



Information Seeking Behaviour of Engineers at Research Designs and Standards Organization (RDSO) Lucknow

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ABSTRACT

The paper is an outcome of the research study conducted by the authors on Information Seeking Behaviour of Staff member, particularly Engineers working in different Department of RDSO, Lucknow. Data has been collected through the structured questionnaire and personal interview with the respondent. The collected data analyzed and interpretation have made. Study discusses the findings of various strategies and procedures adopted by the Engineers in meeting their information requirements. The Engineers were asked to rank the information sources in on the basis of I, II, and III in the order of priority. The survey result shows that Engineers have expressed great dependence on Internet in meeting their information requirements with the help of institutional library/information centre and personal efforts.

KEYWORDS : Internet, Information Seeking Behaviour, R.D.S.O, Engineers.

1.1. Introduction

Information is a key element for any kind of research and development the fundamental and an important human need, as important as the need for food or shelter. Throughout history, seeking information has been associated with every task and activity. Information seeking is a natural & necessary mechanism of human existence. Information seeking behaviour is the purposive seeking for information as a consequence of a need to satisfy some goal.

In the current information age, seeking information is still a fundamental function and will continue to be so. This age of information explosion depends on information in all formats, their searching, collecting, organizing, storing, retrieving, and using are the main concerns. Information seeking behavior is expressed in various forms, from reading printed material to research and experimentation. The increase in information available on the web has affected information seeking behavior. Presently the professionals are getting their desired information in a very short time with the help of using ICTs.

The Internet is not just about finding information, it also encompasses publishing, broadcasting, establishing networks and interactive services. It has expanded from an information resource to that of an effective marketing tool for business transactions. It has revolutionized the information system by greatly expanding rapid and instantly.

Internet has become a vital enabling technology. It offers huge opportunity through development of information communication technology. The advent of the Internet plays a vital role in changing the information seeking behaviour of every pupil. The Internet is a global network of computers. Every computer that is connected to the Internet is considered a part of that network.

Information seeking behaviour is an expansive phrase, which involves a set of events that a human being takes to utter information needs, hunt for information, appraise and select information, and lastly uses this information to gratify their information needs. Various factors may conclude the information seeking behaviour of an individual or a group of individuals.

1.2. Scope of the Study

The present study focuses on the information seeking behaviour of the Engineers of the Research Designs and Standards Organization (RDSO), Lucknow working under different directorate.

1.3. Origin of RDSO

Railways were introduced in India in 1853 and as their development progressed through to the twentieth century, several company managed systems grew up. To enforce standardization and co-ordination amongst various railway systems, the Indian Railway Conference Association (IRCA) was set up in 1903, followed by the Central Standards Office (CSO) in 1930, for preparation of designs, standards and specifications. However, till independence, most of the designs and manufacture of railway equipments was entrusted to foreign consultants. With Independence and the resultant phenomenal increase in country's industrial and economic activity, which increased the demand

of rail transportation - a new organization called Railway Testing and Research Centre (RTRC) was setup in 1952 at Lucknow, for testing and conducting applied research for development of railway rolling stock, permanent way etc.

Central Standards Office (CSO) and the Railway Testing and Research Centre (RTRC) were integrated into a single unit named Research Designs and Standards Organization (RDSO) in 1957, under Ministry of Railways at Lucknow.

The status of RDSO has been changed from an 'Attached Office' to 'Zonal Railway' since 01.01.2003. Organisation RDSO is headed by a Director General. The Director General is assisted by Additional Director General, Sr. Executive Directors and Executive Directors, heading different directorates. RDSO has various directorates for smooth functioning: Bridges & Structures, CAMTECH, Carriage, EMU & Power Supply, Electric Loco, Energy Management, Energy development, Finance and accounts, Geotechnical Engineering, Library & Publications, Medical, Metallurgical & Chemical, Motive Power, Personnel Directorate, Psycho-Technical, Quality Assurance, Research, Signal Stores Directorate, Telecommunication, Testing, Track Design, Track Machines & Monitoring, Traction Installation, Traffic, Wagon, Design and Works.

1.4. Objective of study

Following were the objectives of the study:

- To investigate the methods and sources used by the engineers to acquire their required information.
- To study the purpose of their information-seeking.
- To find out the importance of internet in getting various information resources for their profession.
- To find out the problems faced by the Engineers in seeking information from the Internet.

1.5. Data Analysis and Interpretation

The collected data were analyzed and interpretations were made on the basis of analysis. The RDSO have strengthen with total 2481 (2268 M & 213 F) staff members. Out of which there are 967 engineers working under different directorate.

