Reviewing the New Technique to Humanize a Search: Google Hummingbird

Pooja Balhara

Assistant Prof. AIJHM College, Rohtak, India

balhara.pooja2@gmail.com

Abstract

Whenever a user wants to search anything, a search engine provides him with the results based on the keywords written by him in the query. So, there are various techniques which can act as a search algorithm to be used for answering the user's query. Google Hummingbird is one such technology. Previously a search query weighed all words equally, but Hummingbird is smarter to figure out a user's true intent. Instead of asking what keywords users will be searching for, Hummingbird asks what kind of information are users looking for.

Keywords: Search Engine, Search algorithm, SEO, Crawler, SERP, knowledge graph.

I. Introduction

When a user searches some content on the search engine, results are displayed. These results are displayed as per the particular website's contents. So, now a days the organizations are focusing on the content of their website so that when a user search anything on the search engine related to their website, their website should be on top of the result list. To make it effect, one such process is Search Engine Optimization.

Search engine optimization (SEO) is the process of affecting the visibility of a website or a web page in a search engine's "natural" or un-paid search results. In general, the more frequently a site appears in the search results list, the more visitors it will receive from the search engine's users. SEO may target different kinds of search, including image search, local search, video search, academic search, news search and industry-specific vertical search engines.

SEO considers how search engines work, what people search for, the actual search terms or keywords typed into search engines and which search engines are preferred by their targeted audience.
Optimizing a website may involve editing its content, HTML and associated coding to both increase its relevance to specific keywords and to remove barriers to the indexing activities of search engines. Promoting a site to increase the number of back links, or inbound links, is another SEO tactic.

Webmasters and content providers began optimizing sites for search engines in the mid-1990s, as the first search engines were cataloging the early Web. Initially, all webmasters needed to do was to submit the address of a page, or URL, to the various engines which would send a "spider" to "crawl" that page, extract links to other pages from it, and return information found on the page to be indexed. The process involves a search engine spider downloading a page and storing it on the search engine's own server, where a second program, known as an indexer, extracts various information about the page, such as the words it contains and where these are located, as well as any weight for specific words, and all links the page contains, which are then placed into a scheduler for crawling at a later date. Site owners started to recognize the value of having their sites highly ranked and visible in search engine results, creating an opportunity for both white hat and black hat SEO practitioners. Early versions of search algorithms relied on webmaster-provided information such as the keyword meta tag, or index files in engines like ALIWEB. Meta tags provide a guide to each page's content.

Search engine crawlers may look at a number of different factors when crawling a site. Not every page is indexed by the search engines. Distance of pages from the root directory of a site may also be a factor in whether or not pages get crawled.

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In the diagram below, if each bubble represents a website, programs sometimes called spiders examine

introduction of Hummingbird, a new algorithm that allows the search engine to process and sort its index more efficiently. With this new algorithm, Google is better able to understand the meaning of a phrase and return more precise results to complex search queries. These changes provide brands with an opportunity to become more relevant and useful to consumers by expanding their content strategy to include more informational content on their site.

The new algorithm, named Hummingbird because it is fast and precise, is the most comprehensive algorithm change Google has made since 2001.

Google Hummingbird aims to better understand the intent of the query instead of just looking at the keywords used in the query. Hummingbird also attempts to provide better results for voice searches done via mobile devices.

Fig 1: Search engines use complex mathematical algorithms to guess which website a user seeks.

By 2004, search engines had incorporated a wide range of undisclosed factors in their ranking algorithms to reduce the impact of link manipulation. In 2005, Google began personalizing search results for each user. Depending on their history of previous searches, Google crafted results for logged in users. In 2007, Google announced a campaign against paid links that transfer Page Rank. In December 2009, Google announced it would be using the web search history of all its users in order to populate search results. Google Instant, real-time-search, was introduced in late 2010 in an attempt to make search results more timely and relevant. In September 2013, Google released the Google Hummingbird update, an algorithm change designed to improve Google's natural language processing and semantic understanding of web pages.

