A Study on Search Engine and Its Role in Development of Human Race

Sivasubramanian G

Assistant Librarian,
Department of Library
Sri Ramakrishna College of arts and science
Coimbatore- 641006.
Email: sivamlis2008@gmail.com

Dr. P. Gomathi

Assistant professor
Dept. of Library and Information Science
Periyar University
Salem – 636011.
Email: gomathi148@gmail.com

DR.B.MUKUNTHAN

Associate Professor
Dept. of Computer Science
Sri Ramakrishna College of arts and science
Coimbatore- 641006.
Email: dr.mukunthan.bmk@gmail.com

Abstract - *The major developments in the field of Information and Communication Technology (ICT) have produced innovative changes in all fields of information. Libraries, being the reservoirs of information, are no exclusion to this development. The civilization and atmosphere around the libraries are changing and getting altered. As a result of information explosion, users are getting access to the vast amount of information. In the awareness the public, the influence of Information and Communication Technologies (ICT) has a great impact on the libraries which envisages paperless information society, and has brought about drastic changes in library services. It has changed the functioning of the libraries of institutions of higher education. The conventional maintenance process and services are retreating day by day, giving rise to modern vibrant library services as libraries without fortifications, providing right of entry to different electronic journals, online resources and various databases are available during the publisher websites.*

Keywords: ICT, library, information society, search engine, online, electronic journals

1. INTRODUCTION

The significant developments in the field of Information and Communication Technology (ICT) have created revolutionary changes in all fields of knowledge. Libraries, being the reservoirs of knowledge, are no exception to this development. The society and environment around the libraries are changing and getting altered. As a result of information explosion, users are getting access to the vast amount of information. In the knowledge society, the influence of Information and Communication Technologies (ICT) has a great impact on the libraries which envisages paperless information society, and has brought about drastic changes in library services. It has changed the functioning of the libraries of institutions of higher education. The traditional house-keeping operations and services are diminishing day by day, giving rise to modern dynamic library services as libraries without walls, providing

access to various electronic journals, online resources and various databases are accessible through the publisher websites.

Three main types of Search Engines
1. Individual Search Engines - text or image based Search Engines: Example: Google (www.google.com)
2. Subject Directories - Subject based Search Engines. Example: Yahoo (www.yahoo.com)
3. Meta Search Engines - Search Engines of Search Engines. Example: Askjeeves (www.askjeeves.com)

2. REVIEW OF LITERATURE

Mohamed Haneefa K & Rahila K. P. (2017) - The aim of this study was to examine the role of cognitive styles on the Web search pattern of the students of universities in Kerala. The study employed the Web search pattern scale and group embedded figure test for data collection from a representative sample of 450 students. It is revealed that there exists a significant gender difference in the influence of the different levels of cognitive styles of the students on their Web search pattern. The results of this study will be useful to design and develop more user-oriented intelligent interfaces for the Web**. Haneefa K (2007)** presented the results of an investigation in the study "Use of ICT Based Resources and Services in Special Libraries in Kerala, India. The email service was used by the largest percentage of the users. WWW was being used by 60 per cent of the library users. A good no. of users were not satisfied with the application of ICT in the libraries and indicated 'inadequate ICT infrastructure' as their reason for dissatisfaction. Users proposed a variety of measures of formal orientation and training in ICT based resources and services. A web search engine is an interactive tool to help users locate information available via the internet. **Liaw and Huang (2006**) explain that the search engines are essential tools for finding information on the World Wide Web (WWW). The number of search engines on the web can help the end users find any information, anytime and anywhere on the web. Thus, the search engines have become a major tool for searching information over Internet (Wirth et al., 2007). The Internet and World Wide Web (WWW) are increasingly becoming popular at all levels of professional career. Today, the colleges are playing an important role in imparting technical education. The engineers, who are the outcome of these colleges, require the latest and pinpointed information in their respective fields. There is a lot of information available in Engineering and technology discipline over the World Wide Web (WWW). It is very difficult to retrieve the correct information on the web. The search engines can provide links to relevant information based on their requirements or queries. Today it is essential for information professionals to learn the skills of surfing internet and know the tools and techniques for locating and exploiting the information resources in order to provide better information services. Hence, the present study investigates attitudes and perceptions of the 'faculties' towards the use of search engines. **Odin L. Jurkowski (2005),** Higher education, and in particular libraries, have changed significantly over the last decade due to the adoption of technological advancements such as the Internet and the World Wide Web. The multitude of ways patrons can interact with librarians and library resources has been only the latest step in a very long process which started with traditional snail mail and the phone. As educators, librarians have always been interested in using new tools to improve services. These services are increasingly being made available to patrons who do not physically enter a library building. This paper looks at what library services are currently being offered to students at a distance in order to better plan for the future.

