Social Impact of Text Information Systems

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1 Is Relevance Relevant? Market, Science, and War: Discourses of Search Engine Quality

1.1 Citation

1.2 Summary

The author conducted a study to understand the motivating factors that drive search engine producers (SEP) to make changes to the engine. Between November 2002 and May 2004, the author interviewed eleven SEPs, including senior engineers and technical executives who direct future code development. These interviewees worked at every major and minor search engine on the market: Google, Yahoo!, MSN, Ask Jeeves, AOL, and more. Each individual was interviewed over the phone for 1-2 hours in a semistructured, in-depth format. Questions probed for specific instances of change to the search engine and inquired for the motivation behind that change. The text transcript of each interview was categorized to identify themes, from which the author determined two major schemas that motivate the development of search engine technology:

1) The Market Schema
Throughout these interviews, the most common category of motivator was the market schema, which includes revenues, costs, competition, and other business issues. In explaining this motivation, interviewees regarded their search engine as a commercial service competing for users in the marketplace. Thus, the primary motivator for SEPs is financial profit and that metric is linked to search engine quality via its direct correlation with customer satisfaction. Many of the technical changes were developed to increase profit.

2) The Science/Technology Schema
The second most common category of motivator was the science schema, which includes experimentation, measurement, feasibility, and objectivity. This motivator defined quality as relevance, or the ability to answer a user's question, and was defined by data-driven metrics. Many of the changes were developed to improve search result relevance, recall, or precision.

These interviews also revealed a subjective component of the search engines: blacklists, whitelists, and topic-specific weights. This censoring was often dictated by executives to respond to current events, but it is arbitrary and non-scientific. Still, these practices are accepted by the SEP because they strive to boost relevance.

This paper impacts all modern businesses because it describes the convoluted environment in which they compete for clicks. For many companies, the search engine is the primary portal through which consumers are reached. However, this paper shows that the portal is controlled by employees who seek to maximize profit or relevance for the search engine company, not for the online businesses who depend on the search engine. Thus, an online business must actively monitor and effect their position in the search engine rankings to maintain a steady flow of customers.

2 The Online Advertising Industry: Economics, Evolution, and Privacy

2.1 Citation

Evans, David S. "The online advertising industry: Economics, evolution, and privacy." Journal of Economic Perspectives (2009).

2.2 Summary

In 2015, media companies around the globe spent $545 billion dollars on advertisements. Historically, these ads have found a home in newspapers and TV commercials, but this model is under attack by the new era of online advertisements. Although Internet ads were born in the 1994, they have grown at an astonishing rate; ZenithOptimedia expects the Internet to account for more than one-third of U.S. ad spending in 2017, representing 400% growth since 2007. Indeed, many major newspaper businesses have gone out of business. But while this revolution has crippled some businesses, it has created new efficiencies and opportunities for the global economy by significantly reducing the transaction cost for merchants to find consumers.

Advertising is a matching game between merchants and consumers. The old model required merchants to buy a million newspaper ads with the hope that a small fraction of the population is interested. The search engine has changed this game entirely. Merchants are now able to identify individual consumers who are interested in the product by matching their search queries or registered account information. This ability to detect a consumer's interest and intent to purchase a product has transformed advertising campaigns from mass market tools into focused, personalized ads. The search engines are an intelligent intermediary in this lucrative matching game.

So how do these businesses play the game? Typically, a company will start with an objective (like "increase sales of product X" or "make our brand more friendly") and set a budget to achieve this goal. Advertisers will then divide this budget amongst the various forms of media: online, television, radio, magazines, newspapers, etc. based primarily on the expected rate of return for each medium. In a competitive marketplace, modern businesses have no choice but to take advantage the cost-efficient advertising offered by the online intermediary search engines. These online ads further increase their rate of return by directly linking the consumer to the merchants online portal to purchase goods.

In summary, the Internet's share of ad spending has grown over the past decade and will continue to grow because search engines provide a more cost-efficient, targeted method of matching consumers with merchants. Modern businesses must adopt this technology or risk becoming obsolete.