Fig 2: Google's logo for the search algorithm

Hummingbird places greater emphasis on page content making search results more relevant and pertinent and ensuring that Google delivers users to the most appropriate page of a website, rather than to a home page or top level page. With this new algorithm Google is better able to understand the meaning of a sentence and return results to far more complex search queries. In the past, Google analysed keywords individually and tried to match those individual keywords to the content of the site, but as search queries evolved, so has Google. Information from Google's Knowledge Graph also appears more often than it did previously, which helps Google provide answers directly in their search results. Early indicators show that the medical-related queries appear to show Knowledge Graph info more often than others. II. Google Hummingbird

At the end of September, as part of its 15th anniversary celebrations, Google announced the
III. Semantic Search

Google's Hummingbird algorithm is incorporated almost Semantic Search. It's that, because, Semantic Search is highly capable to search accurately
understanding the query intent of the searchers and very swift to catch the meaning of contextual or phrasal terms to generate more relevant results.

A system of search that bases on the science of meaning in language to create almost perfect or super relevant search result is called the Semantic Search System. Semantic Search includes, contextual search, search location, query intent, using of synonyms, syntax, common and uncommon queries, conceptual queries and natural queries to produce highly relevant search results.

Keywords should not be placed in the content irrelevantly and needless them to be highlighted also; rather it should be stayed naturally in the centre of the issue to be empowered focusing all contents very relevantly. Some points below are the keywords idea for Hummingbird that it used to users intent in search queries. So, the issue of keywords or query texts should be-

Comprehensive with complete sense,
Conversational but natural and conceptual
Synonymous with query terms
Containing phrases what searcher's intent

According to highlighted/tagged words appeared in the SERP.

Very relevant on anchor text

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Intent to image and video, authorship and informative and so on.

A base of knowledge that used by Google to enrich storage of search results gathered from a broader categorized sources through semantic search information is called Knowledge Graph. Google includes this graph in Search Engine on May 16, 2012 aiming that advanced users could able to use these data to assemble them and solve their needs without navigating other sites. Hummingbird takes this advantage of Knowledge Graph and provides more dynamic search to the searchers.

IV. Conversational Search

Instead of using Semantic Search, Google Hummingbird uses conversational search prepared to crack semantic search by Google.

A kind of search what Google hummingbird prefers and refers to input a conversation or the whole sentence or meaningful voice as a query

for answers instead of particular words is called conversational search. Google Hummingbird could easily find out the intent behind the conversational search queries and provides a solution.

Users of Google Chrome may have noticed a small microphone icon in the right hand corner of Google's search box (now on Google search as well). If the user clicks on that microphone (and has configured their computer for it) they may ask aloud the question they would have typed into the search box. The question is then displayed on the search screen, along with the results.

If the answer to the query is in Google's Knowledge Graph, an Information Card is displayed with the pertinent facts listed along with a list of sites you may visit with more information.

Fig 3: Conversational search icon provided with Google Search

According to Google, Hummingbird pays an extra attention in each of the query words, total sentence or voice or conversation, rather than an incomplete sentence of particular words. Then Hummingbird could hear and easily understand the whole query

what users would like to find and hummingbird does the job accordingly. Ultimately, then, Hummingbird could find out the more accurate pages matching on the basis of complete meaning or sense rather than pages by words itself. It could help you even to say you the place where you are, where the source what you look for and any answer of your question so far, so on, are really extraordinary helping bird than pre-hummingbird search. So, the hummingbird is now sincere, attentive and faster to provide you more perfect result of your query. Hummingbird is designed to apply the meaning technology to billions of pages from across the web, in addition to Knowledge Graph facts, which may bring back better results.

For example, if a user post a question to Google Search as "How many Google Searches per day" as shown in figure:
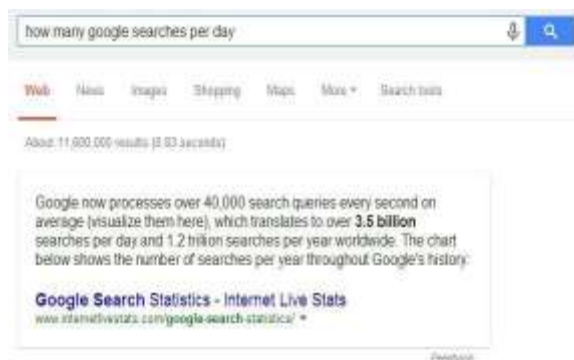
Fig 4: Question posted by user and its answer
given by Google Hummingbird

You can see from the figure that the answer to question is bolded, rather than the "keywords" in query. That's because Hummingbird assumes that all a user want is an answer, pure and simple. He She don't need a link to a blog with the top 1,000 Google facts nobody knows, or even an official Google page boasting about its daily search volume.

