

# SHOULD COMPANIES BID ON THEIR OWN BRAND IN SPONSORED SEARCH?

Tobias Blask, Burkhardt Funk and Reinhard Schulte  
*Leuphana University of Lüneburg, Scharnhorststr. 1, 21335, Lüneburg, Germany*

**Keywords:** Sponsored search, Search engine marketing, Paid search, Brand marketing, e-Commerce, Keyword selection, Branded keywords.

**Abstract:** Sponsored Search allows companies to place text advertisements for selected keywords on Search Engine Results Pages (SERPs). The objective of the present research is to determine whether and under what circumstances it makes sense, in economic terms, for brand owners to pay for sponsored search ads for their brand keywords. This issue is the subject of a heated debate in business practice, especially when the company is already placed prominently in the organic search results. In this paper we describe and apply a non-reactive method that is based on an A/B-test. It was employed in a case study of a European Internet pharmacy. The results of this study indicate that the use of sponsored search advertising for the own brand name enables advertisers to generate more visitors (>10%), resulting in higher sales volumes at relatively low advertising costs even when the company is already listed in first position in the organic part of the respective SERP.

## 1 INTRODUCTION

In the information society, Internet search engines play a key role. They serve the information needs of their users and are an important source for advertising companies in terms of customer acquisition and activation (Jansen and Mullen, 2008). Search engine companies like Google generate most of their revenue through sponsored search (Hallerman, 2008). At the interface of computer science, economics, business administration, and behavioral sciences, search engine marketing has been established as an interdisciplinary research topic and has seen a growing and diverse number of publications during the last years (Edelman et al., 2007; Skiera, 2008; H. Varian, 2007; H. R. Varian, 2009). Selected decision problems are examined from the perspective of three stakeholder groups (i) users, (ii) search engines and (iii) advertising companies (Yao and Mela, 2009). Beside the optimal bidding behavior in sponsored search auctions (Kitts and Leblanc, 2004), one of the key decision problems for advertisers is the selection of keywords appropriate for their campaigns (Abhishek and Hosanagar, 2007; Fuxman et al., 2008).

So far little research has been conducted on the use of brand names in sponsored search (Rosso and Jansen, 2010a). What is the subject of a heated debate in business practice is whether companies should bid on their own brand name or whether this only substitutes clicks from organic listings on the SERP. To answer this question, we apply a non-reactive experimental method and use it in a case study of an online pharmacy that is ranked first with its brand name in the organic search results in Google (Unrau, 2010).

The contribution of this paper is the development and application of a method for measuring the impact of bidding on brand names in a partially controlled experiment. From a theoretical point of view, we make a contribution to understanding keyword selection in blended search. We begin with a review of the literature on the competitive importance of brands in search engine marketing. On this basis we derive four hypotheses which we examine using the methods described in chapter 4. In chapter 5 we discuss outcomes and business implications of this paper and finally give an outlook in chapter 6.

## 2 LITERATURE REVIEW

There are two streams of research which are important for our work. The first studies bidding behavior of competitors in sponsored search. The second stream – blended search – analyses user preferences for organic and sponsored results as well as the interactions between them.

### 2.1 Brand Bidding and Piggybacking

Although brand terms bidding behavior is of great relevance in business practice, there have only been very few scientific publications on the topic. As a first step, a distinction has to be drawn between the bids on the own brand and those on other companies brands. Previous research on sponsored search brand keyword advertising by Jansen and Rosso (Rosso and Jansen, 2010a), which was based on the global top 100 brands included in the well-known WPP BrandZ survey, reveals that 2/3 of the brand names examined were used by other firms while only 1/3 of the brand owners analyzed advertise in the context of their own brand names on SERPs. Bidding on other companies' brand names is referred to as piggybacking, for which three different types of motivation have been isolated: (i) competitive: piggybacking by an obvious, direct competitor; (ii) promotional: e.g. by a reseller; and (iii) orthogonal: e.g. by companies that offer complementary services and products for the brand owners' products. While retail, fast food and consumer goods brands are greatly affected by piggybacking, this practice is rarely observed in the field of luxury brands and technology (Rosso and Jansen, 2010a; 2010b).

