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SEARCH ENGINES AS A NEW TYPE OF STAKEHOLDER OF CONTEMPORARY ORGANIZATIONS

Abstract: This paper deals with the problem of the impact of search engines on the functioning of contemporary organizations. In the first part an overview of the situation connected with the growing role of search engines in the business environment of contemporary organizations and the consequences of this process is briefly provided. The second part is focused on an analysis of the two basic forms of influence of search engines on contemporary organizations: direct and indirect. Finally the most significant conclusions and suggestions are provided.

1. Introduction

The extremely dynamic development of the electronic environment connected with the Internet and the increasingly interrelated next-generation mobile telephony development, has caused continuous and progressive change in the business environment of modern organizations [Wielki 2006, pp. 213-221; 2007, pp. 633-643]. The changes relate to numerous aspects connected with company stakeholders and the ways they function and affect an organization. The structure and composition of stakeholders has also changed. In addition to typical stakeholders such as shareholders, customers, suppliers and distributors, employees or local communities (see [Friedman, Miles 2006, pp. 13-14]) the circle of entities known as "special interest groups" (see [Freeman 1984, p. 21) has been growing continuously, thanks to the development of the electronic environment and the availability of various tools based on internet and mobile technologies. As a result, it has become more and more difficult for organizations to determine which entities consider themselves to be stakeholders and will therefore try to exert influence on them [Friedman, Miles 2006, p. 8].

Simultaneously, from the stakeholder theory point of view, a previously unknown situation has started to transpire. Namely, a group of global stakeholders,

which are common for almost all organizations, have emerged. They are known as search engines.

The situation where the stakeholders of an organization (e.g. customers or business partners) stopped functioning locally, in fact started to be a reality as the processes of globalization of the contemporary economy took hold and the modern phenomena of outsourcing or teleworking connected with it. But never before has there been a situation whereby the majority of organizations have had a small group of common global stakeholders. Scenarios like this have increasingly become a reality in recent years with the rapid growth in importance of search engines. This group of entities, and Google in particular, are emerging as the common, global stakeholders in most organizations operating in the contemporary economy. The ways they affect or potentially affect organizations mean that they perfectly fit the notion of a stakeholder of an organization, regardless of the definition used. This particularly relates to those which underline the "symmetry" of the mutual impact of an organization and its stakeholders on one another (see [Friedman, Miles 2006, pp. 5-8]). In the case of search engines, a particularly important aspect is that they are emerging as entities which are defining, to large degree, the new architecture of the business reality in the digital world [Hof 2007, pp. 46-55]. This is especially the case with Google which conducts over two-thirds of all global Web searches [Breen, Hamel 2007, pp. 101-102]. The deepening interrelation between the on-line and off-line worlds means that search engines also influence the entire contemporary economy.

Various statistics prove how deep and expansive this impact is. Currently about 90% of Americans use search engines and simultaneously over 80% of them visit Web sites as a result of this usage [Edelman 2007; eMarketer 2007]. Additionally over half of consumer e-commerce transactions conducted in the American marketplace originate from a search engine listing [Bruemmer 2006].

A comparison of the above mentioned data with data from the end of the previous decade clearly shows how, over a short period of time, their importance and impact on the contemporary economy has grown. According to Forrester Research, in 1999 57% of American consumers used search engines to locate a Web site. Additionally, in June 1998 the number of visitors to the most popular search engine (at the time it was Yahoo!) was estimated at 26.5 million [Wielki 1999, pp. 186-187]. At the end of 2007, the unique number of visitors using the leading search engine (Google) was over 132 million per day, while the monthly number of searches queries performed through Google by U.S. Internet users only was nearly 10 billion [Burns 2008; Davenport, Iyer 2008, p. 61].

In view of this deepening dependency of the contemporary economy on search engines, it is very important to identify and systematize, as new, global and increasingly significant stakeholders, the various forms of their impact on organizations. Understanding the manner of the influence of search engines is crucial for contemporary organizations in the context of their increasing involvement in the utilization of the electronic environment and the emergence of search engines as a key element

of it. The above mentioned issues are strictly connected with the answers to the first three of eight questions by Freeman concerning an organization's stakeholders [Freeman 1984, p. 92]:
– who are our current potential stakeholders?
– what are their interests/rights?
– how does each stakeholder affect us (challenges and opportunities)?

