

# USE OF SEARCH ENGINES FOR RETRIEVAL OF INFORMATION IN NIT KURUKSHETRA

**Minakshi**

Assistant Librarian

Maharaja Agrasen University

Himachal Pradesh, India

[gill.meenakshi5@gmail.com](mailto:gill.meenakshi5@gmail.com)

**Abstract** Internet is a wondrous creation of the human being. It is a very big source of information which satisfies the needs of information users. The entire world is rapidly becoming obsessed with it. The information may be regarding stocks, sports statistics and any other kind but every kind of information is just one click far away from its users. Different people use it for different purposes, investors use it to know the information regarding share market, sports' fans use it to know sports information and some people use it for entertainment and for other purposes, most importantly, it provides instant access to specific information. The study reported that Majority of the users use INTERNET daily. 1-2 hours and 2-3 hrs. are spent on search engine per sitting by students and faculty members respectively. Maximum number of users are using internet for 1-5 years. All the members are aware with search engines. Main purpose of browsing Search Engines is the education and research work. A good number of respondent's sometime use paid databases i.e. EMERALD, SPRINGER, and SCIENCE DIRECT etc. Maximum number of student respondents use just one search engine on regular basis whereas two or three search engines are used by majority of faculty members. Google is used by all most 80% respondents and yahoo get the second rank however rest of the search engines viz. Ask, Bing and exalead got the negligible users.

**Keywords:** Internet, Search Engine

## 1.0 Introduction

The Internet was the result of great vision of some people in the early 1960s who identified the potential value in allowing computers to share information on research and development. J.C.R. Licklider of MIT, first proposed a global network of computers in 1962, and moved over to the Defense Advanced Research Projects Agency (DARPA) in late 1962 to head the work to develop it. Leonard Kleinrock also developed the theory of packet switching, Packet switched networks such as ARPANET, Mark I at NPL in UK, CYCLADES, Merit Network, Tymnet, and Telenet, were developed in the late 1960s and early 1970s using a variety of protocols. Lawrence Roberts connected a Massachusetts computer with a California computer in 1965 over dial-up telephone lines. It showed the feasibility of wide area networking, but also showed that the telephone line's circuit switching was inadequate. Kleinrock's packet switching theory was confirmed. Roberts moved over to DARPA in 1966 and developed his plan for ARPANET. IN 1982 the Internet Protocol Suite (TCP/IP) was standardized and the concept of a world-wide network of fully interconnected TCP/IP networks called the Internet was introduced. Wikipedia- Since the mid-1990s the Internet has had a drastic impact on culture and commerce, including the rise of near instant communication by electronic mail, instant messaging, Voice over Internet Protocol (VoIP) "phone calls", two-way interactive video calls, and the World Wide Web with its discussion forums, blogs, social networking, and online shopping sites.

The Internet provides a mechanism for students, teachers and researchers to search for information throughout the world. When using a library, the books, journals, and other resources have been evaluated by a variety of mechanism established by professional librarians. The indexes or databases used to locate information sources are produced by professional or scholarly organizations that select peer-reviewed articles to be included in their publications. In traditional libraries every thin from the index to the actual information is evaluated by subject area scholars and professional librarians. However, when one used the internet, none of the evaluation criteria for traditional library sources generally applies. Information on the internet is often not evaluated prior to its

publication. The ease of publishing on the Web results in a wide variation in quality, ranging from the scholarly to the dubious, Kirk, (1996). The internet epitomizes the concept of caveat lector: Let the reader beware. Free information sources on the internet are increasing at an incredible rate. Oliver et.al., (1999)-The internet is a global structure, which makes it unlikely that an individual or a nation could significantly change the chaotic state of flux that characterizes the internet.

- **Geographic Distribution-** A key attribute of the Internet is that once you have connected to any part of it, you can communicate with all of it. All of the Internet's technologies -- *web, newsgroups, email, mailing lists, IRC, MUD's* -- enable geographically distributed groups of people to communicate who otherwise couldn't do so.
- **Near Light Speed-**Digital information such as *Internet packets* travel at 2/3 of the speed of light on copper wire and on fiber optic cables. Since light speed is about 300,000 kilometers a second, this means digital communications travel at about 200,000 kilometers a second, slowing down only because copper and fiber optic materials are about one-third thicker than a vacuum.
- **Universal Access-**The Internet provides *universal access*, giving the same powerful capabilities to everyone who has access to the network no matter where they are.
- **Internet Growth Rates-** The growth rate of the Internet exceeds that of any previous technology. Measured by users and bandwidth, Internet has been growing at a rapid rate since its conception, on a curve geometric and sometimes exponential.
- **The Digital Advantage-**The Internet, like all computer systems, is based on digital data, so that information never changes or becomes distorted over time or in transmission between sites. This is the key feature that makes it possible to construct the very complex software systems that run the Internet, so that a website doesn't age and become fuzzy or garbled over time, and the characters in an *email* don't get transposed or mixed up when they are sent over long distances.
- **Freedom of Speech-**Information wants to be free, and the *Internet* fosters freedom of speech on a global scale.

