Information Search: Strategy and Techniques

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Abstract

This paper examined Internet Search Strategies It delivers the final design element and describes concepts for controlling the search. Different strategies for controlling search differ in the design and control of the intensification and diversification phases It is important for search strategies to balance intensification and diversification during search and to allow search methods to escape from local optima. This is achieved by various diversification techniques based on the representation, search operator, fitness function, initialization, or explicit diversification steps controlled by the search strategy. Within the electronic environment, information is accessed through the Internet, online databases for journal articles and books. Users also access specialized databases that cover specific subject areas. Information available and accessible online is massive. To make maximum use of this information and to avoid frustration while looking for relevant information, the user should have search skills that include being familiar with search techniques.

Keywords: Internet Search Strategies, Meta Research, Boolean Operators, Controlled Vocabulary

Introduction:

The convergence of computer and telecommunication has revolutionized information management in the present day information environment. One of the products of this myriad of convergence is the birth of the Internet. In the process of trying to make information available to information seekers and users in the past few years, Internet search strategies have become the state of the art. This is so considering the strategic importance of Internet in information retrieval. The world over have been availed the opportunity of Internet in the enhancement of

knowledge and research. The invention of the Internet, CD-Rom technology, and on-line information search engines, among others have made this possible. The information superhighway as it is usually called is simply the interconnectivity of computers that provide a wide range of information in all facets of human endeavors to end-users. The Internet can be used for research by browsing the World Wide Web (www) using the Uniform resource locator (URL) to access databases provided electronically by information providers. E-mails can be sent and received; chats and discussion can be conducted in addition to the transaction of e-commerce. Therefore, among its chief uses are research, entertainment and business. Students need Internet because. of its flexibility and dynamism in information retrieval, storage and processing. Internet is very important to students because they need to have access to timely, accurate and relevant academic information. Internet sources like the search engines have greatly increased the speed of searching out information. They have brought considerable relief to students in universities, as students can conveniently walk into any library that has its holdings on Internet and have access to unlimited information.

Preparing the search

In our daily activities whether in learning, working or for personal reasons, information is vital. While looking for information, the starting point will depend on the type of information required. The user may be looking for scholarly information, practice guidelines, information on a certain disease condition such as diabetes or general information. Depending on the information required, the user may require the services of general search engines such as Google or pecialized search tools such as the Cochrane Library. A bibliographic database is an important starting point for any information related to biomedicine, and health sciences.

Types of searches

There are different search options depending on the level and amount of information that is of interest to the user. To search is to carefully look for something and effective searching requires planning. Good searches are planned not accidental.

- Simple search
- Advanced search
- Meta search

Simple search

A simple search is when the user uses some keywords to perform a quick information search from a database or from a search engine. A simple search may retrieve a huge amount of search output that may take time to sieve through for any relevant information item. In simple searches, browsing rather than focused searches is done. In simple searching one or two concepts can also be used. The user may use simple searches when not sure of the type of information required and when the topic is not focused on any area. This simple search can also retrieve information on both concepts if they are not related to each other. The search results may be overwhelming and the user would be required to apply search techniques to focus the search for relevancy.

Advanced search

Advanced searching is the use of techniques that help to define the information that is being searched. In advancing searching, some filtering is done to reduce the amount of items retrieved. Filtering refines the search for relevancy. In advanced searching the user is able to apply multiple search fields that can help to broaden or narrow the search depending on the topic and the search strategy.

The use of advanced searching helps the user to:-

- Apply filtering
- Reduce number of items retrieved
- Apply multiple search fields

Advanced searching tools are available in most search tools.

Meta search

A Meta search is when the user uses a variety of search tools simultaneously. This is done with the use of Meta search engines such as Dogpile, Search.com; Metacrawler and Vivisimo. These Meta search engines searches many search tools such as Google, Yahoo, and MSN among

others. Searching from a Meta search engine is conducted in the same way as in single search engines. A search can be a simple search or an advanced search. The only difference between Meta search engines and single search engines is that the search results will come from different search engines simultaneously.