Distribution of Questionnaire

A structured questionnaire was distributed randomly between the 330 engineers, out of which 165 (approx 71%) filled questionnaires were received. Table 1.5.1. and Fig. 1.5.1 shows the same.

Total engineer	Questionnaire Distributed	Questionnaire Received
367	330	225

Table 1.5.1. Shows the Distribution of Questionnaire

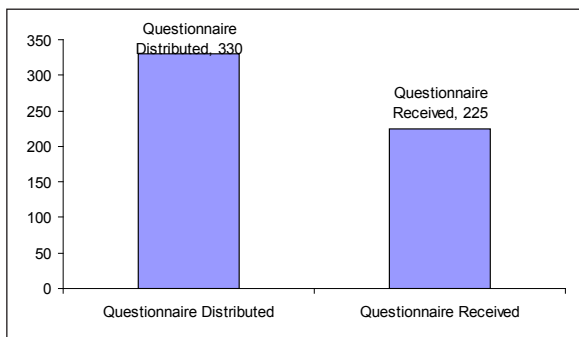


Fig. 1.5.1. Distribution of questionnaire

Purpose/motive of information need

The question was asked about the Purpose/motive of information need used by the Engineers for seeking information. Fig. 1.5.2 shows that 43 (19% approx) of the Engineer's purpose/motive of information need is to pursue own work/research, 15 (9% approx) purpose is visibility among peer, 13(6% approx) purpose is Edge over other the

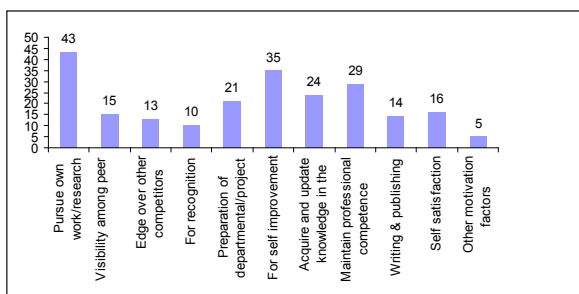


Fig. 1.5.2. Purpose/motive of information need

Competitors, 10(4.4% approx) purpose is for their recognition, 21(10% approx) purpose is for preparation of departmental/project review, 35(16% approx) purpose is for self improvement, 24(11% approx) purpose is for acquiring and updating knowledge in the field, 29(13% approx) purpose is maintaining professional competence, 14(6% approx) purpose is for writing & publishing, 16(7% approx) purpose is for self satisfaction and 5(2% approx) purpose is for other motivation factors.

Sources of information

The question was asked about the Sources of information used by the Engineers for seeking information. There are two types of information sources, in case of Formal Sources, the table shows that 14 (6% approx) respondent uses Books/Monographs as formal sources, 35 (16% approx) respondent uses Scientific-Technical Journals/Periodicals as formal sources, 28 (12% approx) respondent uses Reference sources as formal sources, 21 (9% approx) respondent uses Patents/Reports/

S.N.	Formal sources	No. of Respondent	Informal Sources	No. of Respondent
1.	Books/Monographs	14 6%	Email	25 11%
2.	Scientific-Technical Journals/Periodicals	35 16%	list-server, Discussion forum	26 12%
3.	Reference sources	28 12%	Face-to-face Discussions	15 7%
4.	Patents/Reports/Standard/Specifications	21 9%	Conversations with colleagues	26 12%
5.	Data Sheets	15 7%	Meetings with professional	21 9%
6.	Conference/workshop/Seminars Proceedings	14 6%	Previous Knowledge	25 11%

7.	Online-journals/ database/ archive	33 15%	Private Correspondences	29 13%
8.	Internet/Intranet sources as Audio/Video CD-ROM/DVD	17 8%	Discussion with librarian or reference staff of you library	18 8%
9.	Library Catalogue (OPAC)	16 7%	Consult a knowledgeable person in the field/Supervisor	25 11%
10.	Review articles/Theses	15 7%	Seminar/Conferences/Workshops	15 7%
11.	Information data from Catalogue, Virtual Observatory as VO-India etc	17 8%		

Table shows the source of information used by he Engineers

Standard/Specifications as formal sources, 15 (7% approx) respondent uses Data Sheets as formal sources, 14 (6% approx) respondent uses Conference/workshop/Seminars Proceedings as formal sources, 33 (15% approx) respondent uses Online-journals/ database/ archive etc as formal sources, 17 (8% approx) respondent uses Internet/Intranet sources (Audio/Video CD-ROM/DVD) as formal sources, 16 (7% approx) respondent uses Library Catalogue (OPAC) as formal sources, 15 (7% approx) respondent uses Review articles/Theses as formal sources, 17 (8% approx) respondent uses Information data from Catalogue, Virtual Observatory as VO- India etc as formal sources.

