

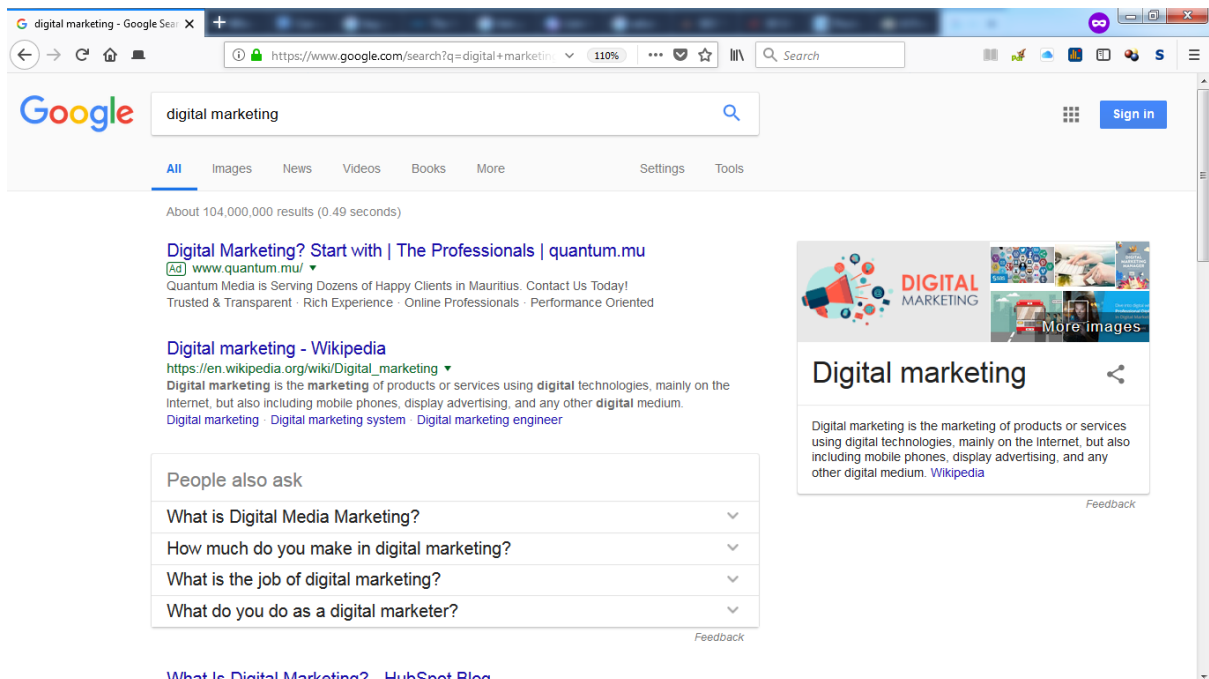
INTRODUCTION - SEARCH ENGINE

There are quite a large number of search engines available on the internet. Examples of search engines are Google, Bing and Yahoo. Search engines are maybe the most common form of using the internet for us. Suppose we are looking for a restaurant which is open and serving Italian, we just type it on the address bar of our browser and a search engine will do the work for us. It may return us a large number of results from which we can choose.