The Assimilation-Contrast Theory (ACT) (Sherif and Hovland, 1961) and the Mere Exposure Effect (Zajonc, 1968) are models that offer an explanation of the circumstances under which bids on one's own or third party brand names could be economically valuable. In sponsored search advertising the use of other companies' brand names seems to be advantageous when the perceived difference between the own and other brands is low from a user's point of view (ACT), while the value of bidding on own brand terms depends on the degree of the Exposure Effect, i.e. the display frequency that a brand needs in order to influence the purchasing decisions of users positively. Until now the empirical validations of these models for brand-bidding have been based on user surveys (Shin, 2009) and can therefore be subject to the problem of method bias. However, for the first time we are able to present results that are based on data that were

collected in a non-reactive setup.

### 2.2 Blended Search

From the search engines' perspective, the question is about the extent to which the free presentation of results in the organic part of the SERP counteracts their own financial interests in sponsored search as they generate essential parts of their profits in this area (Xu et al., 2009). While a high perceived quality in the organic search results helps search engines to distinguish themselves from their competitors and to gain new customers, it is exactly this high quality in the organic results that may lead to cannibalization effects between organic and sponsored results (White, 2008).

From the users' point of view, the question has to be asked which preferences and intentions they have when making their choice whether to use organic or sponsored results. Depending on their personal experience of this particular advertising channel and their motivation to search, Gauzette (Gauzette, 2009) shows that consumers do not only tolerate sponsored search as just one more channel for advertising on the Internet but do sometimes even consider these sponsored results more relevant than the organic ones. This is particularly true for transactional-intended queries, i.e. the so-called commercial-navigational search, in which the search engine is used instead of manually typing the URL into the browser's address bar. The same strong preference for sponsored results can also be found in the context of, for advertisers even more attractive, commercial-informational queries where users, although they have a strong intention to buy, are nevertheless still looking for the best matching result for their specific commercial interest (Ashkan et al., 2009).

Along with the multiplicity of intentions that individual users have when typing queries into search engines, there are significant variances of key performance indicators (KPI) that search engines and advertisers pay attention to. Ghose and Yang (Ghose and Yang, 2008) compare organic and sponsored search results in respect to conversion rate, order value and profitability. In fact, the authors note that both conversion rate and order values are significantly higher through traffic that has been generated by sponsored search results than those generated by visitors that have clicked on organic results. It seems that the combination of relevance and the clearly separated presentation of organic and sponsored results as well as their explicit labeling are factors that lead to a greater credibility of the

search engine and thus increases the willingness to click on the sponsored results, which are often not inferior to organic results (Brown et al., 2007).

Studies on the interaction between these two types of results indicate that their simultaneous presence in both the organic and sponsored results leads to a higher overall click probability (Jansen, 2007). More specifically, a high similarity between the content in the respective snippets leads to a higher click probability in the context of informational queries (Danescu-Niculescu-Mizil et al., 2010) while users who are searching with transactional intentions seem to be more likely to click on one of the results when the similarity is low (Danescu-Niculescu-Mizil et al., 2010). Ghose and Yang (Yang and Ghose, 2010) confirm this observation and point out that this effect is much more pronounced in the context of brand-keywords with only little competition (e.g. retail brands / names of online retailers) than it is in a highly competitive environment.

In conclusion, and in contrast to a widely held opinion in business practice it has to be noted that previous research indicates that the placement of advertisements on SERPs is useful for advertisers even where the company is already represented in the organic results for the respective keyword. For the special - and for e-commerce queries most interesting - case of commercially intended queries, these studies indicate that the simultaneous occurrence in both result lists increases the overall probability to be clicked. The verification of these findings to brand terms has however not been accomplished so far and is the key contribution of this paper.

### 3 HYPOTHESES

The following hypotheses are formulated with reference to the online search and buying process. We assume that, when a user searches for the brand name of a company, both organic as well as sponsored results are displayed. These results contain links to the brand owner's website as well as links to other companies' websites. The user has three options to choose from (as shown in figure1): he may click on one of the two links that lead to the website of the company or click on a link that takes him to a different website, which makes him leave the area of observation of the study.

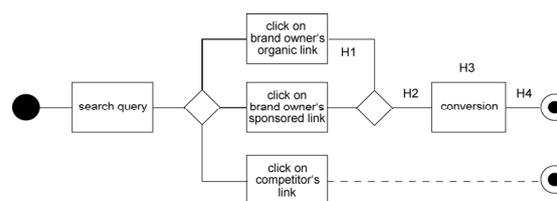


Figure 1: Hypotheses of this study in the search and buying process from a user's perspective.

