An Overview of Search Engine Advertising Research

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INTRODUCTION

The digital networked environment has created numerous new ways of how companies communicate and interact with prospective consumers. In correspondence with the diffusion of the digital networked environment in daily life, online advertising has been continuously increasing. For 2014, the Interactive Advertising Bureau reports a total of $ 49.5 billion online advertising spending in the United States, $ 6.7 billion (15.6%) higher than in 2013 (IAB, 2014). Search engine advertising accounts for $ 25 billion (50.5%), including $ 6 billion of mobile search advertising. In search engine advertising, search engines such as Bing or Google display advertisements alongside organic results on a search engine result page, when an advertiser is bidding on a keyword that is related to a search query (Olbrich & Schultz, 2014). From the consumer perspective, search engine advertising is a useful form of advertising because the keywords and the ad message are matched according to the search terms entered. For advertisers, search engine advertising represents an attractive opportunity to selectively reach the target group at a point in time when the prospects are already thematically involved and activated.

As one of the dominant forms of online advertising, search engine advertising has become the subject of increasing research interest. Researchers have investigated search behavior (e.g., Jerath et al., 2014; Joachims et al., 2007), multiple aspects of auction mechanisms (e.g., Edelman et al., 2007; Varian, 2007), keyword generation and selection (e.g., Chen et al., 2008; Klapdor et al., 2014), click fraud (e.g., Wilbur & Zhu, 2009), and the integration of search engine advertising into the marketing mix (e.g., Olbrich & Schultz, 2014; Wiesel et al., 2011). We provide a brief overview of these different streams of research addressing this multi-billion industry and give directions for future research.

The next section of this paper briefly describes the process of search engine advertising. Then, we present the major research streams in search engine advertising. The paper concludes with outlines for future research.

SEARCH ENGINE ADVERTISING

After users enter a search term, internet search engines, such as Bing or Google, usually display two sets of search results according to their proprietary algorithms: so-called organic results and search engine advertisements. Organic results are the outcome of the index retrieval and relevance ranking applied by a search engine. The impression of both the organic results and of the search advertisements is free of charge. However, for search engine advertisements, advertisers bid a value that they are willing to pay for each click on their advertisement. The adverts are then positioned according to an automated generalized second-price auction (Edelman et al., 2007; Varian, 2007). Besides the bid amount, the auctioning mechanism may also incorporate additional quality criteria (Aggarwal et al., 2008; Balachander et al.,

2009; Chen et al., 2009; Gonen & Vassilvitskii, 2008). Advertisers are only charged if a prospective consumer clicks on the advertisement. The user is then redirected to a target page provided by the advertiser, the so-called landing page. From the perspective of an advertiser, this user visit is positive if it leads to a predefined result – generally referred to as a conversion. A conversion may vary for different advertisers, e.g. a visit to a certain page, requesting information material, registering as a new customer or concluding an online transaction. Figure 1 displays this ideal process of search engine advertising.

Consumer Behavior and Search Engine Advertising

Both organic results and search advertisements receive more attention if they are positioned higher on the search engine result page (Joachims et al., 2007). Consumers value organic results and search adverts differently (Danescu-Niculescu-Mizil et al., 2010; Jansen & Resnick, 2006; Jansen & Spink, 2009; Jerath et al., 2014; Lo et al., 2014). Although the relevance of target pages is in general perceived as not significantly different (Jansen et al., 2007), in case of transactional searches, consumers find the advertised pages more relevant (Jansen, 2007). From a branding perspective, higher positioned lesser-known brand ads generate greater brand recognition and evaluation than lower positioned or well-known brand ads (Yoo, 2014). Gomes et al. (2009) identified two consumer groups with different search behavior. One group of consumers ignores search advertisements and has an overall low click probability. The second group examines all results and has a higher click probability. From an advertisers perspective, Ayanso and Mokaya (2013) compare the efficiency of search engine advertising for pure online retailers and multichannel retailers. Frustration also moderates the effect of hedonic or utilitarian searches on searchers' attitude towards search advertising (Sun & Spears, 2012).

Based on the results of an online experiment, Gauzente and Roy (2012) conclude that consumers prefer descriptive ad message in contrast to commercial messages – with price-conscious consumers being more influenced than less price-conscious consumers. Haans et al. (2013) demonstrate that different types of ad messages result in contrasting results when comparing click-through rates and conversion rates.

Figure 1. Process of search engine advertising
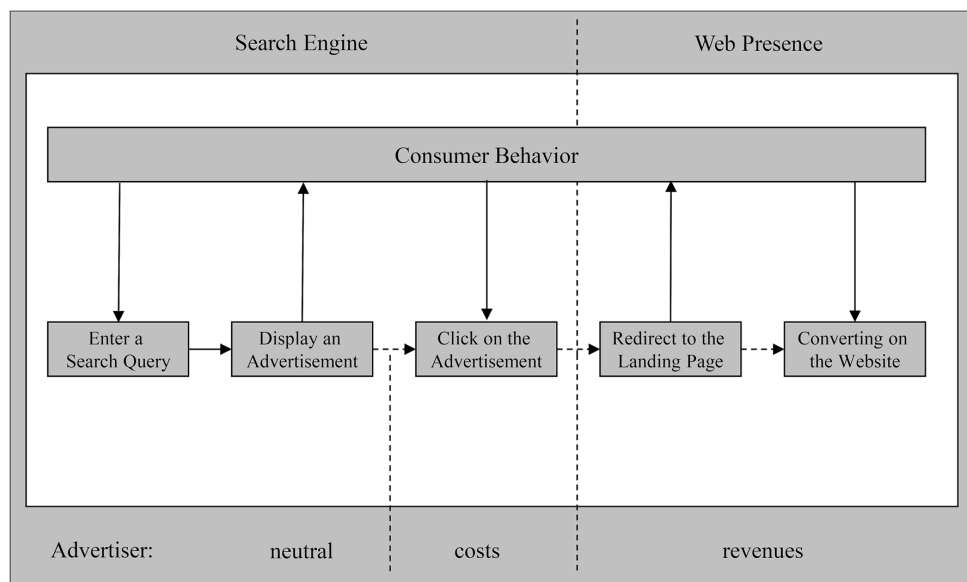
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