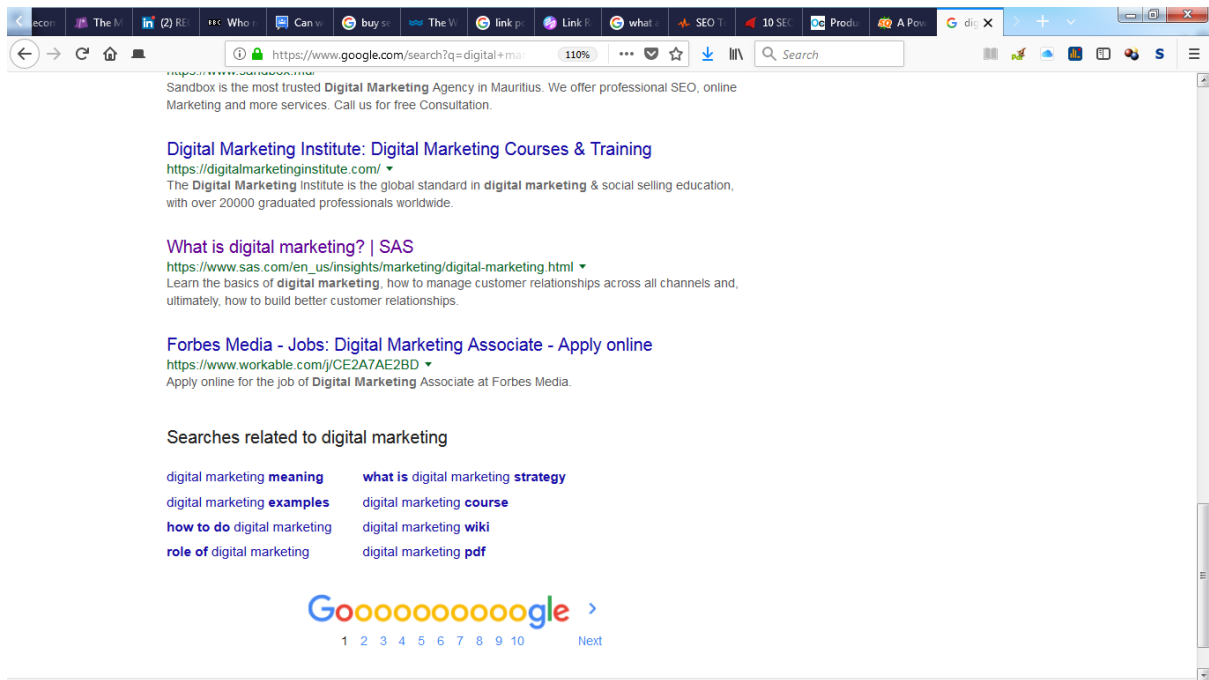
➤ WHAT IS SEARCH ENGINE OPTIMISATION (SEO)?

SEO is the process of improving the quality of web pages so they rank higher in n the list of results as returned by a search engines. This list is also known as the Search Engine Result Page (SERP).

For example, suppose I am searching for materials on “Digital marketing”. There are many webpages talking about this topic. If I type Digital marketing on the google search engine, I get about 100,000,000 results as shown below.



The results of this search are usually arranged in ten (10) results per page. The ranking of these results is very important as none will have time to sift through this number of pages relevant to “digital marketing” as shown below.

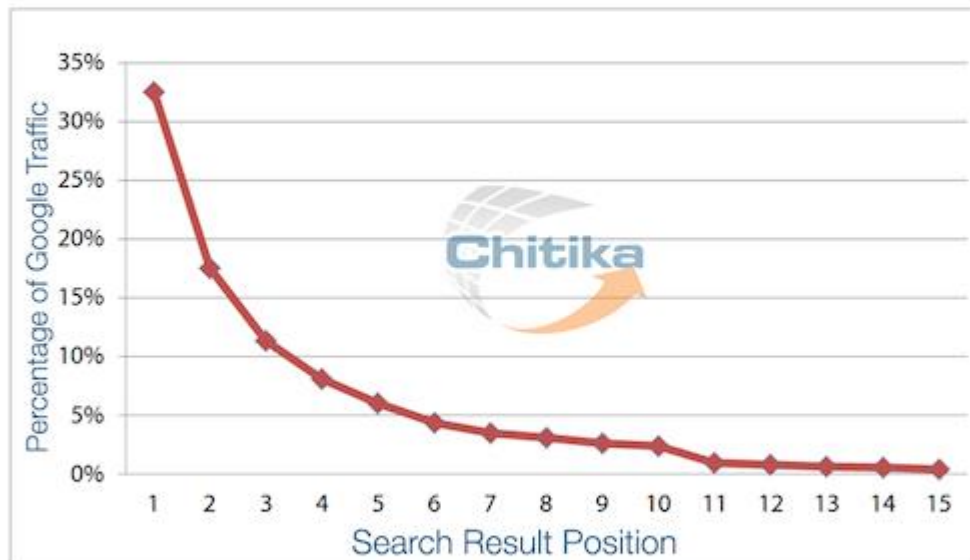


Users tend to stick to the first few results on the first page as reported by Search Engine Watch (<https://searchenginewatch.com/sew/study/2276184/no-1-position-in-google-gets-33-of-search-traffic-study>, accessed 20th April 2018).