Due to partial substitution effects, the following hypothesis is almost self-evident as the studied brand occupies the first result in the organic part of the SERP for queries that contain the brand name:

**H1:** The number of visitors from organic search results decreases when brand owners engage in sponsored search for their own brand keywords.

In his paper (Jansen, 2007) Jansen assumes that the simultaneous appearance in the organic and the sponsored results has a positive impact on the overall click rate of the companies' advertisements. This leads to:

**H2:** The overall number of visitors through brand name queries from a search engine increases when companies engage in sponsored search for respective keywords.

It is important to point out again that this statement is by no means self-evident, since it would be possible that the sponsored clicks generated through a brand term advertisement would merely substitute organic clicks that would come for free when no sponsored search is employed. In business practice it is exactly this point that is the subject of an intense and controversial debate between advertisers, agencies, and search engines.

In their study (Ghose and Yang, 2008), Ghose and Yang point out that the conversion rate of commercial-navigationally intended queries is higher for sponsored than for organic results. Consequently, the following hypotheses can be derived:

**H3:** The conversion rate of keyword traffic from own brand keywords decreases when companies decide not to place sponsored search ads for these keywords.

Based on hypotheses H2 and H3 and other things being equal the following hypothesis on the number of sales and revenue derived from brand oriented search can be made:

**H4:** The overall number of sales and the respective revenue increase when companies bid on their own brand names in sponsored search.

Table 1: Brand keyword clicks and revenues (with standard deviations) in the reference period (data are disguised to ensure confidentiality).

<b>Weekday</b>	Mon	Tue	Wed	Thu	Fri	Sat	Sun
<b>Ad status</b>	<b>Off</b>	<b>On</b>	<b>Off</b>	<b>On</b>	<b>Off</b>	<b>On</b>	<b>Off</b>
$\Sigma$ of all visitors	562.3 ± 93.7	543.6 ± 99.9	497.2 ± 101.7	452.2 ± 119.8	376 ± 89.2	283 ± 69.7	431.6 ± 103.2
Revenue in €	8285 ± 2117	7119 ± 1924	6855 ± 2022	6162 ± 1903	4771 ± 1630	3843 ± 1608	7627 ± 2537

## 4 CASE STUDY

The study covers a 14 day test period in which sponsored search for brand keywords is switched on and off on alternate days. Below, the respective states in the test period are called "ON" (sponsored search for brand keywords is employed) and "OFF" days. A full two weeks test period was chosen to allow us to monitor each weekday in both of the two possible states to ensure an acceptable consideration of the well-known weekday variations in e-commerce. The test period does not contain any holidays or other predictable events which could be relevant for the search engine traffic and conversions in this time span.

The company we study uses Google Analytics to collect data on the number and origin of users (organic as well as the sponsored results). In order to leverage existing data as a reference we decided to also use Google Analytics for our study. The reference period (Table 1) stretches from April 2009 to August 2010 with the omission of the test period which was chosen to be from April 12, 2010 till April 25, 2010, starting with an "OFF" day (Monday). The alternation of "OFF" and "ON" in the test period was executed manually each morning at eight o'clock.

Google Analytics assigns recognized re-visitors to the origin of their first visit. For example, a user who first reached the company's website on an "ON" day via a sponsored search result would also be associated with this type of result for his future visits and will thus be assigned to the sponsored search visitors regardless of whether he arrives via an organic search result or by typing the address into browser manually. This is the main reason why there are sponsored search visitors on "OFF" days. To derive statements on the effect of self-bidding, the data from the test period is compared with a reference period that has no overlap with the test period and contains continuous self-bidding activities for the brand keyword. As will be argued in the next section, the main question about the data

is whether the results are statistically significant. Using a Monte-Carlo-Simulation, we examine the validity of the observations especially with respect to hypotheses H2.

Even though the applied method does obviously influence the behavior of involved users and could therefore be categorized as 'reactive' in terms of social sciences, it shares common criteria with non-reactive methods since individual users have no knowledge of the investigation of his behavior.