The same principle applies when another user want to know exactly what 90% of 3.5 billion is. He she don't want to be taken to a calculator website or application for this as shown below:

This is what makes the Knowledge Graph so powerful. It meant that users no longer had to click through to even a top-ranked site, as Google "helpfully" provided the answer to the user without forcing them to leave the SERP.

V. Factors Affecting Performance of Hummingbird

Every site what it already indexed once is under the watch of the Hummingbird to help in traffic generation. But you have to use the bird's capability by knowing the favorite factors below if you want to obtain sustainable better performance from Hummingbird:
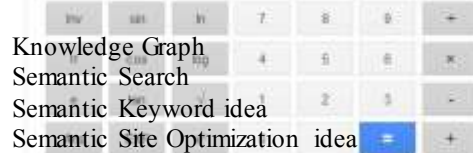
Knowledge Graph
Semantic Search
Semantic Keyword idea
Semantic Site Optimization idea
(e)   Traffic   engagement   in site instead   of keyword highlighting

Textual engaging content enrichment/value adding

New content marketing strategy
Facilitating problem solution in site (Q and A)
Overall site quality
Google authorship and other social indications

Site branding indications
Checking web spam factors
Domain, page and site level factors
Back link factors
Domain and Page Authority
Realize mobile and voice search

Social media linkage

Fig 5: Another mathematics related question posted by user and its answer given by Google Hummingbird

VI. Applications of the System

Voice Powered Searches:

The Google Hummingbird algorithm is mostly directed to long-tail queries via voice-powered searches. With voice, search is moving away from keywords and focusing more on the intent of queries. Users are searching using phrases in the form of questions or requests; they are conversing with their search engines rather stating commands as they

do when they are typing searches. Viewing each page on your site through the lens of 'what are the questions this page answers?' is a good exercise as you review

and enhance your content that is targeted at the earlier stages of a customer's journey where they are in the information seeking phase.

On-site Content and Brands:

Commercial search terms such as 'used cars for sale' and 'cheap flights to New York' seem to be impacted less than navigational and informational searches. The changes in Hummingbird provide an extra incentive for brands to expand their content strategy and develop more informational content that is relevant and useful to your consumers. Three things your brand can do to adapt its content strategy today:

Review which synonyms and related words

Google believes are related to your brand's core keywords and incorporate those into your content.

Review internal search data to better understand what questions consumers are asking. Also, think about the intent behind the query to ensure that your content is

clearly addressing their specific informational need, e.g. are people search for information related to a specific area or specific life stage. This approach to your content strategy will allow for your brand to be more visible during the research phase of your customer's journey.

Use Google Suggest to identify queries in the form of a question.

Small Businesses:

Starting a blog about business website and creating helpful content, consistently, will keep a website performing well. Hummingbird now understands the context of queries better than before, so that means that it's more important than ever to listen to your customers to figure out what their most frequently asked questions are, and to create content hat answers and offers solutions to those questions.

Answering questions using blog posts gives your website more avenues for visitor entry (entrance pages) and makes your site a stronger resource, allowing you to become an expert on more topics, rank higher for more long-tail keywords, and cover more of your specific space. With the Hummingbird update the relationship between social and search is more important than ever. Google's mission is to
provide searchers with the most valuable content it can. Social signals give a better indication of what is valuable on the web. Get your valuable content in front of key industry influencers. These are professionals who are well-respected and whose opinions matter the most.

So, the Google Hummingbird update can really benefit small business marketers if they share their content through social media outlets and then they will start seeing that more little birdies get attracted to their website's sweet content "feeder."

VII. Conclusion

Google Hummingbird can help us find exactly what we need with minimal effort. The updates Google has made with Hummingbird address the changing nature of search as queries become more complex and consumers rely more heavily on local, navigational and voice-powered search. To take full advantage of these algorithm changes, brands need to ensure their website content provides information to consumers' most common questions. If your brand is able to provide clear and easy-to-find answers to brand-related topics, it will drive traffic to your site and loyalty among consumers.

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