A graphical representation of their result is:



Percentage of Traffic by Google Results Position



Data Driven by Chitika Insights June 2013

Data is representative of Google search traffic within the U.S. and Canada only

(Source: <https://searchenginewatch.com/sew/study/2276184/no-1-position-in-google-gets-33-of-search-traffic-study>, Accessed 20th April 2018).

So, we see the importance of being at the top position in a search result: more users will visit our webpage and probably get interested with our business.

Hence, we have to optimise our webpage for it to appear on a top position.

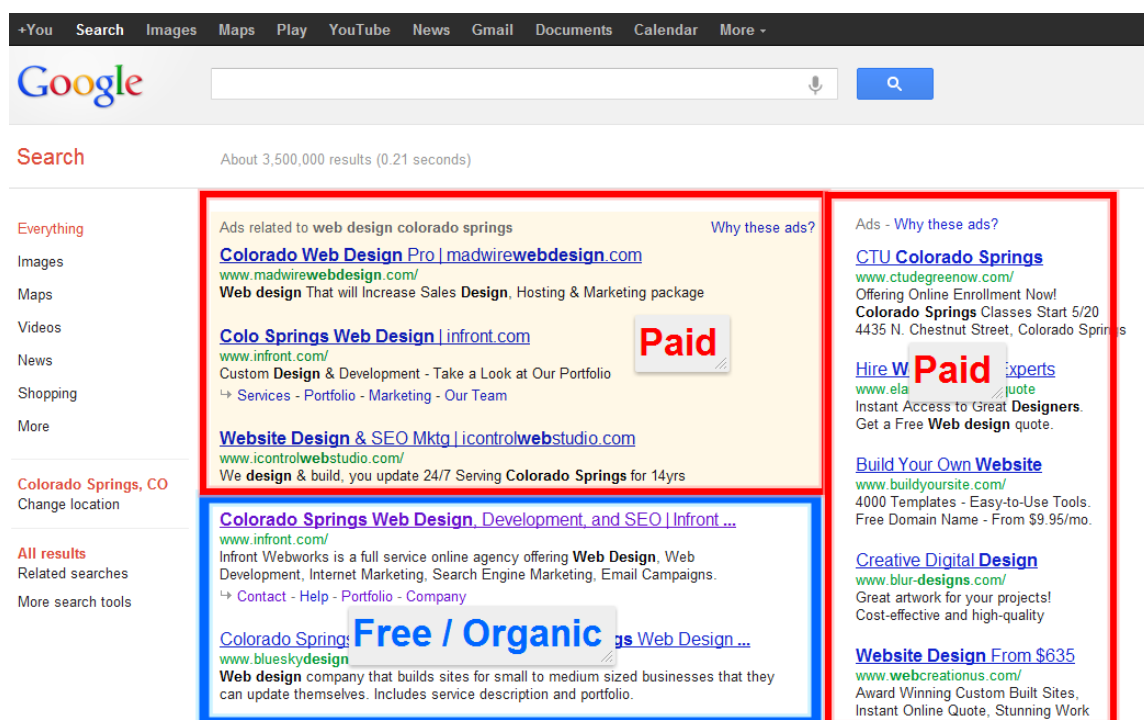
On the other hand, it is very unlikely that a webpage dealing with “digital marketing” and appearing in a top position for a search also appears for the same top position for a search for “free lunch” for example.

We say that our webpage has been optimised for a certain targeted keyword, which in this case is “digital marketing”.

Right now, we are looking at the “Organic” search results of a search engine. As a user, I do not pay to use the search engine. The owner of a Webpage also does not pay to appear on the list of results. These results create the “organic traffic” when we click on them. Organic traffic is widely considered the most valuable traffic source for several reasons:

- Search engines direct the highest amount of traffic and they are the most trusted source for people searching for information, including a purchase.
- Organic SEO is the most popular form of Search Engine Marketing (SEM).

If we look more closely at our search results we see that our screen is composed of several components as shown below:



(Source: <https://www.infront.com/blog/the-infront-blog/ppc-vs-seo-search-engine-marketing-explained#ppc>).

The two (2) main parts of the screen are:

- A free (or organic) search result part, and
- A Paid (or sponsored) part usually preceded by the word Ad, Paid or Sponsored.

The free/organic part is the result of SEO while the Ad/Paid/Sponsored part is the result of SEM.