### Key Web Features

- Ease of Use
- Universal Access
- Search Capabilities

### Key Usenet Newsgroups Features

- Group Communications
- Common Space

### Key Email Features

- Email Is A Push Technology
- Email Waits For You
- Email Is One-To-Many
- Email Is Almost Free

### Key Mailing List Features

- One-to-many communication.

### 1.1 Institute Profile

National Institute of Technology Kurukshetra, Haryana is a premier Technical Institute of the region. The institute started working as Regional Engineering College, Kurukshetra in 1963. Like other Regional Engineering Colleges of India this institution too, had been a joint enterprise of the State and Central Governments. This Institute was conferred upon status of Deemed University on June 26, 2002. Since then it has been renamed as National Institute of Technology, Kurukshetra.

### **1.2 NIT Library**

The Library initially set up in 1965 has grown in size, collection and services. Presently NIT Kurukshetra has a very spacious Library with good collection of documents which includes text and reference books, video cassettes, CD-ROMs and large number of Print & Online Journals and e-books. With its growing resources, space & services, the Library caters to the need of faculty, research scholars and students.

The Library has a reading **capacity for 450 readers** and sufficient space for stacking new documents, digital library and Audio Visual Centre. The **total area of the library at present is 36711sq-ft.**

### **1.3 Library Collection**

(as on 31.05.2013)

Library Books	:	59827
Book Bank	:	95288
Back Sets	:	7096
Standards	:	9979
VHS/CDs/DVDs	:	5284
e-Books	:	10921
Thesis	:	2782

### **1.4 Meaning of Search Engine**

Search engine is very important tool or website that collects and together the contents form all over the internet. Those who wish to get the information from internet, they have to just put the query in search bar and the engine provides links to the content that matches the query.

### **1.5 Definitions**

**Alan Poulter** defined ‘World Wide Web search engine’ is defined as a retrieval service, consisting of a database (or databases) describing mainly resources available on the World Wide Web (WWW), search software and a user interface also available via WWW.

**Eriam Turban** defined “Search engines are programs that return a list of web sites or pages (designed by URLs) that match selected criteria. To use one of the publicly available search sites the user navigates to the search engines sites and type son the subject of the search”

### **www.britenic.com**

search engine, computer program to find answers to queries in a collection of information, which might be a library catalog or a database but is most commonly the World Wide Web. A Web search engine produces a list of “pages”—computer files listed on the Web—that contain the terms in a query. Most search engines allow the user to join terms with *and*, *or*, and *not* to refine queries. They may also search specifically for images, videos, or news articles or for names of Web sites.

### **1.6 How Do Search Engines Work?**

Mostly popular search engines are crawler based search engines while some may be based on human compiled directories. Since their content is mainly links to other sites, the thing for them to do is to make their search engine bring up the most relevant sites to the search query, and to display the best of these results first.

To accomplish this, people use algorithms. When a search query is submitted at a search engine, sites are determined to be relevant or not relevant to the search query according to these algorithms, and then ranked in the order it calculates from these algorithms to be the best matches first.

Here more detailed explanation on how Search Engines work is important. Crawler based search engines are primarily composed of three parts.

- **Spidering**
- **Indexing**
- **Engine Program**

### **1.7 Effective Use of Search Engine**

Effective searching needs to choose right key words or phrase because of huge information available on the web out of which some may be useful and some may be useless so it is very important to concentrate on right key words or phrases. For effective searching there are many tools which help to improve search and of course procedure vary from one search engine to another as it depends upon the version of search engine that it is simple or advanced version. If one has basic understanding of the tools, then any search engine may be used for searching.

#### **Popular Search Engines**

##### **Google Search Engine**

The domain name for Google was registered on September 15, 1997, and the company was incorporated on September 4, 1998. It was based in a friend's (Susan Wojcicki) garage in Menlo Park, California. Craig Silverstein, a fellow PhD student at Stanford, was hired as the first employee.

Google is the most popular search engine not only in India but also throughout the world. It provides advance search which caters the needs of the users.

##### **Yahoo Search Engine**

In January 1994, Jerry Yang and David Filo students of Standford University created a web site named "David and Jerry's Guide to the World Wide Web". Initially it was directory of other web sites, organized in a hierarchy, as opposed to a searchable index of pages. In April 1994, it was renamed "Yahoo!". The yahoo.com domain was created on January 18, 1995

##### **Ask Search Engine**

Ask search engine known as Ask Jeeves in the UK was founded in 1996 by Garrett Gruener and David Warthen in Berkeley, California. The original software was implemented by Gary Chevsky from his own design. In late 2010, facing insurmountable competition from Google, the company outsourced its web search technology to an unspecified third party and returned to its roots as a question and answer site. The original idea behind Ask Jeeves was to allow users to get answers to questions posed in everyday, natural language, as well as traditional keyword searching. The current Ask.com still supports this, with added support for math, dictionary, and conversion questions.