## 5 RESULTS

### 5.1 Testing the Hypotheses

Hypothesis H1 predicts that the placement of sponsored search ads for the own brand name leads to a substitution of clicks that would have otherwise been generated without costs through clicks on organic results. This is clearly confirmed in the data. The magnitude and significance of this effect is clearly illustrated in figure 2. Comparing the composition of the sum of all clicks generated on "ON" days with the clicks on those days without self-bidding activities, we find more than double the number of organic clicks on "OFF" days (2392 clicks) than on "ON" days (1060 clicks).

It is, again, noticeable, and illustrated in figure 2, that we find sponsored clicks in the data that were generated on "OFF" days where we actually would not expect any. This can be explained by two effects: first, the status change was made manually from "ON" to "OFF" and vice versa every day at eight o'clock in the morning in the test-period so that sponsored search advertisements were served until eight o'clock in the morning even on "OFF" days, accounting for the minor part of these clicks. Second, as argued before the cookie based tracking contributes to the occurrence of sponsored clicks on "OFF" days. It is obvious that the existence of sponsored search clicks on "OFF" days could never generate or strengthen but would on the contrary.

Table 2: Brand keyword visits, conversion rates and revenues in the test period (data are disguised to ensure confidentiality).

Date	04/1 2	04/1 3	04/1 4	04/1 5	04/1 6	04/1 7	04/1 8	04/1 9	04/2 0	04/2 1	04/2 2	04/2 3	04/2 4	04/2 5
Weekday	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun
Ad status	<b>Off</b>	<b>On</b>												
Sponsored visitors	76	376	56	340	64	184	44	436	92	340	108	292	68	252
Organic visitors	488	204	340	124	292	88	396	176	436	248	304	124	136	96
∑ of all visitors	564	580	396	464	356	272	440	612	528	588	412	416	204	348
Revenue in €	8564	5736	4704	6420	3328	3096	3720	8928	7796	6280	5832	4620	1112	7064
Conversion-rate	23%	19%	22%	23%	19%	16%	12%	24%	23%	17%	17%	19%	10%	36%

weaken the findings that are presented in this paper, since they tend to blur a potential effect. In summary, it is clear that these findings are consistent with the expectation of a substitution of organic by sponsored search results (H1).

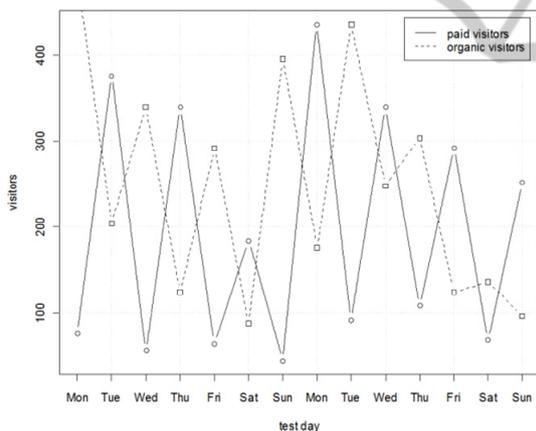


Figure 2: Organic (dashed line) vs. sponsored (solid line) clicks during the test period.

The second hypothesis H2 deals with the question of whether the sum of all sponsored and organic clicks that are generated through the use of the brand name as keyword in search engines can be increased through the use of sponsored search advertising. For this, we compare data from the test period with the data of the reference period (figure 3).

Beginning with an "OFF" day, figure 3 shows the values that were generated on a daily basis in the test period as well as the weekday values of the reference period, both representing the sum of sponsored and organic traffic via the brand keyword from the Google SERPs. The observations of the test period mainly fall into the 50% percentiles of the

reference period and thus follow the overall weekday cycle.

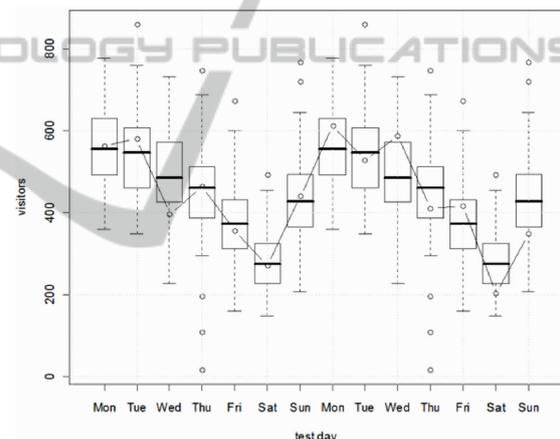


Figure 3: Daily sum of all clicks, generated through the search engine via the brand term in the test period (solid line) compared to the weekend values in the reference period. The boxes contain 50% of the values from the reference period.

