Visual attention to Online Search Engine Results

An exploration into differences in eye movements between consumers searching for product information and consumers searching for product transactions using Google, MSN (now Windows Live Search), Ilse, Kobala, and Lycos

A study by Market Research Agency De Vos & Jansen in cooperation with full service Search Engine Media Agency Checkit

Auteurs

dr. Marnix S. van Gisbergen (Research Director De Vos & Jansen Market Research)
drs. Jeroen van der Most (Project Manager De Vos & Jansen Interactive)
mr. Paul Aelen (Co-founder and Marketing Director Checkit)
Background information

This report contains the results of an eye-tracking study by Search Engine Media Agency Checkit and Market Research Agency De Vos & Jansen concerning the viewing habits of consumers for search engines. It turns out that consumers searching the internet in order to make a transaction view a larger number of search results and are more influenced by branding than consumers searching for information.

Although previous studies provide information about viewing patterns for online search (e.g., Salojarvi, Kojo, Jaana & Kaski, 2003; Granaka, Joachims, & Gay, 2004; Klockner, Wirschum & Jameson, 2004), there has not been a study which distinguishes between search behaviour aimed at information and at effecting a transaction. According to Broder (2002) about half of the search queries are aimed at gathering information and the purpose of about one-third is effecting a transaction. Consumers who are searching for a transaction are particularly important for advertisers. A consumer searching for a possibility to buy a product is closer to the act of buying than a consumer who is still gathering information.

It is likely that consumers show different viewing habits when searching for a transaction than for information. Consumers aimed at a transaction possibly search more elaborately in online search engines than consumers searching for information. When you are searching for a transaction you probably will view more search results and take more time to view the results than when you are searching for information. After all, the importance of a proper choice from the results appears to be greater. It is also likely that transaction searchers focus on other aspects than information searchers. Transaction searchers are probably more focused on words which generate a feeling of familiarity, such as a brand, and information searchers are more attracted to words which show independence, such as the possibility of comparing products.

Eye-tracking is not often applied for usability research for websites. Only a small part of the cognitive process can be made clear on the basis of click behaviour. For instance, we do not know why click behaviour for a hyperlink or banner decreases (or increases). We also cannot tell how many (sponsored) search results a consumer views before making a choice (clicking).

Aim

The aim of this study is to discover as many differences as possible in viewing habits for online search engines between consumers searching for information and consumers searching for a transaction.

Figure 1: Eye movements on a page with search results dots (fixations) are spots which have been viewed. The lines are movements of the eye between the fixations.
Research Method

The eye movements of search engine users have been researched when viewing websites as a result of a list of queries. A distinction has been made between the viewing habits of (A) searching for information and (B) effecting a transaction.

Tools

De Vos & Jansen Interactive used an advanced infrared camera system (IviewX-RED-III), with which eye movements can be measured in a natural and familiar situation without physical discomfort (head clips). The research situation is therefore comparable to how people use websites at home. An infrared camera accurately registers the spot of the eyes on the website (deviation of 0.5-1 degree), and the spot of the eye is measured 50 times per second (60 Hz). A camera compensated for the head movements (space around the head to move freely within a virtual box of 40cm to 80cm). For the analysis De Vos & Jansen used the GazeTracker. An advanced software package, which makes it possible to register and visualize eye movements while people are naturally navigating through websites.

Attention: what do we measure?

Eye movements consist of fixations and saccades. A fixation is a short relative standstill of the eye, when a person consciously processes information. The longer the time of the fixation, the more the consumer is trying to process the information. Several studies show that fixations are longer on areas valued high on the information scale. A saccade is a quick movement of the eye between fixations. Information is also processed during saccades, although often unconsciously.

Data

Five search engines have been used to supply the webpages for our study Google, MSN (now Windows Live Search), Ilse, Lycos and Kobala. The search engine Kobala was added in order to study the influence of the absence of sponsored search results. The respondents searched five popular e-commerce products: a loan for a renovation, a second-hand car, a car insurance, a airline ticket to New York and a Philips mp3-player. In total 25 different pages with search results were studied with on average 15 search results per page. The average number of organic search results is 10. When shown, there are 3 sponsored search results on average at the top of the page. When a page shows sponsored search results at the side, there are 5 results on average.

Figure 2: The Checkit National Search Engine Monitor
Respondents
Fifty consumers participated in this study. The participants are between 17 and 24 years old and use the internet six days a week on average. The majority (90%) effected a transaction at least once on the internet and 17% regularly buys on the internet. Books and airline tickets are bought most often on the internet. On average the participants agreed a little with the posing ‘I am annoyed by advertisements on websites’. All respondents use Google. 79% of the respondents has used search engine Ilse, 48% has used MSN and 29% has used Lycos. Kobala was not known to the respondents.

Design
The respondents were told that they were participating in a study about consumer surfbehaviour on search engine sites (as in Aula, Majantra & Raiha, 2005). Every respondent was shown five pages in random order (a page of every search engine). Half the respondents received queries aimed at a transaction. The other half received queries aimed at gathering information. Between the groups are no significant differences concerning gender and age, experience on the internet and experience and preference to the different search engines. Two example queries aimed at a transaction and at information:

“You would like to contract a loan for a renovation. On the next page you will find links to websites on which you can contract a loan. Select the website on which you would like to contract the loan by clicking on the link to the website.”

“You are searching for information about loans for a renovation. On the next page you will find links to websites about loans. Select the website on which you would like to search information by clicking on the link to the website”.