In case of Informal Sources, the table shows that 25 (11% approx) respondent uses Email as their informal sources, 26 (12% approx) respondent uses list-server, Discussion forum as their informal sources, 15 (7% approx) respondent uses Face-to-face Discussions as their informal sources, 26 (12% approx) respondent uses Conversations with colleagues as their informal sources, 21 (9% approx) respondent uses Meetings with professional as their informal sources, 25 (11% approx) respondent uses Previous Knowledge as their informal sources, 29 (13% approx) respondent uses Private Correspondences as their informal sources, 18 (8% approx) respondent uses Discussion with librarian or reference staff of you library as their informal sources, 25 (11% approx) respondent uses Consult a knowledgeable person in the field/ Supervisor as their informal sources and 15 (7% approx) respondent uses Seminar/Conferences/ Workshops as their informal sources.

Keep abreast of current developments in profession

The question was asked about the How you keep abreast of current developments in your profession the table shows that 34 (15% approx) respondents keep abreast through library services as CAS & SDI, 37 (16% approx) respondent keep abreast through scanning of

S.N.	Choice	No. of Respondent
1.	From library services as CAS & SDI	34 15%
2.	Scanning of current issues or print/Online journals	37 16%
3.	Scanning recent issues of abstracting tools	30 13%
4.	Personal communication	24 11%
5.	Attendances at conferences/Seminar	19 8%
6.	List Server/E-archive/Databases	22 10%
7.	Internet/Internet based services	28 12%
8.	E-mail alert	25 11%
9.	Other (s) if any, please specify	06 3%

Current issues or Print/Online journals, 30 (13% approx) respondents keep abreast through scanning recent issues of abstracting tools, 24 (11% approx) respondents keep abreast through Personal communication, 19 (8% approx) respondents keep abreast through Attendances at conferences/Seminar, 22 (10% approx) respondents keep abreast through List Server/E-archive/Databases, 28 (12% approx) respondents keep abreast through Internet/Internet based services, 25 (11% approx) respondents keep abreast through E-mail alert and 06 (3% approx) respondents keep abreast through other sources to keep abreast.

Time spend per week in information-gathering activities

The question was asked about the time spend per week in information-gathering activities 50% (approx) of engineers gather information spending <4hr in a week, 33% (approx) spent <8hr in a week, 14% of the engineer spent <12hr in a week and 12% (approx) were spent more than >12 hr in a week for reading e-mail alerts/discussion forum.

S.N.	Information-gathering activity	Time span (PI Tick)			
		0-4 Hr.	4-8 Hr.	8-12 Hr.	>12 Hr.
1.	Reading e-mail alerts/ Discussion forum	94	74	31	26
2.	Scanning journals articles Printed/Online	81	69	42	33
3.	Conferring with co-workers	149	41	23	12
4.	Experts service	178	28	12	7
5.	Library Services	180	29	11	5
6.	Photocopy	220	3	1	1
7.	Any other (PI specify)	91	75	30	29

For gathering information from scanning journals articles printed/online 36% of engineers spent <4hr, 31% of engineers spent <8hr, 19% (approx) of engineers spent <12hr and 15% (approx) of engineers spent >12hr.

For gathering information from Conferring with co-workers 66% (approx) of engineers spent <4hr, 31% (approx) of engineers spent <8hr, 19% (approx) of engineers spent <12hr and 15% (approx) of engineers spent >12hr.

For gathering information from expert service 79% (approx) of engineers spent <4hr, 13% (approx) of engineers spent <8hr, 5% (approx) of engineers spent <12hr and 3% (approx) of engineers spent >12hr.

For gathering information from library services 80% of engineers spent <4hr, 13% (approx) of engineers spent <8hr, 5% (approx) of engineers spent <12hr and 1% (approx) of engineers spent >12hr.

For gathering information from photocopy services 97% (approx) of engineers spent <4hr, 1% (approx) of engineers spent <8hr, 1% (approx) of engineers spent <12hr and 1% (approx) of engineers spent >12hr.

For gathering information from other services 40% of engineers spent <4hr, 33% (approx) of engineers spent <8hr, 13% (approx) of engineers spent <12hr and 13% (approx) of engineers spent >12hr.