However, one can clearly recognize an overlaying pattern in the test period that is most likely driven by the alternation of the status of "OFF" and "ON". Overall, the expected pattern of more clicks on "ON" days than on the surrounding "OFF" days could be observed in 11 of 13 possible daily changes.

What is the likelihood that this pattern occurs by chance? To answer this question we conduct a Monte-Carlo-Simulation, in which 1,000,000 random 14-day samples were generated, each representing a random test period. To generate each 14-day time series, we use the Poisson distribution

and take weekday means from the reference period as the mean of the distribution. What is remarkable is that a fraction of only 0.2% of the randomly generated test periods fit the observed (alternating) pattern with at least 11 or more changes. Employing this measure, it can be concluded with a probability of 99.8% that the placement of sponsored search advertisements for the own brand name actually leads to an increase in the total number of visitors for this keyword.

From the third hypotheses (H3), we would expect the conversion rate to be lower on days without sponsored search advertising than on the other days in the test. Given the average conversion rate of  $22.7\% \pm 0.3\%$  in the reference period (figure 4) we find a lower conversion rate for the test period of  $20.1\% \pm 1.6\%$ , consistent with the study of Ghose and Yang (Ghose and Yang, 2008), who observed a lower conversion rate for traffic from organic listings. It should be mentioned, that due to the low number of transactions per day (and the corresponding statistical error) we cannot observe a consistent difference of the conversion rate between "ON" and "OFF" days as for the overall clicks (figure 3).

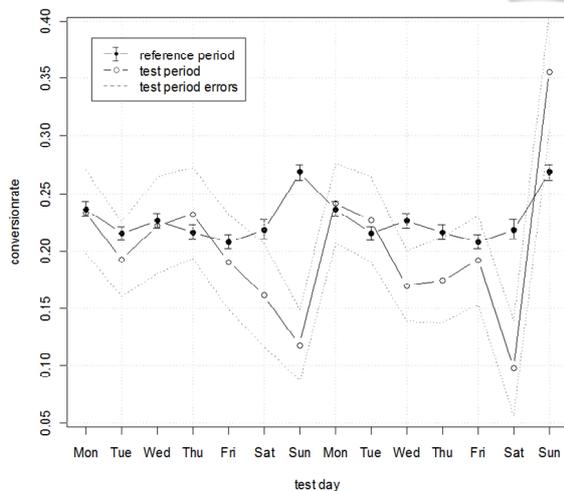


Figure 4: Conversion rates observed in the test period (solid red line) with standard errors vs. average conversion rates with standard errors on a given weekday (solid line) in the reference period.

Following the proven hypothesis H2 (more visitors through sponsored search advertising for the brand name) and the lower conversion rate observed in the context of hypothesis H3, we expect less sales and reduced revenues in the test period. In fact, the revenue via the brand keyword in the test period (€ 77,200) is lower than 70% of all comparable 14-day intervals in the reference period (figure 5).

Considering the revenue trend over the reference period, the relatively low revenue in the test period becomes significant since the revenue in the reference period shows a rising trend as shown in figure 6 (two-week revenue mean after New Year's Eve without the test period: € 99,130 with a standard deviation of  $\pm \text{€ } 6,107.89$ ). A similar reduction of sales can only be observed in the two-week period around Christmas and New Year's Eve 2009 corresponding to observation point 19 in figure 6. Thus, we interpret the lower revenue as a consequence of not employing sponsored search for brand keywords.

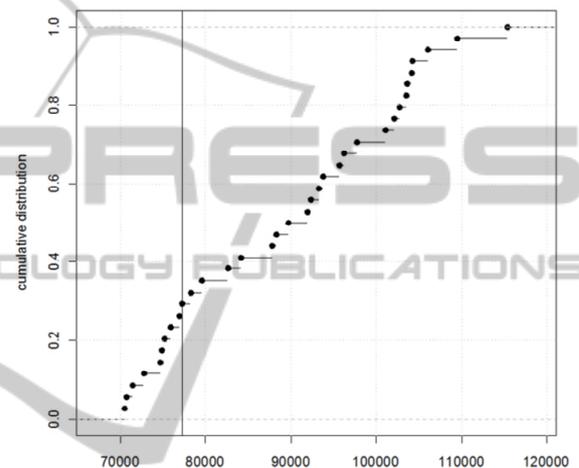


Figure 5: Empirical cumulative distribution of the revenues in the observation period (14-day intervals, containing the reference – as well as the test period), the test period is indicated by the vertical line.