2. Types of the impact of search engines on organizations

Search engines can affect organizations in numerous ways. Generally, two basic types of impact can be distinguished (see Fig. 1):
– direct,
– indirect.

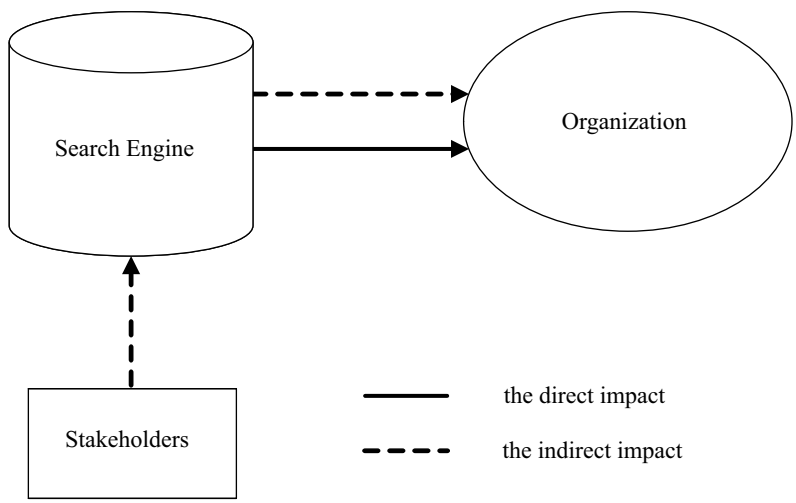

Figure 1. Types of search engine impact on organizations
Source: author's own.

2.1. The direct impact

The direct influence is connected with a search engine itself and its potential impact on an organization and the realization of its goals. Typically it relates to seven types of situation:

1. Changes of the search algorithm used by a search engine.
2. Lowering the position of the Web site in the search engine index.
3. Exclusion of the Web site from the search engine index.
4. Interruptions in a search engine's functioning.
5. Flagging Web sites as a potentially dangerous.

6. Utilization by search engines of page-catching technologies.

7. Accidental exposure of the search data.

The first four types of impact are strictly connected with the key issue, from the point of view of contemporary organizations, regardless of the sector in which they operate, which is "findability". This is the ability to be easily found by your stakeholders, which is nowadays very strictly connected with your ranking in search results. A phenomenon which has became a "kind of currency" (see [Mann 2006]).

When changes to the search algorithms are considered, it seems that this is the most commonly noticeable form of direct influence, at least by organizations. It relates to the fact that they are increasingly dependent on rankings in the search results of the most popular search engines. Simultaneously search algorithms are constantly being optimized. In the case of Google, "rewarded" elements are: unique content; amount of content; frequency of updating; the number of external links; the global popularity of the linked sites or popularity of the site within its topical community [Collett 2007a; 2007b].

An important reason for the periodical changes to the search algorithms is the attempt to eliminate search spam i.e. those Web sites whose position on a search engine's results pages has been artificially boosted by various means in order to manipulate search engine spiders [Battelle 2006, pp. 117-118; Collett 2007b].

It is very often the case that the implementation of changes in search algorithms very strongly affects those companies where the number of customers visiting their Web sites and the resulting sales levels, is strictly connected to their rank in search results. For such entities a significant drop in this ranking translates very often into serious consequences concerning their market position [Collett 2007a]. A good example of such a correlation is the situation faced by the company 2bigfeet.com, which specializes in selling large shoes for men and where 95% of its orders are generated through search engines. A modification of the search algorithm by Google at the end of 2003 caused an almost complete collapse of sales overnight [Battelle 2006, pp. 116-118].