3. ADVANTAGES AND DISADVANTAGES OF SEARCH ENGINE

Search engine marketing is imperative to any business's Internet marketing plan. Search Engine Optimization (SEO) is the process of affecting the visibility of a website in a search engine's natural, or unpaid, results. SEO has advantages but also disadvantages that require careful consideration before you decide on taking that route to grow your business.

Advantages

- Trusted by Consumers – When they search for a particular product or service, they trust that the top result is the best one. Is it the best? That's not necessarily the case, but the top result does have some very good search engine marketing thanks to this assumption.
- Trackable – Results are much more satisfying when you can see them laid out right in front of you, and search engine marketing allows you to see just what is and isn't working.
- Targeted Traffic – The traffic you receive to your website from a search engine is made up of users who searched for applicable search terms related to your business. This is much more productive than meaningless hits that will not turn into sales.

Disadvantages

- Takes Time – Unfortunately, search engine optimization does not work overnight. It takes time for a website to rank on certain search terms; slowly, you'll see your name climb up the ladder of results.
- Competitive Keywords – Some keywords are competitive, which means there are a lot of companies out there, just like you, who are trying to rank on those same keywords. This can make it take longer for you to rank.
- Adjusting to Change – Search engines are often changing their algorithms to get more accurate results, which means one day you can have the number one ranking, and the next day you'll be at the bottom of the page.

4. THE MENACE IN USING THE SEARCH ENGINE

The computer is constantly downloading files and in some cases other software so you can use the web to its full capacity. However, sometimes these files or programs are written by people who want to steal your information or harm your computer. This is called Malware or Malicious Software.

A virus checker regularly scans your entire computer and looks for files or programs that may be malicious. When it find one, it either deletes it or 'quarantines' it if it is also part of an important program and needs to be fixed separately. A virus check that we recommend is AVG Free. Virus checkers connect to their home server every day to get updates on new kinds of viruses so you're constantly updated.

Another important program to have is a Firewall. A firewall monitors all the traffic that is going to and from your computer via your internet connection. Think of a firewall as a gatekeeper to your computer – it only lets certain things in or out. This can stop unauthorized systems accessing your computer as well as malicious programs on your computer accessing the internet at downloading more malicious programs. Windows comes with a built in firewall which should be enough for most people, however if you are having problems with Windows Firewall. Finally you may want to install some specialist anti-adware software.

This looks for the stuff that your virus checker can sometimes miss, in particular adware or spyware that makes your computer vulnerable.

5. CLOUD COMPUTING

At the moment, you have a computer, and all your software and files sits on your computer. While this has worked well for a long time it has a number of limitations. Your files can only be accessed from one place, which means you have to either copy them on to something else like a thumb drive. It also makes the risk of losing files much higher. While we all know we're supposed to back up our important stuff, I don't know of many people who haven't lost something important at least once because they forgot to do this.

2. This is where cloud computing comes in. Instead of having your files stored on your home or work computer, they are stored on a server just like a website. This means that you can access your files from anywhere. And instead of having software installed on your computer, you can use software that's available over the internet using just your web browser. One of the best examples of this is the Google suite of applications that are available for free at Google.com. Google has a really easy to use email service, as well as applications for creating documents, subscribing to blogs, scheduling events and meetings on calendar and even building websites.