## 5.2 Economic Impact

We now estimate the economic value of sponsored search for own brand names. During the test period each weekday was observed in both states, "ON" and "OFF". The number of additional visitors can be estimated by the sum of all clicks on "ON" days minus the sum of all clicks on "OFF" day in the test period equal the total number of additional visitors for one week. In the current study, this results in 380 additional visitors per week. This is a significant growth of more than 10% achievable through sponsored search for own brand keywords.

Given the average conversion rate of 22.7% (reference period) and an average value per transaction of € 60.88 this leads to an increase in sales of about € 275,000 per year. The average cost per click for the brand keyword in the test period was € 0.03, leading to additional costs of about € 600 per year. To sum up: Even if there were only very moderate margins for online pharmacies we

would recommend the use of sponsored search advertising for brand keywords.

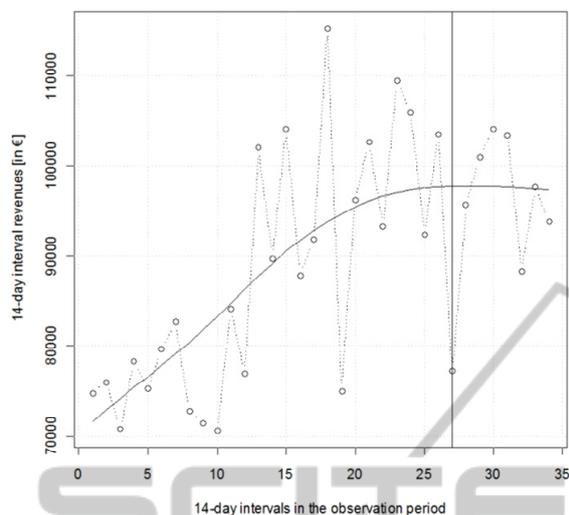


Figure 6: Time series of revenues (14-day intervals) during the reference period (dashed line), including the test period (observation point 27, indicated by the vertical line) and a trend line (solid line).

In general, it seems to be likely that sponsored search for own brands lead to more visitors and accordingly to more sales and higher revenues for the brand owner. The low prices per click for brand keywords and a higher conversion rate make brand name advertising economically profitable in the context of sponsored search.

## 6 CONCLUSIONS AND OUTLOOK

It is plausible to argue that users who search for a specific retail brand name in a search engine have already decided where their search is going to end (the website of the retailer). Yet, evidence from this study suggests that this is not the case for all users. Some users apparently find other advertisements or organic results on the SERP more interesting so that they can get lost for the brand owner if he is not present in the sponsored search results.

We expect that the extent to which the described effect occurs in practice for other companies depends on a number of factors. E.g., the intensity of competition – defined by the number of competitors who are also bidding on the brand name – is likely to have an influence on the observed effect. This is of special interest, because since September 2010 (in the European Union) companies can not ban other advertisers to bid for their brand keywords

(Bechtold, 2011) which will lead to a more intense competition. In the light of this change the present research gains in importance for a whole range of advertisers. Other factors may be the price level of sponsored search clicks, the reputation and brand value of the advertiser and product characteristics. Considerably more research is needed to determine the extent to which these factors have an impact on the described effect. Besides that, the authors currently work on a project that will help to understand user behavior in this context.