Appropriate information-seeking habits relevant to work

The question was asked about the appropriate information-seeking habits which you feel relevant, 9% (approx) of engineers prefer conversing with experts, 11% (approx) of engineers prefer conversing with co-workers, 12% (approx) of engineers prefer E-mailing

S.N.	choice	Number of Respondent
1.	Conversing with experts	21
2.	Conversing with co-workers	24
3.	E-mailing co-workers or other experts	26
4.	Discussion Forum/List-server	27
5.	Reading e-mail alerts	27
6.	Scanning journal titles or citations	13
7.	Reading articles/books	23
8.	Attending conferences/colloquia/ workshops	10
9.	Searching electronic databases	9
10.	Reading electronic journals	20
11.	Patents/Reports/Standard/ Specifications	11
12.	Library Catalogue (OPAC)	15
13.	Any other (PI specify)	3

co-workers or other Experts, 12% (approx) of engineers prefer Discussion Forum/List-server, 12% (approx) of prefer engineers Reading e-mail alerts, 6% (approx) of engineers prefer Scanning journal titles or citations, 10% (approx) of engineers prefer Reading articles/books, 4% (approx) of engineers prefer Attending conferences/colloquia/ workshops, 4% (approx) of engineers prefer Searching electronic databases, 9% (approx) of engineers prefer Reading electronic journals, 5% (approx) of engineers prefer Patents/ Reports/Standard/Specifications, 7% (approx) of engineers prefer Library Catalogue (OPAC) and 5% (approx) of engineers prefer other habits for the same.

Sufficiency of amount of time spending on information gathering

The question was asked about the sufficiency of time spend on information gathering, 56% (approx) of respondent reply that time spend is not enough time to keep up with everything, 23% (approx) of respondent reply that they feel no trouble in managing time in regards to information-gathering and rest 21% (approx) of respondent reply that they feel some trouble in managing time in regards to information-gathering.

S.N.	Trouble in managing time	No. of respondent
1.	Not enough time to keep up with everything	125
2.	Feel no trouble in managing time in regards to information-gathering	51
3.	Feel some trouble in managing time in regards to information-gathering	49

Use of the Internet

The question was asked about the use of internet and 100% respondent gave the positive response.

Training on the use of the Internet

The question was asked about the training on the use of internet, total 74 respondents (33% approx) says that they have not any training on the internet and rest 151 respondents (67% approx) says that have some training on the use of internet.

Measures which would encourage the use of Internet

The question was asked about the measures which would encourage the use of internet, approx 89% respondent says that Internet access from the place of work would encourage the use of internet, approx 78% respondent says that Upgraded computer equipment would encourage the use of internet, approx 63% respondent says that Training on how to use the Internet would encourage the use of internet, approx 48% respondent says that additional phone line/wireless for Internet access would encourage the use of internet approx 60% respondent says that the greater familiarity with resources available on the Internet would encourage the use of internet, approx 62% respondent says that the Comfortable environment would encourage the use of internet and approx 23% respondent against the other option.

Internet self-efficacy

The question was asked about the self-efficacy, approx 72% respondent says that they feel confident in using the Internet to find needed information, approx 63% respondent says that they feel confident in using the Internet to solve practical problems, approx 59% respondent says that they feel confident in using the Internet to communicate with people, approx 62% respondent says that they feel confident in using the Internet to do what I want it to do, approx 45% respondent says that they feel confident in using network equipment, approx 55% respondent says that they feel confident to complete a job or task using the Internet, approx 65% respondent says that they feel confident to search the desired information, approx 58% respondent says that they feel confident to retrieve the internet based resources and approx 68% respondent says that they feel confident to update the recent development in the field.

Table shows the self-efficacy

S.N.	choice	YES	NO
1	Feel confident in using the Internet to find needed information	163	62
2	Feel confident in using the Internet to solve practical problems	141	84
3	Feel confident in using the Internet to communicate with people	132	93
4	Feel confident in using the Internet to do what I want it to do	139	86
5	Feel confident in using network equipment	102	123
6	Feel confident to complete a job or task using the Internet	123	102
7	Feel confident to search the desired information	147	78
8	Feel confident to retrieve the internet based resources	131	94
9	Feel confident to update the recent development in the field	154	71

Perceived usefulness

The question was asked about the perceived usefulness approx 80% respondent says that the Internet would enable me to accomplish tasks more quickly, approx 75% respondent says that Internet would improve my job performance, approx 81% respondent says that Internet would improve my productivity, approx 74% respondent says that Internet would enhance my effectiveness on the job, approx 63% respondent says that Internet would make it easier to do things, approx 87% respondent says that Internet would keep informed with the recent update in my profession and approx 87% respondent says that The Internet useful in my life.

