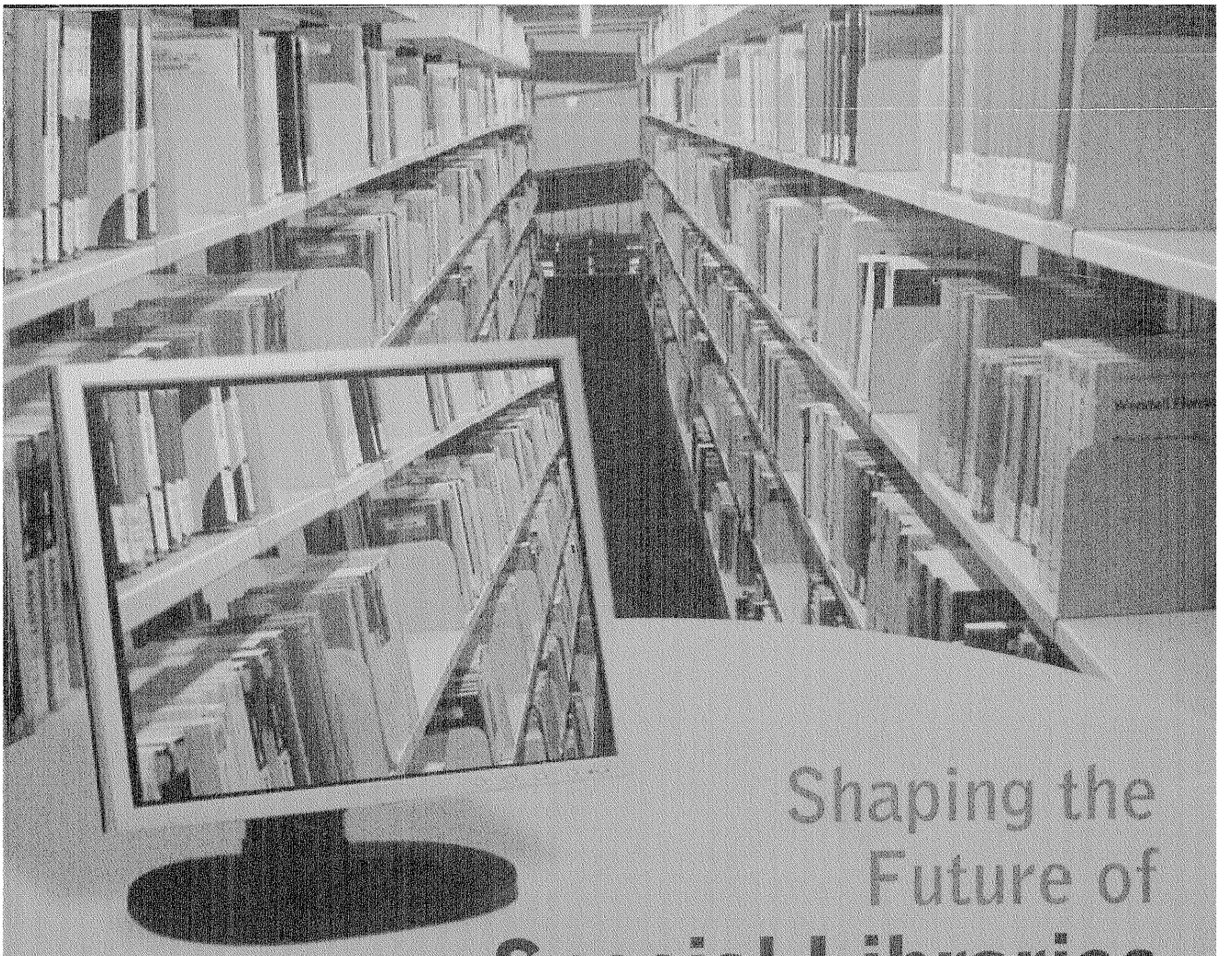

Shaping the Future of Special Libraries Beyond Boundaries

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IMPACT OF DIGITAL ENVIRONMENT ON LIBRARY USERS: A CASE STUDY OF NPL

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ABSTRACT

This paper examines internet use for identifying information seeking habits of users by using observation, interview and questionnaire techniques. Based on survey of internet users in the National Physical Laboratory, the study identifies how scientific and technical community utilize internet for meeting their information needs. It has been found that, scientific and technical community seek training program on computer, search training on internet and they also seeks to get latest information on happenings and developments in electronic publishing and digital world.