The significant lowering of ranking in search results is not only a side effect of the search algorithms modification process; it can also be an intentional action of the search engine, perhaps as punishment for the application of forbidden optimization techniques. In the case of Google, a Web site can be moved from page 1 or 2 onto page 10 or even 14 (see [Collett 2007b], which results in an organization becoming, in practice, either impossible to find or overlooked by browsers.

The third, and the most drastic, type of direct impact of a search engine is linked with attempts by an organization to manipulate search results. It is the removal of a Web site from the search index of a search engine. The case of KinderStart.com is a very good exemplification of how severe the results of such an action by a search engine can be, as far as the functioning of an organization and traffic on its Web site are concerned. As a result of its removal from the Google index starting in March/ April 2005, the traffic on the AdSense Web site fell about 70% and the drop in its

revenue reached 80% [Brodkin 2007; Perez 2006a]. The same situation has also been periodically faced by BWM [Gohring 2006].

The fourth type of direct impact, connected with the ability to find an organization on-line, relates to the real challenges and dangers which result from breaks in a search engine's functioning, particularly with the most influential ones, such as Google. In the present situation of deepening dependency of both consumers and organizations on search engines, a significant interruption in their functioning would, in the current market conditions, lead to big and difficult to estimate, losses for the economy as a whole and chaos on the marketplace (see [Carr 2008, p. 178). Potential sources of interruptions are terrorist attacks; various types of cyberattacks and also more mundane issues such as electricity shortages, natural disasters or technical problems [Hof 2007, p. 46-55; Carr 2008, p. 178]). The recent Internet service disruption faced by the Middle East and India clearly showed how severe the impact of various types of accidental events on the functioning of organizations can be [BBC News2008].

The next type of direct impact of search engines on organizations is connected with the flagging of Web sites as containing malicious, and thus potentially dangerous, software. In the case of Google, when the search engine identifies a particular Web site as being infected by malware, an interstitial page with a warning appears when a user clicks on the link within Google's search results. In order to continue the user has to manually type the Web site address.

This kind of behavior is a source of dissatisfaction for numerous organizations who are convinced that their Web sites are groundlessly flagged as dangerous, which destroys their reputation in the eyes of their customers and business partners (see [Kirk 2007]) and can translate into real business losses.

The sixth form of direct impact is connected with the page-caching technologies utilized by major search engines. Potential dangers result from the fact that even if a page containing malicious content has been cleaned up or removed from the Web site, it will stay in the search engine's cache until the search engine bots crawl the page again. So the link offered to a user leads to the removed or cleaned up cached page. The same situation takes place when the page has been blocked by a URL filter or has been placed on a black list of ISPs [Kent 2007].

The last type of direct impact relates to the dangers connected with the potential leakage of the search data gathered by search engines. A situation which took place with AOL proves that this is not merely a theoretical scenario. In August 2006, the personal search data of 658,000 people was accidentally exposed and made publicly available on-line to all who were interested, including hackers and cybercriminals [Gonsalves 2007; Keen 2007, p. 156]. As the biggest search engines are currently everyday tools used by all types of organizations, a situation like this is a source of huge potential danger, because all of the stakeholders are able, thanks to such leakages, to gain easy access to various types of information such as the current area of a company's interest, current projects, etc. A scenario like this is very likely as

search engines become more and more widely used in competitive intelligence processes [Friedman 2005; Fuld 2006, p. 209].

2.2. The indirect impact

The second type of influence of search engines is the indirect impact. It is connected with the utilization by other stakeholders of search engines as a tool for affecting an organization and its resources. This type of impact relates to four basic situations:

1. Generating click frauds.
2. Usage of competing organizations' trademarks as keywords in search engines.
3. Utilization of search engines for malware attacks.
4. Manipulating search rank results.

The first case of indirect impact is connected with the fact that the search engines' business model is based on pay-per-click approach, so they earn money when someone clicks the advertisement (paid link) displayed next to the search results (Google AdWords) or alternatively on advertisement placed on the Web site of one of the affiliated publishers, who jointly run the Google AdSense program. In the latter case the advertisement is placed on the particular Web site or blog and it is adjusted to its content. The owner receives money when someone clicks it.