##### **Exalead Search Engine**

Exalead search engine was launched in 2000, it is a global software provider in the enterprise and Web search markets and has more than 100 million unique users a month use Exalead's technology for search.

Today, Exalead is reshaping the digital content landscape with a platform that uses advanced semantic technologies to bring structure, meaning and accessibility to previously unused or under-utilized data in the disparate, heterogeneous enterprise information cloud. This revolutionary technology and others make Exalead one of the most important companies to watch in the fields of digital content search, discovery, management, security, and storage.

### **2.0 Review of Related Literature**

A literature review is a critical and in depth evaluation of previous research. It is a summary and synopsis of a particular area of research, allowing anybody reading the paper to establish why you are pursuing this particular research program. According to Best and Khan, since effective research is based upon past knowledge, review of related literature helps to eliminate the duplication of what has been done and provide useful hypothesis and helpful suggestions for significant investigation.

Therefore, this chapter contains review of relevant literature, which attempts to identify, discover and synthesize material concerning the various aspects of use of search engines among users. Search engines are main important tool on Internet which is facilitate by World Wide Web.

**Lyons, Ken (2010)** conducted a survey on “Search Marketing Spend Trend Survey”. In this survey he found that 68% of respondents say they will spend more on search engine marketing activities in 2010, The reported increase in spend for SEO vs PPC is roughly the same (with a slight edge to SEO); however, 68% of respondents feel that SEO is more essential their company's online growth. Local search continues to gain in popularity, with more than half of respondents saying they'll spend more on local focus and geo-targeting.

Sherman, Chris (2010) conducted a survey on “The State Of Search Engine Marketing 2010”. He concluded that the North American search engine marketing industry will grow 14% this year from \$14.6 billion in 2009 to \$16.6 billion by the end of 2010. Another unsurprising finding: Google dominates. 97% of companies responding to the survey said they advertise on Google, with 71% paying to advertise on the Google search network, and 56% distributing ads via the Google content network. 56% of advertisers and 62% of agencies said that Google keywords have become more expensive over the last year, but these increases appear to be mostly limited to Google, with only 32% reporting higher costs on Yahoo and 29% on Bing.

**Maxymuk (2009)** conducted a study at Rutgers University Paul Robenson Library on six new approaches to examine some of the leading competitors to google in searching the WWW, those were alternative to google; Bing, Wolfram Alpha, Topsy, Scoopler, Scribd, and Data Gov. Findings showed that all but Bing among the six search tools has a narrower and more defined approach than google I.e. A sidebar on the eft of the screen lists related searches that user might want to try. Second, a mouse over spot to the right of each item in the result opens a window that provides a closer glimpse of the content on that page and also a list of links on that page.

**Parameshwar and Patil (2009)** revealed that Research and education are the top reasons for accessing the Internet. In this study on use of Internet by faculty and Research Scholars at Gulbarag University Library findings showed that majority of the respondents had 2-4 years' experience of accessing the Internet. More than (60%) of respondents use the Internet for e-journals, with lower but substantial numbers for other kinds of resources, more than three fifth of respondents used search engines, while use of Internet gateways, and less than (10%) used subscription databases. Search engines are the main tools for locating Information. Google was by far the most preferred search engine with an (80.37%) response.

### **3.0 Research Methodology**

"Research is a process of steps used to collect and analyze information to increase our understanding of a topic or issue". It consists of three steps: Pose a question, collect data to answer the question, and present an answer to the question- Creswell (2008)"In the broadest sense of the word, the definition of research includes any gathering of data, information and facts for the advancement of knowledge." - Shuttleworth (2008)

### **4.0 Nature of The Study**

The study was conducted to know the current status of use of search engines among Faculty Members and Students. The various tools and techniques used for conducting the study have been described in this chapter.

### **5.0 Statement of The Problem**

Web has grown to encompass a variety of information sources - electronic journals, pre-prints, technical reports, databases, library catalogues, educational materials, career sources, information on organizations, associations and so forth.

Thus the investigation was assigned to conduct the study of Faculty and students of NIT Kurukshetra and the topic is “Use of Search Engine for Retrieval information in NIT Kurukshetra: A Case Study”.

### **6.0 Objectives of The Study**

The study under the project is being conducted keeping in view the following mentioned objectives:

1. To know the purpose and utilization of the internet and search engines by faculty members and students.
2. To ascertain the users' preferences of search engine.
3. To determine the frequency of using internet and search engines by faculty members and students.