Keywords: User survey, E-journals, Internet impact

INTRODUCTION

The emergence of the internet, particularly the World Wide Web (WWW), as a new medium of information storage and delivery represents a revolution which will have a lasting impact on the publishing & information delivery system in the 21st century. An increasing number of publishers are using the Internet as a global way to offer their publications to the international community of scientists and technologist. Today information technology has transformed the nature of information accessibility and its management. The development in telecommunication and networking technologies has made the world more interconnected. One of the most exciting manifestations of this interconnection is the internet.

Presently libraries are undergoing changes in their ways of searching processing and providing information. Information storage and retrieval has become highly transparent and easy to use. Internet is now having a momentous role on library services and operations and on professional activities of libraries. Due to its multifaceted nature it fulfill its significant roles in library services, it is a resource that can be consulted and used like any other reference tool and it is more dynamic and far reaching than any other

resources and used in a library setting. Further, it provides a medium of communication that has extended the potential of librarians for interaction beyond the physical theory.

With advancement of technology the libraries are moving towards digital Resources, which are found to be less expensive and more helpful for easy access. These are helpful especially to distant learners who have limited time to access the libraries from out side by dial up access by the commonly available electronic resources mainly CD-ROMs, OPACs and Internet etc., which are replacing the print media.

NPL AND ITS LIBRARY

The National Physical Laboratory is the premier research laboratory in India in the field of physical sciences. It has developed core competencies in standards, apex level calibration, engineering materials, electronic materials, materials characterization, radio and space physics, global change and environmental studies, low temperature physics, and instrumentation. Established in 1947, it is one of the oldest laboratories of the Council of Scientific and Industrial Research (CSIR). Its main activities are Research and development, Consultancy, Sponsored and contract research, Calibration and testing

The main aim of the laboratory is to strengthen and advance physics–based research and ensure overall development of science and technology in the country. Over the long period, the Laboratory has come to develop several new technologies of strategic, societal and national importance. The total strength of NPL regular staff as on 1 September 2008 is 856 and the floating staff is 178, the regular staff includes Scientist (202), Technical officers (126), Technician (194), Technical helpers (76) and Administrative is (258)

The National Physical Laboratory, New Delhi has a specialized library catering to the needs of scientist and technologist having interest in various subjects' areas such as, Physical sciences. The NPL library has the largest collection in physics with in India. The library has collection of books 43986, bound volumes 72024, Hindi books 1246, Electronics journals are 5000+ and Current subscribed journals are 109. Books are catalogued according to AACR-2 and Classified by UDC scheme. There are about 627 internal members consisting scientists, technical, administrative staff, research scholars, project assistants and 20+ are external member (in external members most of are Govt. organization and Industries). The library remains open from 9.00 am to 6.30 pm. Five days a week from Monday to Friday.

OBJECTIVES

The following are the major objectives are to know the availability of different types of electronic resources in NPL, to study the use of different types of electronic resources, to study the purpose and utilization of the electronic resources, to find out the hindrances faced while accessing and using electronic resources, to observe the impact of electronic resources over the traditional one and to suggest suitable recommendations to improve the electronic resources and services for the benefit of organization

METHODOLOGY

A structured questionnaire was designed to elicit the opinion of the researchers. These were distributed personally as well as through email among the researchers and other library users and the required data was collected which was further supplemented by informal discussions with the faculty. Seven Hundred fifty questionnaires were distributed, out of which 579 questionnaire were received back with response rate being 77.2%. The analysis and interpretation of the data is presented in the subsequent sections.

EDUCATIONAL QUALIFICATION –WISE DISTRIBUTION OF RESPONDENTS

Table 1 indicates that, the majorities (32.06%) of the respondents are postgraduates with Ph D. in Science & Technology and 3.70% of the respondents are Bachelors degree holders in Engineering. At the same time 15.54% of the researchers are under graduates followed by 31.08% of the faculty members are others

(Qualification-wise distribution of respondents, TABLE-1)

Analysis and discussion :

Education	Total Responses	% age
M Sc, Ph D, Post. Doc.	188	32.06
BE/B.Tech	22	3.70
B Sc/3 yrs Diploma	34	5.87
Graduate (Other discipline)	180	31.08
Under Graduate	90	15.54
Others	65	11.22
Total	579	99.87 %

SEX WISE DISTRIBUTIONS OF FACULTY MEMBERS

TABLE-2 reveals that 86.70% of male members are working NPL where as, only 13.29% are female members in NPL. This is a glaring example of male-female imbalance in Research community at NPL.