SEO PROCESS

It is the process of optimisation of a webpage for it to appear on the top position of a search engine during a search, or the first page or even increasing its rank in the search list is known as Search Engine Optimisation (SEO). Search engines are very particular about their rankings of webpages and ranking in the first page for a keyword indicates that the webpage's content is high quality.

Moving up in the rankings is difficult and takes time, but results on the first page of Google (The Top 10) receive most of all search traffic on Google as stated above. So, there is much benefit to be on the first page or even in first position for a business.

The key factors which can play a part in the ranking of a webpage are the following, among others:

- Internal link structure.
- Link popularity/ relevance.
- Crawlability/ optimised code.
- Content relevance.

6.5 INTERNAL LINK STRUCTURE

Internal Links are hyperlinks; they are words which are usually coloured in blue or red and which send us to another webpage when we click on them. They may also point at webpages on the same website.

These types of links are useful for three reasons:

- They allow users to navigate a website. Users can move from the front page to other pages of interest and then return back or go to another page.
- They help establish a certain hierarchy for the given website. Webpages are organised in term of topics and subtopics same as in the menu of a word processor. Some webpages will only be accessed through links in their parent webpages.
- They help spread the importance or search rank around websites. The importance of a webpage is carried to its connected webpages, hence, they inherit a portion of its importance.

LINK POPULARITY/ RELEVANCE

Link popularity refers to the number of inlinks that point to a given webpage. Some other names for inlinks are incoming links and backlink. Link popularity used to be an important figure for search engines. In other words, the more people refer to me the more importance I get. Similarly, the more webpages have a hyperlink pointing to my webpage, the more importance this gives to my webpage-

Another associated concept is “link relevancy”. A webpage must be linking to pages that are relevant to its area of business. For example, the more webpages dealing with “digital marketing” link to my webpage, my importance increases since these links are relevant to the field. Similarly, if I place links to webpages on “digital marketing” my own importance grows. This is similar to the outreach process. It means that I am connected in the field. We can contrast it with a webpage on “free lunch” pointing on my digital marketing page.

CRAWLABILITY/ OPTIMISED CODE

Search engines build a database of keywords and the addresses of the webpages containing those keywords. The process is known as indexing as it works similar to the index we find at the end of books. Search engines usually boast of the number of webpages indexed. Usually the larger number of webpages indexed by a search engine, the more successful it is.

According to Wikipedia Google has an index of 40 billion (https://en.wikipedia.org/wiki/Comparison_of_web_search_engines). But the size of the index is only one factor accounting for the success of a search engine.

On the other hand, to be able to build the index, search engines need to see content of webpages. They also need to have access to a crawlable link structure. It is the website link structure that lets search engines browse the whole website, to be able to visit all of the pages on a website. A webpage which cannot be visited will not be indexed and hence will have no chance on appearing on a search list. If a webpage takes a lot of time to load, it will not be indexed as well as the search engine will give up reading it. Examples, are pages with a lot of animation or a password protected page.

CONTENT RELEVANCE

The content of a webpage refers to the text it contains. The text is transformed into a list of keywords. The keywords are words that appear frequently in the page. These keywords are used for ranking by search engines. A website is indexed according to its keywords. On the other hand, common words such as 'the' 'and' 'of' are ignored by search engines. So, if we want to rank high we must write keyword-rich text. Title tags and name of files are also important in optimising rankings.

TECHNICAL ASPECTS OF SEO

Businesses as well as other organisation devote much time and effort to reach a top position in a search. There are experts in the field of SEO whose role is to promote a website. These IT specialists look at a number of features and metrics and optimise them to promote a website in search rankings:

- They do a comprehensive Website Analysis. They ensure that the webpages contain the keywords indexed by search engines.
- They keep track of keyword trends.
- They keep track of the visits of search engines on the organisation's website, and check whether all webpages are visited. They take corrective actions if need be.
- They keep track of rankings.
- They keep track of visitors to the websites. Their actions on the website are monitored so as to enhance their experience and maximise business objectives.
- They submit addresses to major search engines.
- They analyse the source code in webpages to ensure that they load properly.

The above is not an exhaustive list of their role as will be highlighted as we proceed.

As mentioned in **Section 6.4** several factors influence the ranking of a webpage. So, the SEO specialist has to keep track of all these factors and quite a large number of other parameters as well.