## REFERENCES

- Abhishek, V., & Hosanagar, K. (2007). Keyword generation for search engine advertising using semantic similarity between terms. *Proceedings of the ninth international conference on Electronic commerce*, 89–94
- Ashkan, A., Clarke, C. L., Agichtein, E., & Guo, Q. (2009). Classifying and Characterizing Query Intent. *Proceedings of the 31th European Conference on IR Research on Advances in Information Retrieval*, 578–586
- Bechtold, S. (2011). Google AdWords and European trademark law. *Communications of the ACM*, 54(1), 30-32
- Brown, A., Jansen, B., & Resnick, M. (2007). Factors relating to the decision to click on a sponsored link. *Decision Support Systems*, 44(1), 46-59
- Danescu-Niculescu-Mizil, C., Broder, A. Z., Gabrilovich, E., Josifovski, V., & Pang, B. (2010). Competing for users' attention. *Proceedings of the 19th international conference on World wide web - WWW '10*, 291-300
- Edelman, B., Ostrovsky, M., & Schwarz, M. (2007). Internet Advertising and the Generalized Second-Price Auction: Selling Billions of Dollars Worth of Keywords. *American Economic Review*, 97(1), 242-259
- Fuxman, A., Tsaparas, P., Achan, K., & Agrawal, R. (2008). Using the wisdom of the crowds for keyword generation. *Proceeding of the 17th international conference on World Wide Web - WWW '08*, 61-70
- Gauzente, C. (2009). Information search and paid results—proposition and test of a hierarchy-of-effect model. *Electronic Markets*, 19(2), 163–177
- Ghose, A., & Yang, S. (2008). Comparing performance metrics in organic search with sponsored search advertising. *Proceedings of the 2nd International Workshop on Data Mining and Audience Intelligence for Advertising - ADKDD '08*, 18-26
- Hallerman, D. (2008). Search Engine Marketing: User and Spending Trends. eMarketer. Retrieved May 5, 2011, from [http://www.emarketer.com/Reports/All/Emarketer\\_2000473.aspx](http://www.emarketer.com/Reports/All/Emarketer_2000473.aspx)
- Jansen, B. J., & Mullen, T. (2008). Sponsored search: an overview of the concept, history, and technology.

- International Journal of Electronic Business*, 6(2), 114-131
- Jansen, B. J. (2007). The comparative effectiveness of sponsored and nonsponsored links for Web e-commerce queries. *ACM Transactions on the Web*, Volume 1, Issue 1
- Kitts, B., & Leblanc, B. (2004). Optimal bidding on keyword auctions. *Electronic Markets*, 14(3), 186-201
- Rosso, M. & Jansen, B. J. (2010) "Brand Names as Keywords in Sponsored Search Advertising," *Communications of the Association for Information Systems*: Vol. 27, Article 6.
- Rosso, M. & Jansen, B. J. (2010b). Smart marketing or bait & switch: competitors' brands as keywords in online advertising. *Proceedings of the 4th workshop on Information credibility*, 27-34
- Sherif, M., & Hovland, C. (1961). Social judgment: assimilation and contrast effects in communication and attitude change. *Yale University Press*
- Shin, W. (2009). The Company that You Keep: When to Buy a Competitor's Keyword. *marketing.wharton.upenn.edu*
- Skiera, B. (2008). Stichwort Suchmaschinenmarketing. *DBW Die Betriebswirtschaft*, (68), 113-117
- Unrau, E. (2010) Wechselwirkungen zwischen bezahlter Suchmaschinenwerbung und dem organischen Index. Master Thesis, Leuphana University, unpublished
- Tweraser, S. (2010). Änderungen der Google-Markenrichtlinie für AdWords in Europa. *Google Inside AdWords Blog*. Retrieved May 5, 2011, from <http://adwords-de.blogspot.com/2010/08/anderungen-der-google-markenrichtlinie.html>.
- Varian, H. (2007). Position auctions. *International Journal of Industrial Organization*, 25(6), 1163-1178
- Varian, H. R. (2009). Online ad auctions. *American Economic Review*, 99(2), 430-434
- White, A. (2008). Search Engines: Left Side Quality versus Right Side Profits. *Available at SSRN*: <http://ssrn.com/abstract=1694869>
- Xu, L., Chen, J., & Whinston, A. (2009). Too Organic for Organic Listing? Interplay between Organic and Sponsored Listing in Search Advertising. *Social Science Research*. Austin, Texas
- Yang, S., & Ghose, A. (2010). Analyzing the Relationship Between Organic and Sponsored Search Advertising: Positive, Negative or Zero Interdependence? *Marketing Science*, Vol. 29, No. 4, July-August 2010, 602-623.
- Yao, S., & Mela, C. F. (2009). Sponsored Search Auctions: Research Opportunities in Marketing. *Foundations and Trends in Marketing*, 3(2), 75-126
- Zajonc, R. B. (1968). Attitudinal effects of mere exposure. *Pers. Soc. Psycho*, 9(2. Part 2), 1-27