(Sex wise distribution of faculty members, TABLE-2)

SEX	Total Responses	% age
Male	502	86.70
Female	77	13.29
Total	579	99.99

Publication experience of researchers in terns of publication productivity

Table-3 shows that only, 21.41% of the researchers have more than 25 research paper publication experiences and at the same time 20.72% of the researchers have 5-15 publication experience followed by 29.36% researchers having less than 5 publications, whereas 15.54% of respondents have 15-20 publications respectively.

(Publication experience of faculty members, TABLE-3)

Publications	Total Responses	%age
0-5	170	29.36
5-15	120	20.72
15-20	90	15.54
20-25	124	21.41
Above 25	75	12.95
Total	579	99.98

Frequency of using Electronic Resources by researchers

Table 4 shows that, out of 579 respondents, 23(3.97%) uses electronic resources once a week followed by 410 (70.81%) who are using daily whereas 6(1.03)% of faculty members use occasionally and only 0.69% never use electronic resources in the library.

(Frequency of using electronic resources by faculty members, TABLE-4)

Frequency	Total Responses	%age
Daily	410	70.81
2-3 times daily	133	22.97
Once in a week	23	3.97
Once in a Month	3	0.51
Occasionally	6	1.03
Never	4	0.69
Total	579	99.98

Purpose of using electronic resources:

Table-5: reveals that, majority 304(52.50%) of researchers are using electronic resources to gain current & general information followed by 90(15.54%) for research work and finding relevant information in their specialization. Whereas, 5.18% use to update subject knowledge & General knowledge and to gain current and general information and fewer percentage (5.00%) of researchers are using for specialized purpose.

(Purpose of using electronic resources, TABLE-5)

Opinion	Total Respondents	%age
Always	483	83.41
Some time	93	16.06
Never	3	0.51
Total	579	99.98

Use of Electronic resources by researchers Table-6

Table 6 shows the frequency of use electronic resources by the researchers Majority 310(53.54%) of the researchers are using internet followed by 30(5.18) ejournals using CD-Roms 52(8.98%). However OPAC and Online databases using very few.

(Use of Electronic resources by researchers, TABLE-6)

E-recourses used	Total Responses	%age
CD-Roms	52	8.98
Internet	310	53.54
OPAC	4	0.69
Online Database	180	31.08
E-journals	30	5.18
E-Books	3	0.51
Total	579	99.98

Learning to use electronic resources Table-7

Table 7 shows the most popular methods of acquiring the necessary skill to use electronic resources. 90 (15.54%) respondents take guidance from library staff. 280 (48.35%) respondents learn through trial and 115(19.86%) respondents learn with the help of computer department staff and 55(9.49%) respondents learn from external courses.

(Learning to use electronic resources, TABLE-7)

Use of e-recourses for learning	Total responses	%age
Trial and error	280	48.35
Guidance from library staff	90	15.54
Guidance from the Computer staff	115	19.86
External courses	55	9.49
Any other (pls specify)	39	6.73
Total	579	99.97

Adequacy of Information in Electronic Resources

Table-8 shows that 483(83.41%) of the respondents indicate that the information available in the electronic resources is always adequate followed by 93(16.06%) indicate some time adequate and 3(0.51%) of respondents felt that the information available in the electronic resources is never adequate

Hindrances	Total Responses	%age
Too much information is retrieved	352	60.79
Time consuming	28	4.83
Lack of IT knowledge to effectively utilize the services	44	7.59
Using electronic resources often distracts from doing work	70	12.08
Limited access to computers	85	14.68
Total	579	99.97

Hindrances in Accessing Electronic Resources Table-9

Table-9 shows the opinion regarding hindrances in accessing the electronic resources. Majority 352 (60.79%) stated that too much information is retrieved. 44 (7.59%) says lack of IT knowledge to effectively utilize as the barrier to use electronic resources followed by 70(712.08%) opined that time consuming 85(14.68%) felt that limited access to computers

(Hindrances in Accessing Electronic Resources Table-9)

Category	Total responses	%age
Access to a current up to date information	384	66.32
Easier access to information	109	18.82
Faster access to information	66	11.39
Access to a wide range of Information	20	3.45
Total	579	99.98

Impact of electronic resources on research and general. Table-10

Table-10: shows that, 384 (66.32%) respondents stated access to current up-to-date information is the benefit of using electronic resources. Similarly, 109(18.82%) expressed faster access to information is the advantage, as the benefit to develop the scientific career of the researchers in terms research and development.