MEASURING SEO SUCCESS

The ultimate aim is to appear in the first position for a search. But this takes a lot of time and in most cases impossible to achieve. In the meantime, we need other ways to determine whether our SEO is successful or not.

Some indications of successful SEO are given by:

- Keyword Ranking: Are we going up in the rankings for the same keywords?
- Website Traffic: Are more visitors coming to our page?
- Increased Revenue: Are we deriving more income?

SEO TOOLS

SEO tools are available to help and monitor the whole SEO process. They help from content writing by monitoring the use of keywords to monitoring rankings through link structure. But as for any tools, it is only as good as the people that use it. So, the persons using it have to master the SEO process. SEO tools are both free and non-free. Quite a large number of lists of SEO tools exist on the web.

A reliable list is available at Quora: <https://www.quora.com/How-do-SEO-tools-work>.

SEARCH ENGINE MARKETING (SEM)

Search engine marketing (SEM) is the promotion of websites by increasing their rankings in search engine results pages. We consider SEM to be mainly through paid advertising.

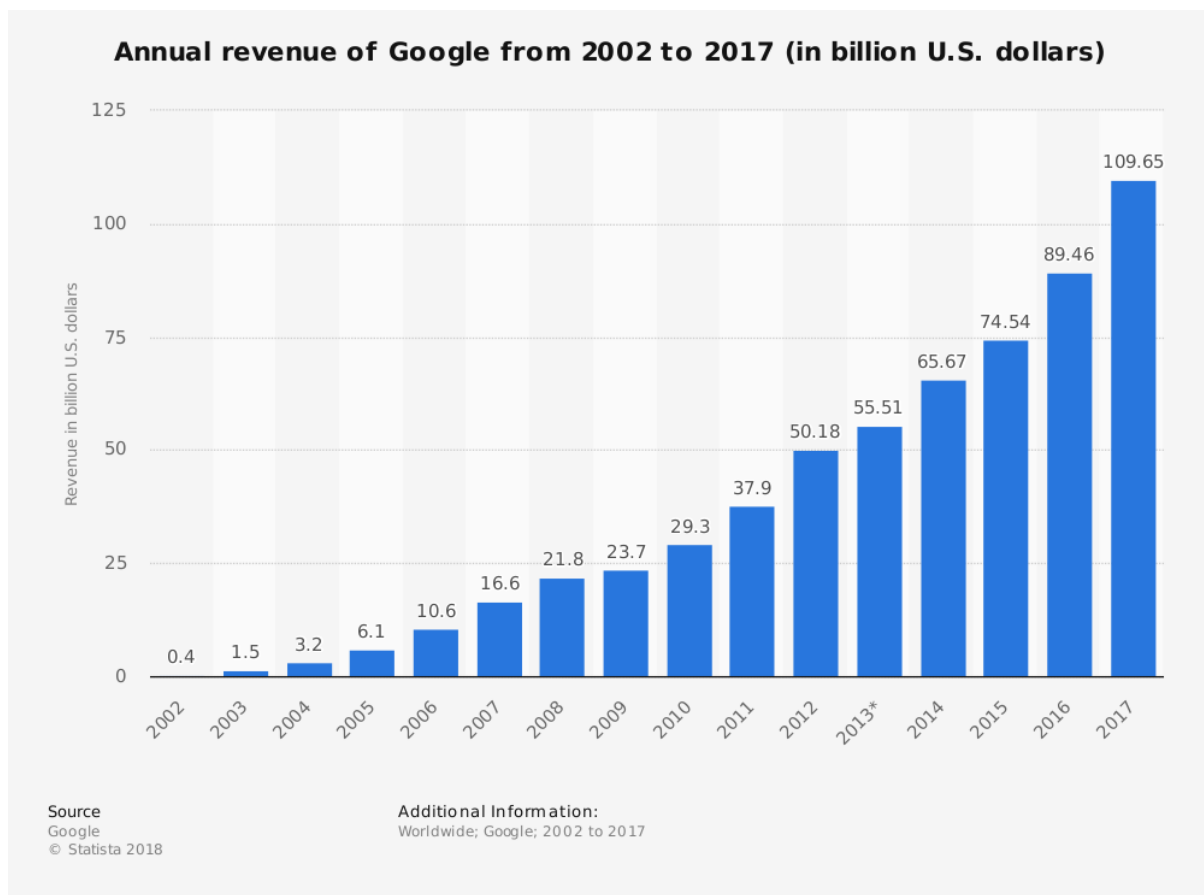
As seen previously, search results are divided into two parts:

- ✓ Sponsored part, and
- ✓ Free part.

