

SEO BASICS

How Search Works

FOR BEGINNERS

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HOW SEARCH WORKS

Search engines work according to their algorithms. In this section, you will understand basic search engine functionality and how it interprets and interacts with different parts of your website.

68% of web traffic goes to the first five positions on Google SERP* (Search Engine Results Page). As a matter of fact, Google's algorithm combines and analyses a total of 200 factors in its ranking process. Google's tendency to be meticulous captures the necessity of strategic and careful webpage optimisation.

How Do Search Engines Work?

Search engines such as Google, Bing, Baidu or Yahoo work according to very complex algorithms. This ensures that whenever you hit "Search", you are given high-quality and accurate results that answer your questions.

Search engine algorithms work according to three main stages:

1. Information Discovery
2. Information Organisation
3. Ranking

As a whole, this three-step process is referred to as *Crawling, Indexing, and Ranking*.

Step 1: Crawling (*Information Discovery*)

"Crawlers" (*also known as Search Engine Spiders*) are computer programs used by search engines to find publicly available information on the Internet.

This information is found in *servers*. Crawlers identify the number of websites hosted by each server, and work their way down the list. They do this by visiting each website and collecting data. This data includes:

- 1) How many pages the website has
- 2) The website's different types of content: Text, video and image content (additional content formats include: CSS, HTML and JavaScript).



Crawlers are smart and meticulous. This data-collecting process is repeated constantly, meaning that the Crawlers can keep track of changes made to a website (for example, adding a webpage or deleting an image).

Picture this: 130 trillion individual pages, each requiring their own set of crawlers to extract and record their information. If you think this looks like a lot of work, you would be right.

Why is crawling important? If the Crawler cannot “read” your website, your website may not rank at all. Your website should be optimised for the Crawlers as they already have a lot of work. Hence, optimising your pages and simplifying their job will help your rankings immensely.

Step 2: Indexing (*Information Organisation*)

With so much information found by the Crawlers, it must be organised, sorted and stored - otherwise, things will get messy, making it harder for potential site visitors to find your page. This clean-up is called *Indexing*.

Search engines must be selective with the information they store. They prioritise information like: **page creation/update dates and times, page titles and descriptions, content types, associated keywords, incoming and outgoing links**, just to name a few examples.

Why is indexing important? If the Crawlers don't store your website's information, it simply won't appear in the SERP – at any position.

However, what this does mean is that the more pages you have in the search engine indexes, the more likely you are to appear in the SERP – *you'll be ahead of the competition*.

Step 3: Ranking

Ranking algorithms determine the order of pages that show up in the SERP once you hit “Search”.

Algorithms outline the rules of the game, and the game equipment is what's stored in the index.



How do search engine algorithms work?

Search engine algorithms evolve over time. In fact, Google releases a Core Update at least once annually.

At first (around 2001), all search engines did was pair a search query with the webpage title. But today, Google's algorithm considers about 255 rules, most of which are completely unknown, in order to shape SERP rankings. A simplified overview of how this process works is:

I. Analysing the user's query

The search engine first needs to identify what kind of information the user is looking for. In order to select and present the most meaningful results, search engines identify *keywords* in the search query.

Keyword: A word with a specific meaning and purpose.

Keywords shape the categorisation of searches into three intents: *Informational*, *Transactional* and *Navigational*.

For instance, if someone searches "How to remove a wine stain", the keywords, "how to", tell the search engine that you are looking for instructions. Hence, *informational* content.

Alternatively, if someone searches for "Buy black Adidas sneakers", the keyword, "buy" guides the search engine to present you with primarily eCommerce websites. Hence, *transactional* content.

Finally, the keywords, "near me", in a search for "Coffee shop near me" implies locational instructions. The search engine will then use your own location, as well as locational information provided by optimised websites to provide *navigational* content.

This process is heavily dependent on Machine Learning. Machine learning allows search engines to combine and associate different related keywords. An example of this is seen in the search queries: "how to change smoke detector batteries" and "how to replace smoke detector batteries". If you put them both into your search bar, you will find that Google will provide you with the same results. This is because Machine Learning knows that "change" and "replace" usually mean the same thing.



Did you know that the highest-volume search query for Amazon is actually "amazon"? Luckily, Machine Learning also allows search engines to identify typos, and will therefore still provide the user with "amazon.com" as the highest ranking result in the SERP.

More skills include: understanding singulars and plurals, and obtaining meanings from both written and Voice search.

II. Locating matching pages

Secondly, search engines must match webpages to the identified keywords in the search bar.

Users of the search engines expect them to provide the best results in the smallest amount of time. *This is where website owners can use SEO to their advantage the most.*

Some of the most important factors search engines consider when matching pages and search queries are:

- Title and content relevance - how relevant are the page title and content with the search query?
- Content type - is the user asking for images, text, video or something else?
- Content quality - is the content useful, unbiased, and accurate?
- Website quality - is the website made well and free of bugs, pop-ups, and other inconveniences?
 - Remember - the search engine caters to the user. They want the users to have the best possible experience with the provided results so that the users come back again.
- Publication date - particularly for news-related results, search engines will consider publication date to determine content relevance.
- Page popularity - how do other websites perceive this page? Unintuitively, this isn't to do with page traffic, but rather, the credibility of the page as determined by mentions in other websites.
- Page language - users must be able to understand what they are receiving. The language used to do so isn't always English.



- Loading times and page speed - slow-loading pages (> 0.5 seconds) are harmful to user experience, and will therefore not rank as the search engines want the users to have the most enjoyable experience possible.
- Device type - websites that have mobile-friendly versions/set-ups will rank better on mobile-based searches.
- Location - in some cases, users are looking for location-specific information and content. This means that optimised pages must have locational information when possible (you can refer back to the example of navigational content above).

Why are search engine ranking algorithms important? Data reveals that in the large majority of cases, users only click on the first 5 positions of the SERP. Think about it, when was the last time you went to page 2 of your Google results page?

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