Table shows the perceived usefulness

S.N.	USEFULNESS	YES	NO
1	The Internet would enable me to accomplish tasks more quickly	179	46
2	Internet would improve my job performance	168	57
3	Internet would improve my productivity	181	44
4	Internet would enhance my effectiveness on the job	167	58
5	Internet would make it easier to do things	141	84
6	Internet would keep informed with the recent update in my profession	196	29
7	The Internet useful in my life	201	24

Features of the Internet you use in work

The question was asked about the features of the Internet you use in work, approx 94% of respondent use the E-mail/chatting feature of Internet, approx 96% of respondent use the World-Wide Web searches feature of Internet, approx 74% of respondent use the feature

S.N.	Feature of Internet	YES	NO
1	E-mail /chatting	212	13
2	World-Wide Web searches	217	8
3	Discussion groups	167	58
4	Newsgroups	129	96
5	On line journal	191	34
6	Abstracting/indexing periodical/journal	157	68
7	Searching online databases	113	112
8	Keep update with recent development in your field	201	24
9	Any other (Pl specify)	165	60

Table shows feature of Internet use in work

Discussion groups in work, approx 57% of respondent use the News-groups feature of Internet, approx 85% of respondent use the On line journal feature of Internet, approx 70% of respondent use the Abstracting/indexing periodical/journal feature of Internet, approx 50% of respondent use the Searching online databases feature of Internet, approx 89% of respondent use the update with recent development feature of Internet and approx 73% of respondent use the other feature of Internet.

Internet need to be managed or controlled

The question was asked to the respondent about whether the internet need to be managed or controlled, approx 89% of the respondent says that internet must be controlled.

Usual finding of information looking for

The question was asked to the respondent whether they usually find what they looking for, about approx 39% respondent always get the information looking on the Internet, approx 27% respondent usually get the information looking on the Internet, approx 21% respondent sometimes get the information looking on the Internet, approx 9% respondent occasionally get the information looking on the Internet while approx 4% respondent never get the information looking on the Internet.

Problems faced during the access of internet

The question was asked to the respondent what problem they face at the time of Internet access, approx 22% respondent faced slow speed of Internet, approx 11% respondent faced not enough content related to the work on the Internet, approx 10% respondent faced confusing information on the Internet, approx 11% respondent faced very huge related information on the Internet, approx 9% respondent Unaware of search strategies, approx 4% respondent faced connection difficulties, approx 5% respondent faced that computer is not advanced enough, approx 7% respondent cannot find the needed information faced, approx 2% respondent faced too many viruses, approx 4% respondent too busy to go online, approx 5% respondent not interested in the content, approx 5% respondent says that Internet is too expensive and approx 5% respondent says other problems.

Desirable attributes needed

The question was asked to the respondent what attributes they desire with the Internet, approx 25% respondent says that Internet access should fast and speedy, approx 13%

respondent says that the website graphic should be professional, approx 12% respondent says that the content should readable in full text in any browser, approx 15% respondent says that training by the expert should be there approx 9% respondent says that the training should also on the search strategies, approx 5% respondent says that website carry many important hyperlink, approx 5% respondent says that content should be printable in a more traditional format, approx 9% respondent says that the computer system should be with advance feature, approx 9% respondent says that the cost for Internet access should very less and rest approx 2% respondent opted other attributes.

Table shows the desired attributes

S.N.	Attributes desired	Number	%
1	Fast/speedy access	57	25
2	Professional graphic design of the Website	30	13
3	Content readable in full text in any browser	26	12
4	Training by the expert	34	15
5	Training on the search strategies	19	9
6	Many hyperlinks	13	5
7	Content printable in a more traditional format	12	5
8	Computer system with advance feature	19	9
9	Less cost for access	11	5
10	Any other	4	2

Conclusion

On the basis of the researcher should said that the main Purpose/motive of information need of engineers are pursue own work/research, self-improvement, maintain professional competence and acquire and update knowledge in the field.

The Sources of information used by the Engineers for seeking information are both formal and informal mainly Scientific-Technical Journals/Periodicals, Online-journals/ database/archive, Patents/Reports/Standard/Specifications, Reference sources, Private Correspondences, Conversations with colleagues, List-server, Discussion forum and E-mail etc.

The engineer's main information gathering activities are Reading e-mail alerts, Discussion Forum/List-server, E-mailing co-workers or other experts, conversing with co-workers, conversing with experts, reading articles/books and reading electronic journals.

The engineers spend sufficient time on information gathering activities but the time spend is not enough time to keep up with everything by most of them, some of them feel no trouble in managing time in regards to information-gathering and some of them feel some trouble in managing time.

Most of the engineers need the special training on Internet access to save their precious time. Most of the engineers need that the Internet should be managed or controlled huge and inappropriate information makes access useless and simply wastages of time.

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