Apart from the actual search behaviour, the motives why people click on a certain search result have also been studied. In a written questionnaire, after the eye-tracking session, people were asked to explain their reasons for clicking on a certain search result.

Figure 3: IviewX-RED-III + Gazetracker
Results

Range: organic results viewed most often

The sponsored results on the right side reached a relatively small number of respondents. 98% of the respondents viewed the organic results, 95% the sponsored results at the top and 31% the sponsored results on the right.

Number of viewed search results: 9

On average are 9,2 results were viewed before the first click was made. The average number of viewed organic search results is 6,6. Of the sponsored results at the top and on the right respectively 2,6 and 0,6 results were viewed.

Average viewing duration: 10 seconds

On average, consumers spent 10,4 seconds on a page to view the search results. Organic results were viewed 8,8 seconds on average. The sponsored results at the top and on the right were viewed less long: 2,0 and 0,2 seconds.

Average viewing duration per result: 1,1 second

Advertisers should communicate within the consumer in a very short period of time. The average viewing duration for a search result is 1,1 second. The average viewing duration for an organic result is 1,3 seconds and for a sponsored result at the top 0,8 second. The sponsored results on the right were viewed only short (average 0,2 seconds).

Transaction searchers view more results

Consumers searching for a transaction viewed more results than consumers searching for information (illustrated in Table 1 and Figure 4 and 5 on page 6). The total viewing duration is therefore also longer when one is searching for a transaction. The difference in viewed search results can be largely attributed to the increase in the number of viewed organic results.

<table>
<thead>
<tr>
<th></th>
<th>Total Viewing Duration</th>
<th>Number of Results</th>
<th>Viewing Duration per Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transaction query</td>
<td>11,4</td>
<td>9,9</td>
<td>1,2</td>
</tr>
<tr>
<td>Information query</td>
<td>9,4</td>
<td>8,5</td>
<td>1,1</td>
</tr>
<tr>
<td>Total</td>
<td>10,4</td>
<td>9,2</td>
<td>1,1</td>
</tr>
</tbody>
</table>

Table 1: Differences in search behaviour between consumers searching for a transaction and searching for information.

The average viewing duration per search result did not show a significant difference between consumers searching for a transaction and those searching for information. The extra viewing duration for transaction queries does not result in giving more attention to a search result. Consumers start at the top of the page, for transaction pageviews as well as for information pageviews. A very small number of people skipped one or more sponsored results at the top and starts with the first organic search result. After that, the eye moves down and during this movement the information searchers quit their search. The consumers who viewed the bottom search results were searching more often for a transaction than for information.

Differences between search engines

No important differences were found between the search engines. The total viewing duration for Google seems to be less than for the other search engines though (9,6 seconds). Kobala shows fewer results per page, 10 on average, due to the absence of sponsored results. This could
be an explanation for the smaller number of viewed results at Kobala (7.3 on average) and consumers look at the results a little longer (1.5 seconds).

**Click motives: brand versus keyword**

There are seven motives why people click on a search result. An important reason to click is (1) the familiarity with and reliability of the website or organization. Keywords which refer to a brand are therefore very important. (2) A high position in the search results also creates trust and suggests to the respondents that the information is recent. (3) A third important reason for clicking is the presence of the keyword in the search result. (4) Consumers are also looking for certain website services such as the opportunity to read user experiences or to compare different products. (5) (Indirect) price information is important: especially keywords which refer to ‘low costs’. (6) The announcement that there is a large variety of products can also be a reason for respondents to click on the search result. (7) Finally, consumers seem to avoid results with aggressive advertising. Preventing (too) many capital letters and exclamation marks can positively influence click behaviour.

A consumer with an information query is more inclined to click on a search result because the keyword is present in the search result. Consumers with a transaction query however will sooner search for a known and trustworthy name (brand) in the search results.

**DO’S AND DONT’S**

It is clear that consumers view relatively many search results before making a choice to click on a result. Search engines are therefore an important tool to generate (brand)exposure for (potential) consumers. A high position in the (sponsored) results is also vital in order to receive attention. The sponsored results on the right receive less attention. It is also important to give enough thought to the contents of search result because most consumers take a very quick look at a search result. It is of great importance that the target audience is motivated in a single second to click on a link to the website. This is an important task for the copywriter: the message has to be processed quickly, knowing that references to keywords and the brand are important reasons for clicking on the link.

Respondents searching for a transaction show a different viewing behaviour than respondents searching for information. The results at the bottom of the list of search results are also valuable because consumers who are searching for a transaction view more results. These results are mainly viewed by consumers who are planning to buy on the internet.
Figure 4: Eye movements of a person searching for information on a page with search results. The hills are the spots which the person has looked at. The higher the hills, the longer the person looked at the spot.

Figure 5: Eye movements of a person searching for a transaction on a page with search results. The hills are the spots which the person has looked at. The higher the hills, the longer the person looked at the spot.
References

Checkit is an independent full service Search Engine Media Agency. Search Engine Marketing is the easiest way to be optimally findable on the internet. Checkit is the specialist and market leader on Search Engine Marketing. Because of our years of experience and expert knowledge we know how to realize maximum results from your campaigns.

De Vos & Jansen Interactive (DVJ Interactive) is a unit of the De Vos & Jansen Marketinggroup aimed at enterprises which serve their customers online. By combining online applications with years of experience in communication research DVJ Interactive can optimise both your offline and online marketing activities. DVJ Interactive shows if you are realising your marketing goals.