However according to the results of various studies, a significant feature of this type of clicks is that they are fake, i.e., they were not the result of interest of the particular advertisement but they were generated by especially paid persons or robots. The purpose of such action is twofold. It can be either an attempt by other companies to hurt their competitors (click frauds cost them their money) or an action by the owners of Web sites that run such advertisements to receive more money as a commission. In both cases, the victims are advertisers who pay for fake clicks, worthlessly spending part of their advertising budget and generating no business benefits for their organizations. It is commonly estimated that 10% to 15% of all ad clicks are fake, which translates into about $ 1 billion annually. It is also assessed that about $300million to $500 million can be captured by the "click-fraud industry" [Elgin et al. 2006]. Simultaneously, according to the estimations made by Click Forensics, an independent click fraud monitoring company, the problem is increasing. It assessed that during the fourth quarter of 2007, the click fraud rate (CFR) reached 16.6%, which was a significant increase compared to the same quarter of the previous year, i.e. 14.2% [ClickForensics 2008; Hines 2007].

It is worth mentioning that despite the fact that search engines also make a profit on fake clicks (in the case of Google 99% of its sales comes from on-line advertising [Carr 2007]) this phenomenon is actually a source of a huge problem for them. It is linked to a drop of confidence by organizations in this form of advertising and the resultant reduction in the amount of money spent on it, which ultimately effects a search engine's revenues. Because of this fact some of them undertake actions

aimed at compensating the losses incurred by advertisers [Battelle 2006, p. 139; Elgin et al. 2006; Grynkiewicz 2006; Perez 2006].

The second type of indirect impact is the utilization of a competing organization's trademarks as keywords in search engines. This situation means that even though a particular word, term or phrase is the trademark of a company, it doesn't mean that when a user performs a search in the search engine (e.g. Google) using this term or phrase he or she will be directed to the target Web site. In practice, very often competitors buy an organization's trademarks as AdWords keywords, paying for them more than the company which is its legal owner. Consequently a potential customer performing a search for these words sees advertisements from competitors [Battelle 2006, p. 135; Rosencrance 2007].

The third case of indirect impact is connected with the utilization of various entities for malware attacks. In a case of this type, users searching for various legitimate phrases, see links near the top of the results listings which lead to malicious Web sites which host malware. According to a study by McAfee, in the case of five of the top search engines this problem concerns 4% of the search results, however it is significantly higher with reference to sponsored results such as (6.9%) in men and comparison to organic results (2.9%) [Edelman 2007]. Simultaneously, there are also cases of massive attacks of this type (see [Keizer 2007]).

The fourth case of indirect impact relates to the manipulation of search rank results as displayed by the search engine. It is an action based on linking as many Web sites as possible to the site, whose search rank should then be artificially increased [Keen 2007, p. 99]. This type of action is called "Google bombing" and this term was coined by A. Mathes (see [Hiler 2002]). Their intentions can be entirely harmless (as it was intended by the inventors of this approach) but they can also have measurable business results, as was mentioned earlier, because a ranking in search results has become the new kind of currency of the new economy.

3. Conclusions

The changes taking place in the business environment of contemporary organizations are permanently complicating the already challenging conditions of their functioning. The dynamism and scale of the transformations is so significant and multidirectional that it has become more and more difficult for all entities to encompass all the emerging elements and issues.

One of the manifestations of these changes is the role which search engines have begun to play, not only in the on-line environment, but in the whole global economy. Although there are relatively young elements of it, its role is permanently growing at a quick pace. Search engines are becoming more and more clearly global stakeholders of contemporary organizations, exerting growing influence on them and often determining new directions of their development. Hence, with their development and growth in importance of the traditional approach to defining organizations' stakeholders should be revised.

Simultaneously, because of the power of the impact of search engines themselves and their potential to be used by other entities as a tool to exert an influence, they should be treated by practically all organizations as a new but very important element of their business environment. It is vital that the functioning of search engines, their influence and role in the marketplace are particularly carefully monitored, just as with all other key stakeholders.

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