We have also seen the difficulty in being top ranked. So, the alternative is the sponsored part: we pay to appear in the search results.

In this section, we are going to focus on the paid part. This part is also known as the sponsored, paid, advertisement and Pay Per Click (PPC) part. It is usually on top and on the right side of the screen. The ad we come across whenever we access our free emails also fall in here. The same technology is used.

Let us consider the Google search engine: we do not pay to use it. Also most of the Google services we use are free: Gmail, YouTube, Google Maps, Google Drive among others. The following figure displays Google's revenue worldwide from 2002 to 2017. Google's revenue is largely (more than 90%) made up by advertising revenue. In 2017, Google's revenue amounted to 109.65 billion US dollars and advertisement revenue amounted to almost 95.4 billion US dollars.



(Source: <https://www.statista.com/statistics/266206/googles-annual-global-revenue/>).

It is not only google but all search engines, social networks as well as most of the free services we have on the web which generate their income from adverts. Same as for search results, people tend to click on the ads top positions more frequently. So this position is a prized one. To gain this top spot in Google advertisements, advertisers have to outbid each other. Since the number of positions is very limited (it easy to see this in any search screen), higher bids move up the list whereas lower bids may not even be displayed.

Advertisers will pay Google each time a visitor clicks on an advertisement, hence the term PPC. The fees to be paid depend on the terms used for bidding and can be very high for competitive search terms (insurance, loans, financial services etc.) but very low for rare words.

THE GOOGLE ADWORDS MODEL

Advertisers bid on search terms, and whenever users search for these terms their ads appear. To complicate things: what is the purpose of just displaying an ad which may not be relevant to the users or even the users just disregarding it?

So, to answer these issues:

- Advertisers pay the search engine only if the user click on the ads, and
- The ads have to be relevant to the search term and user as well.

Advertisers can specify the following, among others, for their ads:

- Period of time to be displayed,
- Their budget,
- The geographic location where the ads are to be displayed.

We can check this by doing a search for “second hand car” for example. Our ads will usually be from businesses selling these cars in our areas.

ISSUES IN SEM

Now, pay per click (PPC) model is susceptible to click fraud: some persons may be just clicking on the ads to create clicks. The advertiser gets nothing in exchange but has to pay for the clicks. So, the addresses from where the clicks originate are tracked and only clicks from first visitors can be paid for.

The aim of the search engine is to make profits and in this case the profit is from the ads. The search engine has to prove useful to be able to attract users who will provide the clicks. So, they must provide adequate search mechanisms which provide the best search results. They must also provide an appropriate mechanism to select which ad is to be displayed so that it has a high probability of being clicked on, also known as the Click Through Rate (CTR). Advertisers also have a fixed budget for their ad campaign on search engines. So, the search engine has to balance the bids, the CTR and budget of advertisers so as to optimise its income.

A number of mechanisms have been developed which keep track of advertisers, keywords and user profile for their CTR, the budgets of different bidders and their bids as well and all these in real time.

BLACK HAT AND NEGATIVE SEO

Black Hat and Negative SEO techniques are the use of SEO tactics that do not follow search engines rules. These rules are primarily based on content and links.

The techniques used can be categorised as:

- Term spamming: Manipulating the content of webpages in order to appear relevant to search queries, or
- Link spamming: Creating link structures that boost search engine rankings of a webpage.

However, nowadays search engines are more intelligent and can detect the use of such techniques after some time.

Some examples of Black Hat SEO are:

- **Content based:**

Keyword stuffing: loading a webpage with keywords so as to manipulate a site's ranking in a SERP. These keywords usually appear out of context. One way to do it is to put words from a dictionary in a webpage hence making it relevant to all searches.

Buying reviews: Some businesses reward customers for online reviews.

Content Scraping: copy the content of a high ranked webpage and paste it on our own.

- **Link based:**

Paid links: pay for inlinks

Website Hacking: hack a website to put links on our website. Alternatively we can put links in the comments sections of webpages.

Link farms: create a large number of websites which point to our webpage.

But search engines have some mechanisms to detect black hat SEO, and downgrade these pages when found.