6. KEY FACTORS TO USE A SEARCH ENGINE EFFICIENTLY

i) Use unique, specific terms

It is simply amazing how many Web pages are returned when performing a search. You might guess that the terms blue dolphin is relatively specialized. A Google search of those terms returned 2,440,000 results! To reduce the number of pages returned, use unique terms that are specific to the subject you are researching.

ii) Use the minus operator (-) to narrow the search
How many times have you searched for a term and had the search engine return something totally unexpected? Terms with multiple meanings can return a lot of unwanted results. The rarely used but powerful minus operator, equivalent to a Boolean NOT, can remove many unwanted results. For example, when searching for the insect caterpillar, references to the company Caterpillar, Inc. will also be returned. Use Caterpillar -Inc to exclude references to the company or Caterpillar -Inc -Cat to further refine the search.

iii) Use quotation marks for exact phrases
It is often to remember parts of phrases seen on a Web page or part of a quotation which is to be track down. Using quotation marks around a phrase will return only those exact words in that order. It's one of the best ways to limit the pages returned. Example: "Be nice to nerds". Of course, you must have the phrase exactly right — and if your memory is as good as mine, that can be problematic.

iv) Don't use common words and punctuation
Common terms like 'a' are called stop words and are usually ignored. Punctuation is also typically ignored. But there are exceptions. Common words and punctuation marks should be used when searching for a specific phrase inside quotes. There are cases when common

words like they are significant. For instance, Raven and The Raven return entirely different results.

v) Capitalization

Most search engines do not distinguish between uppercase and lowercase, even within quotation marks. The following are all equivalent:
- technology
- Technology
- TECHNOLOGY
- "technology"
- "Technology"

vi) Drop the suffixes

It's usually best to enter the base word so that you don't exclude relevant pages. For example, bird and not birds walk and not walked. One exception is if you are looking for sites that focus on the act of walking, enter the whole term walking.

vii) Maximize AutoComplete

Ordering search terms from general to specific in the search box will display helpful results in a drop-down list and is the most efficient way to use AutoComplete. Selecting the appropriate item as it appears will save time typing. You have several choices for how the AutoComplete feature works:

Use Google AutoComplete. The standard Google start page will display a drop-down list of suggestions supplied by the Google search engine. This option can be a handy way to discover similar, related searches. For example, typing in Tucson fast will not only bring up the suggestion Tucson fast food but also Tucson fast food coupons. Use browser AutoComplete. Use this Google start page to disable the Google AutoComplete feature and display a list of your previous searches in a drop-down box. I find this particularly useful when I've made dozens of searches in the past for a particular item. The browser's AutoComplete feature must be turned on for this option to work. Click one of these links for instructions detailing how to turn AutoComplete on or off in I.E. and Firefox.
Examples:
- Visual Basic statement case
- Visual Basic statement for
- Visual Basic call

viii) Customize your searches

There are several other less well known ways to limit the number of results returned and reduce your search time:

The plus operator (+): As mentioned above, stop words are typically ignored by the search engine. The plus operator tells the search engine to include those words in the result set. Example: tall +and short will return results that include the word *and*.
The tilde operator (~): Include a tilde in front of a word to return results that include synonyms. The tilde operator does not work well for all terms and sometimes not at all. A

search for ~*CSS* includes the synonym *style* and returns fashion related style pages —not exactly what someone searching for CSS wants. Examples: ~HTML to get results for *HTML* with synonyms; ~HTML -HTML to get synonyms only for *HTML*.

The wildcard operator (*): Google calls it the *fill in the blank* operator. For example, amusement * will return pages with *amusement* and any other term(s) the Google search engine deems relevant. You can't use wildcards for parts of words. So for example, *amusement p** is invalid.

The OR operator (OR) or (|): Use this operator to return results with either of two terms. For example happy joy will return pages with both *happy* and *joy*, while happy | joy will return pages with either *happy* or *joy*.

Numeric ranges: You can refine searches that use numeric terms by returning a specific range, but you must supply the unit of measurement. Examples: Windows XP 2003...2005, PC $700 $800.

Site search: Many Web sites have their own site search feature, but you may find that Google site search will return more pages. When doing research, it's best to go directly to the source, and site search is a great way to do that. Example: site: www.intel.com rapid storage technology.

Related sites: For example, related: www.youtube.com can be used to find sites similar to YouTube.

Change your preferences: Search preferences can be set globally by clicking on the gear icon in the upper-right corner and selecting Search Settings. I like to change the Number of Results option to 100 to reduce total search time.

Forums-only search: Under the Google logo on the left side of the search result page, click More | Discussions or go to Google Groups. Forums are great places to look for solutions to technical problems.

Advanced searches: Click the Advanced Search button by the search box on the Google start or results page to refine your search by date, country, amount, language, or other criteria.