4. To know the frequency of using paid databases for search.
5. To know responses in view of keeping track of searches.
6. To know the extent of satisfaction with the retrieved information from selected search engine.

### **7.0 Methodology**

The survey method is adopted for undertaking the present study. The data collection tools like questionnaire, interview and observation are used to collect the data. Two questionnaires were prepared: one for the librarian and one for the users.

### **7.1 Tools and Techniques of Data Collection**

While deciding about the method of collection to be used for the study, the researcher should keep in mind two types of data viz., primary and secondary. The primary data are those, which are collected afresh and for the first time, and thus happen to be original in character. The secondary data, on the other hand, are those which have already been collected by someone else and which have already been passed through the statistical process. The researcher would have to decide which sort of data he would be using (thus collecting) for his study and accordingly he will have to select one or the other method of data collection.

In the present study the data has been collect mainly collected through questionnaires method. However, interview and observation methods have also been used occasionally.

### **7.2 Questionnaires**

Questionnaire and interview methods have been used to find out the opinions from the users of internet and search engines in NIT kurukshetra. For this purpose, tow questionnaires were designed –one questionnaire for librarian to get the exact information regarding library staff, hardware and software facilities provided by the library and second for the users to know their views about use of search engines and to get their valuable suggestions for further improvements.

While designing the questionnaires, self-explanatory questions were used in simple language along with keeping in mind the length of the questions and only those questions were included in this study which had direct relevance with the topic under investigation.

**Table1: Questionnaires Distributed and Filled Received**

Status	No. of questionnaires distributed	No. of questionnaires received
Students	150	80
Faculty members	50	20
Total	200	100

### **7.3 Data Analysis**

Users are the mirrors of the library services through which the image of library services is reflected. In the present chapter the data obtained from the 100 respondents i.e. faculty members and students have been analyzed.

For the purpose, a total of 200 questionnaires were distributed to the students and the faculty members NIT Kurukshetra, in response 100 questionnaires were received from the students and 60 questionnaires were received from the faculty members.

The data has been collected, analyzed and presented in tabular form so as to make the study reflective and easy to understand.

**Table2: Preference of Place to Use Internet**

Respondents	Library		Deptt.		CCN		Hostel		At Home/ Other	
	n	%	n	%	N	%	n	%	n	%
Students	21	26.3	19	23.7	22	27.5	36	45	2	2.5
Faculty	4	20	11	55	2	10	-	-	3	15

show that maximum numbers of students i.e. 22 (27.5%) out of 80 use internet in CCN and a very small number of users i.e. 2(2.5%) use at home. But in case of faculty members i.e. 55% use INTERNET in their respective departments and the minimum number i.e. 2(10%) use INTERNET in CCN.

**Table 3: Frequency of Using Internet**

Respondents	Daily		Twice a Week		Weekly		As Per Need	
	n	%	n	%	n	%	n	%
<b>Students</b>	46	57.5	9	11.25	12	15	13	16.25
<b>Faculty</b>	16	80	1	5	1	5	2	10

Depicts that in comparison to always findings relevant information the respondents find relevant information most of time i.e. by 61.25% students and 55% faculty members. Those members who find information only some time are 11.25% students and 10 % faculty members.

**Table 4: Purpose of Using Search Engine**

Respondents	Education		Research		Fun	
	n	%	n	%	n	%
<b>Students</b>	44	55	20	25	34	42.5
<b>Faculty</b>	16	80	9	45	7	35

Table above table shows that majority of the students as well as faculty members use search engines for education purpose as replied by 55% and 80% of the students and faculty members respectively. The next to it is Research as the purpose of using INTERNET as replied by 9 i.e 45% faculty members but in case of students the next is the 'FUN' as the purpose of using INTERNET. 25% of students use search engine for 'Research and 35% faculty members use it for 'FUN'. It is clear from the above table that maximum number of students and faculty members use search engine for the purpose of education.

## 8.0 Conclusion

More students prefer to use internet in CCN rather than in library. Less respondents use internet at home and majority of the faculty members prefer to use internet in their respective departments. Majority of the users use INTERNET daily. 1-2 hours and 2-3 hrs. are spent on search engine per sitting by students and faculty members respectively. Maximum number of users are using internet for 1-5 years. All the members are aware with search engines. Main purpose of browsing Search Engines is the education and research work. A good number of respondent's sometime use paid databases i.e. EMERALD, SPRINGER, and SCIENCE DIRECT etc. Maximum number of student respondents use just one search engine on regular basis whereas two or three search engines are used by majority of faculty members. Google is used by all most 80% respondents and yahoo get the second rank however rest of the search engines viz. Ask, Bing and exalead got the negligible users.

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