

Comparative Evaluation of Online and CD-ROM Searches



to another. A general remark made by the users is that the CD-ROM searching requires switching from one disc to another, which makes the searching cumbersome and suggested for CD networking.

The reason for searching databases online is because the fields of research in biotechnology and biomedical sciences are so wide-ranging that not a single database covers all aspects of biotechnology. *Medline* on CD-ROM is used to conduct most of the searches together with the online databases, chosen in relation to the specific topic. It is also noticed that the major biological indexing services such as *Medline*, *Embase* and *Biosis* do not index patents. It is probable that important information of biotechnological interest reported in patents is not available in the scientific journal literature. As a result other databases accessed are *Derwent's World Patent Index (WPI)*, *US Patents Full*

Text, etc. for patent information. Despite the availability of *Biotechnology Abstract* on CD-ROM, users are still not satisfied due to delays in receiving updates in the library. The scientists was found to require a better understanding of MesH since some keywords often do not yield information while changing from one database to another. Hence, a few users preferred librarian mediated search service as librarians are well versed with MesH headings and search strategies.

CONCLUSION

When making comparisons between the online systems that provide instantaneous access to new data and databases on CD-ROM, we find that CD-ROM databases lack currency because the production of a compact disc takes time. The *Biotechnology Abstracts* on CD-ROM did not meet users' need regarding patents as it is not up-to-date enough, which could be better met accessing databases online. This disadvantage, however, can be overcome by beginning the search with CD-ROM databases, and then extending the search to online databases if needed.

The increased availability of medical information in electronic media, simpler methods of searching databases and an enhanced capability to store and use information is likely to make collaboration between researchers, students and their libraries or information centres a reality. Need has also arisen to educate the users in the searching of information from electronic media. Further, the medical curriculum must incorporate information technology modules that

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include details of electronic information sources, and method of searching them. The analysis has provided NCCS sufficient insight in planning document delivery (full text) services for the future. In view of NCCS's user population in accessing the information via electronic media, the library is in the process of augmenting CD net working for multi-user access.

REFERENCE

Rajashekar, T.B. and A. Sreenivasa Rao. 1994. Electronic databases, networks and information support for scientific research. *Current Science*, Vol.66, no.3: 199-212

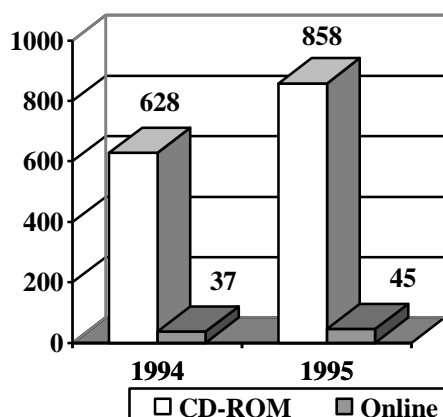
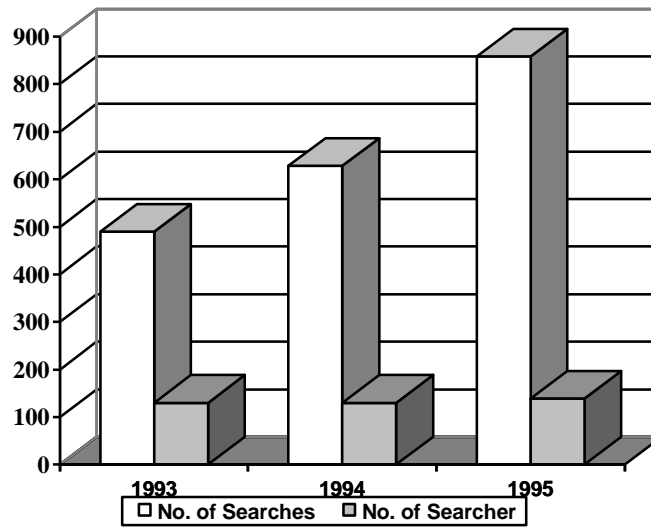


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