ABSTRACT

The World Wide Web (WWW) is revolutionizing the way that people access information, and has opened up new possibilities in areas such as digital libraries, general and scientific information dissemination and retrieve, education, commerce, entertainment, government and health care. This amount of publicly available information on the web is increasing rapidly, as it includes more than 19 billion pages as announced by Yahoo in 2005. The number of web pages now growth around 30 billion. Add to this, the fact that the web lacks the bibliographic control standards we take for granted in the print media. Instead of a central catalogue, the web offers the choice of dozens of different search tools. This leads to the development of different search engines and subject directories. It has been observed that most users view search engines as the best method available for finding information on the Web. The goal of the present study is to conduct a large-scale study to measure the performance and efficiency of search engines on the first result page across the five most popular search engines, at specific points of time using a large number of complex queries. Based on the study conducted by the different organizations and survey agencies on the popularity of the search engines, five search engines have been selected for the study, i.e. AOL, Ask, Google, Live, and Yahoo.


The key findings of this research are- the basic concept of search strategies and searching processes of all the five search engines is remaining same. There are significant differences among the search engines in terms of coverage, relevancy, uniqueness, and stability. Although there is difference among the search engines in its retrieval effectiveness, Google occupied the top rank in terms of coverage, relevancy, and uniqueness of retrieved results during both the study. In terms of the
analysis of results stability, Yahoo has the highest mean stability as compared with the other four search engines. The present study also proves that no search engine is free from its faulty result hits. From the overall analysis of the findings it is obvious that the Google has statistically higher rate of performance in retrieving web resources as compared with the other four search engines studied. Google is followed by Yahoo in terms of measuring the retrieval performance. The other three search engines, i.e. AOL, Live, and Ask, have not performed satisfactorily as compared with Google and Yahoo. There was also no significant statistical difference among these three search engines. Another conclusion of this evaluation is that, users could, and should, contemplate Yahoo as a real alternative to Google, especially because both engines were able to answer all of the fifty queries with highest mean of relevant hits.

Thus, the study has produced key findings that are important for all Web search engine users and researchers, and the Web industry. The experiments show a high level of statistically significant result between the search engines in terms of effectiveness and also in terms of selecting the best and worst performing search engines. Given these findings, we can consider that this study will provide important insight into the effectiveness of five major types of search engines and their support in retrieving relevant internet resources. Accordingly, for different information needs or with different search technologies, the most effective search engine may be different. Hence, search engines performance needs to be tested and this should be done quite often.

Keywords: World Wide Web; Information Retrieval Systems; Search Engines; Search Engines Evaluation; Searching Strategies; Internet Resources.