Wonder Wheel: The Google Wonder Wheel can visually assist you as you refine your search from general to specific. Here's how to use this tool:

Click on More Search Tools | Wonder Wheel in the lower-left section of the screen (**Figure 1**) to load the Wonder Wheel page.
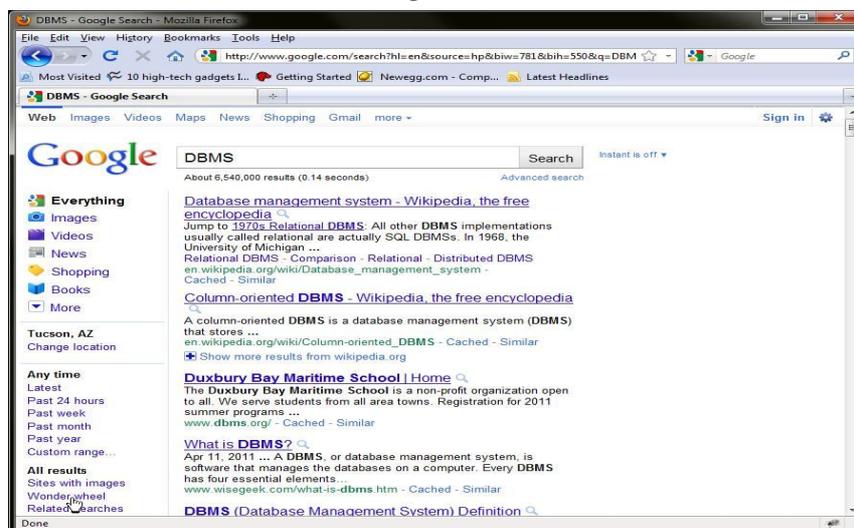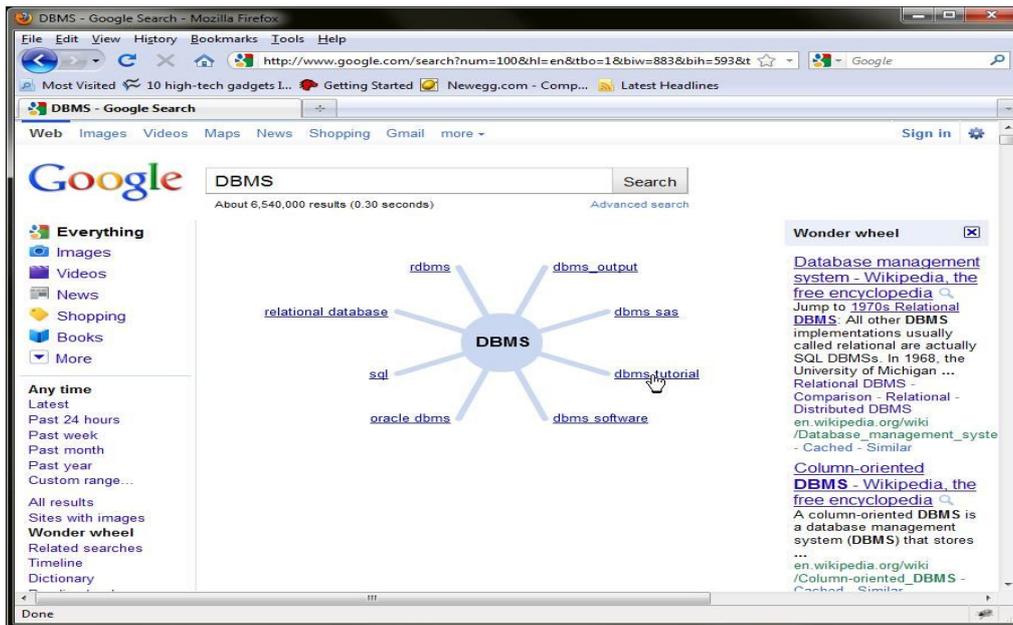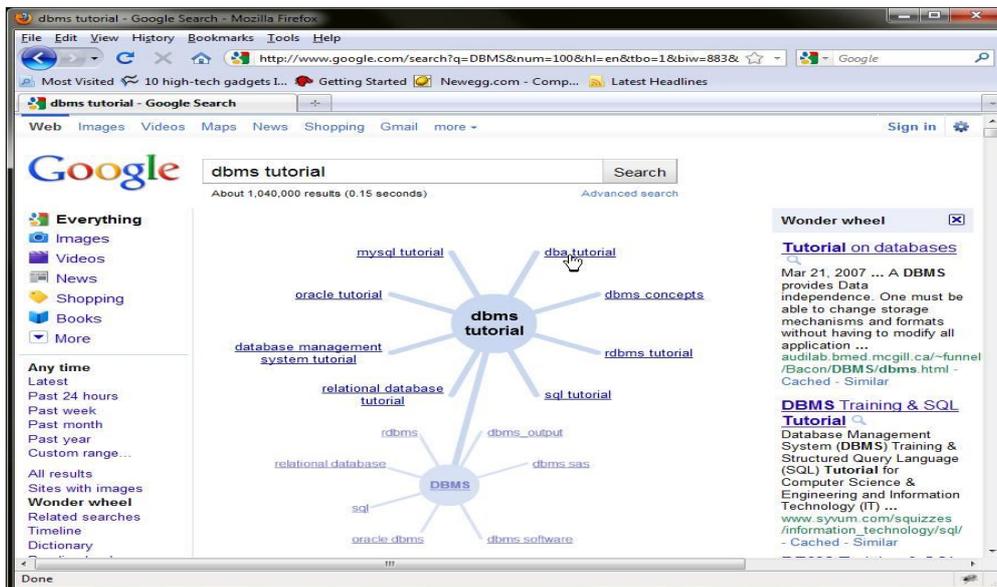Click on dbms tutorial (**Figure 2**).