(Impact of electronic resources on research and general, Table-10)

Problem	Total responses	%tage
Lack of hardware	170	29.36
Lack of software	110	18.99
Lack of training	56	9.67
Lack of information on Electronic resources	98	16.92
Lack of operating funds	85	14.68
Lack of timings	60	10.36
Total	579	99.98

Problems faced while using Electronic Resources:

Table-11 shows that, 60(10.36%) of respondents have faced problem of lack of timing followed by 56 (9.67%) of faculty members indicating lack of training as the main problem while using electronic resources. 170(29.36%) and 110(18.99%) of the researchers are troubled with lack of hardware and software problems respectively.

(Problems faced while using electronic resources. TABLE: 11)

Success rate	Total responses	%age
100%	280	48.35
75-99%	110	18.99
50-74%	82	14.16
25-49%	56	9.67
Less than 25%	51	8.80
Total	579	99.97

Success Rate of finding required Information in Electronic Resources :

The respondents were requested to indicate the success rate in finding required information using electronic resources. Table 12 shows that, 110(18.99%) of respondents were succeeded in the range of 75-99, followed by 82 (14.16%) respondents who succeeded in the range of 50-74 and least percentage 51(8.80%) of the researchers were succeeded in the range of less than 25%.

(Success rate, TABLE-12)

IMPACT OF DIGITAL ENVIRONMENT

1. It is clear that the new online medium is not being exploited since many online journals are simply electronic editions of paper journals.
2. Production of an issue of a journal is accomplished much quickly since communications between the editorial board, reviews of submissions and exchange if information can proceed much more quickly than through the channels typically used for print journals.
3. Personal computers and the Internet are advantages in electronic publishing with a personal computer and the Internet, it is now possible for even one person to take full responsibility for the output of a document up to and production of final copy. Although electronic journals can be produced more quickly than their print counterparts, the editorial work to support a journal published exclusively online can be substantial while the time lag for many processes associated with print publication has been removed, a good deal of time may be spent attracting potential contributors and readers reviewing and refereeing articles, producing and distributing issues and maintaining an online archives.
4. Electronic journals can reach a wide audience quickly, information can be distributed almost as soon as it is made available and stored once it is entered online
5. Electronic journals are user friendly and more functional than a print journal, and copies of article from an electronic journal should be comparable in quality to a photocopy made from print journal

FINDINGS OF THE STUDY

- Only 21.41% of the researchers have more than 25 publications
- Majority of respondents 410 (70.81%) are using electronic resources daily and 15.54% of researchers are using electronic resources for finding relevant information in their area of specialization and for research work
- Majority 90(15.54%) of the respondents use Internet and 52 persons (8.98%) uses CD-ROMs. While using 98 (13.88%) respondents are taking Guidance from Library Staff regarding the use electronic resources, 30(5.18%) responders are ejournals users.
- Majority of the respondents indicate that, the information available in the electronic resources is always adequate.
- Regarding the hindrances of accessing the electronic resources, majority of respondents 352(60.79%) stated that lots of information can be retrieved. 44(7.59%) responders says lack of IT knowledge to effectively utilize the services is the main barrier to use electronic resources.
- Majority of respondents 384(66.32%) stated access to a current up to date information as a benefit of using electronic resources
- Less respondents 60(10.36%) have faced problem of lack of timing and 56(9.67%) researchers indicate lack of training as the main problem while using electronic resources and
- Regarding the success rate of finding the required information in electronic resources, 280(48.35%) of researchers have rated that they have succeeded in the range of 100
- Electronic resources helps to increase the Research & Developments in terms of patents and publication productivity

SUGGESTIONS

The Library/authority must conduct training programmes for the researchers regarding how to use the electronic resources effectively.. 2) Awareness should be created to use e-journals and e-books to obtain current information.3)More computer/terminals should be installed in the library for the benefit of the researchers and library users. 4)More funds should be given to acquire electronic resources. Print journal must be subscribed along with electronic journals

Library/authority must think on more electronic databases of journal and books

CONCLUSION

The present study seeks to examine the impact of digital environment on researchers and usage of e-resources by the researchers in NPL (India). The survey reveals that, most of the researchers are aware of electronic resources. Information environment is very complex. In order to retrieve desired information of the users, the information intermediary has to adopt inter alia certain behavioral strategies to make the system effective. Survey is one such approach that identifies the basic requirements that the researchers and users needs. The electronic resources have played a vital role in all fields of human life. These have rapidly changed the way of seeking and disseminating information. It is clear from the study that, the researchers of NPL (INDIA) have developed their research career. The speed of availability and the ease of accessibility of information make the faculty members to use electronic resources more frequently. This study helps the librarian to know the importance of electronic resources in academic environment.

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