Use of Keywords

Keywords are the words and phrases that are used to closely describe the topic or subject by the author or through indexing. Keywords capture the ideas described in a document. In using keywords, it is important to consider related terms such teenager or adolescent, variations in word spelling such as American and English versions such as anemia or anemia, plural or singular versions, synonyms such as infant or newborn, or use of controlled vocabulary that gives alternative terminology to a word in controlled vocabulary terminology. The difference between the use of plural and singular in search terms can produce varying results as can be seen by this search

Adolescent problems in India –Google= 2,540,000

Adolescent problem in India - Google= 253,000

The use of plural infections instead of singular infection has increased the amount of retrieved information significantly in search tool, Google.

Controlled vocabulary

The use of controlled vocabulary is to give uniformity and consistency to the indexing of the literature. The controlled vocabulary ensures consistency in presentation of information for related topics. It also tries to standardize the language used by authors. The Economics Subject Headings is a distinctive feature of Subject gateway- the foremost Economical literature database. It is the most used controlled vocabulary or thesaurus for economical literature. It is used in the economic database. This is used in the preparation of a search tool through subject gateways.

Through the use of controlled vocabulary, the user is likely to retrieve more relevant results. In subject gateways, only records that have gone through the indexing process are assigned in these terms. Those records that are not economic records may not have the terms and searching through subject gateways will exclude such records.

Case sensitivity

Electronic information can be presented in upper and lower case. It is advisable to control the use of upper and lower case while searching for information. Some search terms such as names of people and places may require the use of capital letters. However, the use of uppercase will retrieve only those words that are presented in uppercase. Using lowercase at all times helps

retrieve information whether the information is presented in capital letters or not. Users should know when to use upper and lowercase letters. The use of lowercase should be preferred to avoid missing out useful information.

Use of Abbreviations

Some search terms are commonly presented as abbreviations. For example the use of DDC instead of Dewey Decimal Classification may affect the end results. The user has to be vigilant on the effect of such abbreviations on the outcome of the search.

Steps in Developing Search Strategy

In search preparation, the search topic is sometimes presented as a question. It is only by coming up with the search topic that the user is able to come up with words that are important in the search. This is because most Search tools such as Google use keywords in searching for information.For example a search topic such as "What is the problems for women's in India?" would break the topic in keywords such as ("problems, women's, India). The user may also decide the publication period to be covered by the search, the type of information required whether reviews, journal articles or any other information. The process of preparing for the search and coming up with a search plan is referred to as 'formulating a search strategy.' The user should also be familiar with certain search tools in the area of subject interest

Use of Search strategies

What is a search strategy? This is a plan that helps the user to articulate the type of information that is required. A search strategy is a plan that guides the user to answer some questions such as:
What is the purpose of the information?
Is there a time frame for the required information? Is the information required general or specific?
What sources would best retrieve the required information, general or specific tools?
Would the information be specific to a certain geographical location?
A search strategy relates to having good guidelines that will lead to a successful search output.
Having a search strategy helps the user to:
Define the topic e.g. Hybrid Libraries in India.

- Break the topic into concepts or keywords such as: Hybrid, Libraries, India.
- Use search techniques such as Boolean operators to refine the search
- Try out the search strategy and refine it as necessary for better results

• Identify the appropriate search tool and search techniques
• Decide on whether to start with a general search engine such as Google, etc.
• Have alternative choices such as starting from print-based information sources such as
• reports or grey literature.
• Advantages of search strategy
• Saves time
• Helps retrieve relevant information
• Can be stored for later use.
• Requirements for a successful information retrieval
• Defining the search problem
• Developing a search strategy
• Using search techniques
• Learning how to use a search tool e.g. Google Scholar
• Using correct spelling
• Considering other forms of information sources such as print and audio-visual
• Evaluating the retrieved information
Using the information appropriately

Search techniques

Search techniques are ways of using search terms in finding required information from search tools. Search tools are many, e.g. Online Public Catalogues- OPAC, general search engines, search directories and portals as well as online databases or deep web.

To achieve good search results, it is necessary to use search techniques.

The following are some of the most common search techniques that are applicable to various searching tools.