Figure 1

Figure 2

As you can see in **Figure 3**, Google now displays two wheels showing the DBMS and dbms tutorial wonder Wheels, with the results for dbms tutorial on the right side of the page. You can continue drilling down the tree to further narrow your search. Click the Close button at the top of the results to remove the Wonder Wheel(s).

Figure 3

ix) Use browser history

Many times, I will be researching an item and scanning through dozens of pages when I suddenly remember something I had originally dismissed as being irrelevant. How do you quickly go back to that Web site? You can try to remember the exact words used for the search and then scan the results for the right site, but there is an easier way. If you can remember the general date and time of the search you can look through the browser history to find the Web page.

x) Set a time limit — then change tactics

Sometimes, you *never can* find what you are looking for. Start an internal clock, and when a certain amount of time has elapsed without results, stop beating your head against the wall. It's time to try something else:

- Use a different search engine, like Yahoo!, Bing, Startpage, or Lycos.
- Ask a peer.
- Call support.
- Ask a question in the appropriate forum.
- Use search experts who can find the answer for you.

7. SOCIAL BOOKMARKING

When you find a web page that you find interesting, instead of having to remember the address of the webpage, you can simply save the address as a 'bookmark' in your browser (some browsers call them favorites). Social bookmarking is like saving favorites on your browser, except you're saving to a website that you can access from any computer in the world. But the part of social bookmarking is the 'social' part. Everyone can look at everyone else bookmarks.

This means that you can browse and search through content that other people have already decided is worth looking at. This can be much better than a search engine, which just uses a computer program to decide what's relevant and what's not – with social bookmarking sites, all the content has been picked by actual people. You can also see how good different content is by how many times it's been saved by different users. Most social bookmarking sites will display a number next to the content indicating how many times it has been saved by another user. These sites also show a continually updated list of popular web pages. This can be a great way of finding interesting content that you might not otherwise come across.

There are tons of social bookmarking sites, but the following are five popular, easy to use sites that are a good place to get started.

- Delicious
- Stumble Upon
- Digg
- Reddit
- Sphinn

The number of people utilizing internet search engines is growing year on year and is almost immeasurable. In the market share chart and the data from Internet live stats, the amount of daily searches on Google - 3.5 billion which counts to 1.2 trillion searches per year internationally. It is fascinating to see how far search engines have come, in 1999 it took Google one month to creep and index 50 million pages; however in 2012 it took less than one minute. The internet is moving at a much faster speed and it is important to keep up in order to keep your subject seen. The number of people utilizing internet search engines is given in figure 4 below. In 2017 46.8% of the global population uses the internet and by 2021 this figure is expected to grow to 53.7%.
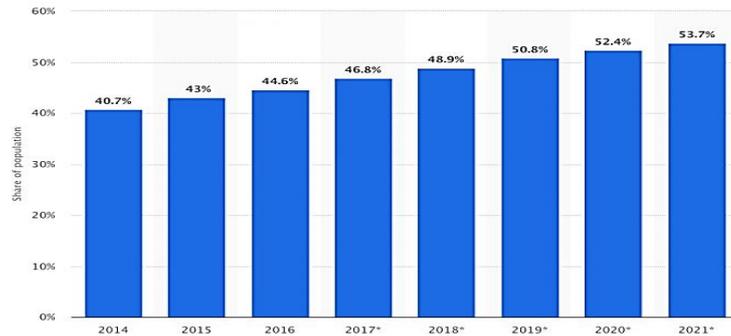
Figure 4 Number of people using internet search engines