• Boolean Operators
• Phrase searching
• Proximity search
• Fuzzy Search
• Stemming
• Truncation searches

• Wildcard searches

1. Boolean Operators:

Boolean Operators are simply words (AND, OR. NOT, or AND NOT) used as conjunction to combine or exclude key words in a search, resulting in more focused and productive results. This should save time and effort by eliminating inappropriate hits that must be scanned before discarding. Using these operators can greatly reduce or expand the amount of records returned. Boolean operator saves time by focusing searches for more on target' results, that are more appropriate to your needs, eliminating unsuitable or inappropriate ones.

AND—AND requires both terms to be in each item returned. If one term is contained in the document and the other is not, the item is not included in the resulting list. (Narrows the search)

Example: a search on stock market AND trading includes result contains: stock market trading; trading on the stock market; and trading on the late afternoon stock market.

OR—either term (or both) will be in the returned document. (Broadens the research)

Example: A search on ecology OR pollution includes results contains: documents containing the world ecology (but not pollution) and other documents containing the word pollution (but not ecology) as well as documents with ecology and pollution in either order or number of uses.

NOT or AND NOT-- the first term is searched, then any records containing the term after the operators are subtracted from the results.

Example: A search on Mexico AND NOT city includes results contains: New Mexico; the nation of Mexico; US-Mexico trade; but does not return Mexico City or This city's trade Relationships with Mexico.

Using Parentheses-- using the ( ) to enclose search strategies will customize your results to more accurately reflect your topic. Search engines deals with search statements within the parentheses first, and then apply any statements that are not enclosed.

Example: a search on (smoking or tobacco) and cancer returns articles containing: smoking and cancer; tobacco and cancer smoking; cancer, and tobacco; but does not return smoking or tobacco when cancer is not mentioned.

2. Proximity search-

one can use a proximity search to search for two or more words that occur within a specified number of words (or fewer) of each other in the databases. Proximity searching is used with a

keyword or Boolean search. The number of * represents any intervening words in between. It may be within 1, 2, 3 or more.

Example:

library* science

Google* search

3.Phrase searching-

Surrounding a group of words with double quotes tells the search engine to only retrieve documents in which those words appear side-by-side. Phrase searching is a powerful search technique for significantly narrowing your search results.

Example:

'Library science'

'Information retrieval'

'Global warming'

4. Fuzzy Search-

This is a type of search made possible by fuzzy matching. The search engine returns results that it predicts will be relevant, even when the terms used in the query does not appear anywhere in the matched documents.

Example: Subramanian will find Subramanian as well as Subramanian ~food will retrieve nutrition, recipes, cooking etc.

5. Stemming-

This means the engine will search not only for your search terms, but also for words that are similar to some or all of those terms. It will search for all variations of the word.

Example: 'read plan' will find pages with read, reading, reads, and plans, planning.

Truncation search-

Truncation places a symbol at the end of the word so you search for variant endings of that word.

Example: litera $ would look for literature, literacy, literal

Wildcard searches-

Wildcards also places a symbol within a word to find variations on it.

Example: analy*e would find analyse or analyze

Different symbols including $ * ~ #! : are used by different search tools

Operators used for different Search Strategies include the following:

- ' + ' to specify a must include term
- ' - ' to specify a must exclude term
- ' ' to specify a must include phrase
- ( ) to specify a set of terms
- : generally to separate the reserved word from the search terms
- * to specify term search (truncation)

Conclusion

The Internet is a new technological way to disseminate information to a larger population of people in a more speedy and accurate way. Therefore, the findings of the study revealed that students use the Internet to search for materials for writing term paper, projects and other assignments. Also, the results from this study show that searching and locating information on the Internet requires not only literacy skills but problem solving skills as well. Additionally, the study revealed that the students use the following Internet Search Strategies for their research: search engines, source information from the university library databases, doing key word searching but it was discovered from the research that the students are unaware of other ISS such as Boolean operators, phrase searching, sending e-mails to researcher to send them research materials. Also, the study revealed that the inadequate power supply, slow Internet connection, and lack of skills in the use of computers were problems militating against the use of Internet for research. However, more research is needed in this area to better understand the complexities of searching materials from the Internet. Clearly we must improve our understanding of the skills required for information searching on the Web and of the processes involved to help adequately prepare users for life in the new technological century.

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