Mobile phones have been conquering website traffic year on year. Through mobile phones in 2009 only 0.7% of web traffic worldwide was utilized. Web traffic created through mobile phones from 2009 till 2017 is given in figure 5. This is most likely due to the slow internet connection and the need of mobile-friendly sites which slowed down an easy user experience. However, with technological progress and the strong development of smartphones during the last 9 years, mobile internet use is much simple, faster and easy to get to. In 2017 mobile accounts for 50.3% of all web traffic created worldwide and worldwide desktop market share of major search engines from January 2010 to October 2017 is shown in figure 6.
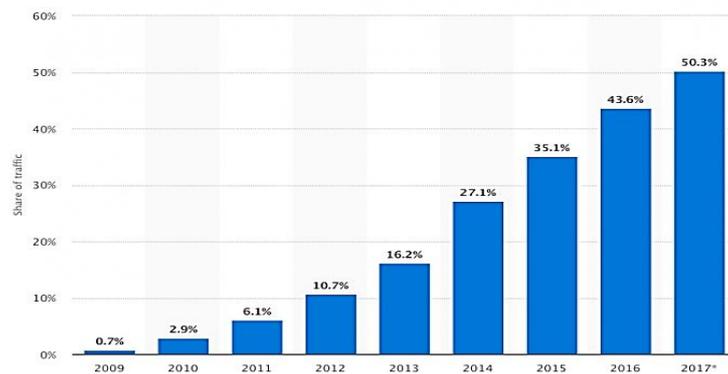

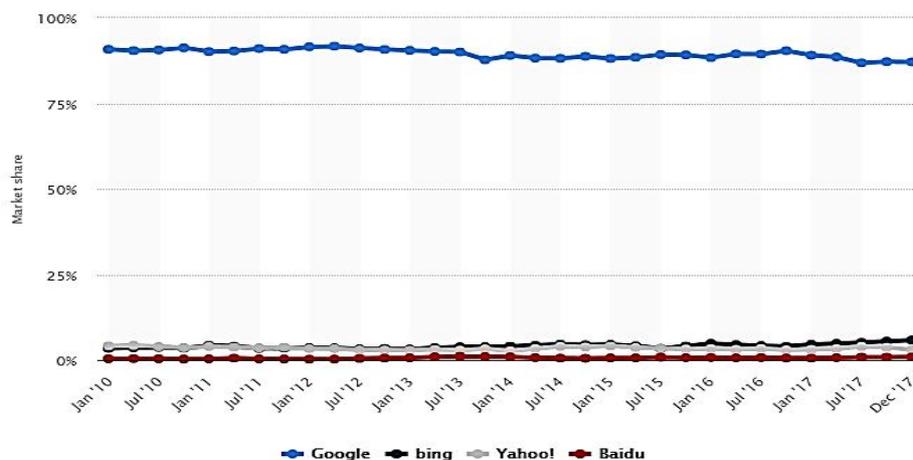**Figure 5 Web traffic worldwide generated through mobile phones**

Figure 6 Worldwide desktop market share of leading search engines from January 2010 to October 2017

8. CONCLUSION:

It is universally accepted that all human beings are in need of suitable information for their day-to-day activities, irrespective of their profession. Although, there are considerable numbers of methods for collection of data / information, at this juncture, users, especially academicians and researchers are fascinated to use Web / Internet extensively. The users have the option of selecting suitable Search Engine, among the big lot such as, Google, Yahoo, AltaVista, Rediff, etc., for searching Web / Internet and retrieve required information. Based on the analysis of the data, it was found that the Engineering faculty preferred to use Google followed by Yahoo, MSN, AltaVista, and Rediff.

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