How Hummingbird Update Effects on Search Engine Optimization: A Survey

Shravan Kumar Upadhayay [1], Vikash Mainanwal [2]
Computer Science Department,
Punjab Institute of Technology, Kapurthala
Punjab Technical University Main Campus
Punjab, India

Abstract—In this paper, Search Engine transfer information efficiently and accurately and do this optimization to improve the web search Keywords ranking, creation with understanding the principle of search engine. This paper conveys the specific explanation of How Google Hummingbird Update effects on Search Engine Optimization. And then it introduces the new web linking concepts for the purpose of the construction of search engine optimization Methodology. Through an factual research from the fields of the internal coding method, the website content feasible form and website inclusive architecture, this paper exemplify search engine optimization tools, strategies and methodologies, and analysis the new thought that How Google Hummingbird Update effect the enterprise and e-commerce sites with the search engine do the effective website promotion.

Keywords- SEO, Search engine optimization techniques, Google Hummingbird Algorithm, Hummingbird update, SEO Strategy, SEO Tools, Semantic search concept, Knowledge Graph etc.

1. INTRODUCTION

"Google Hummingbird" [1,18]Algorithm, Google quietly made a huge change to its core search technology in the past years, one that alter about 90 percent of searches worldwide. Calling it Hummingbird, the technological renovate of Google search is designed to handle more complex queries. According to Tech Crunch The main focus, that the new algorithm concede Google to more quickly parse full questions (as opposed to parsing searches phrase-by-phrase), and to classify and rank answers to those questions from the content they've indexed.

Now in this paper we have discussed how Google Hummingbird Update Effects Search Engine Optimization, and how to improve enterprise and e-commerce website performance/promotion. What type of new strategies, code modification, search optimization tools and method is used to enhance website traffic, promotion over Internet without violation of "Google hummingbird" algorithms concept.

"SEO " Search Engine Optimization[1,7,9] It is the process of getting traffic from the "free," "organic," "editorial" or "natural" listings on search engines. All Prominent search engines : **Google**, **Yahoo** and **Bing** have such results, where web pages contents and other content alike videos or local listings are shown and ranked based on what the search engine examine most relevant to users.

"SEO Needs for Business "There are three **prime reasons** why SEO needs for Business: Increase Keywords Ranking, Increase traffic for site and third one is Increase Conversions.

Google Algorithm: Google reveals what it wants search marketers to know and keeps the rest confidential. Actually, everything that happens between submitting a query and seeing the search results is a black box**.** Algorithms, Searching methods and updates are available to explain the functioning of search engine. But here we elaborate only general search model concept.
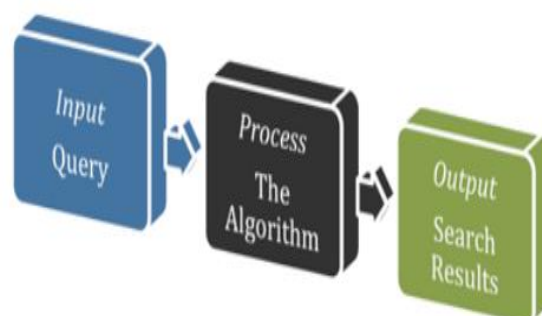

Fig 1 - General search model[2]

2. GOOGLE HUMMINGBIRD ALGORITHM STRATEGY

In this Paper We Have Discussed How "**Google Hummingbird"** algorithms [19] works to Search the desired user query requirements. Google announced the brief summary of Google Hummingbird, a new algorithm that assent 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 advancement provide brands with an opportunity to become more relevant and effective to consumers by expanding their content strategy to include more informational content on their website. The **Google Hummingbird** [19] update is not about how you rank, but it's determine how search will show up in response to the queries.

Here Google Uses the Concept of **Semantic Search** is Google's way of showing you the best possible outcomes, depending on your location, on line website behavior, your network, trends, etc. Thus content creation along with great amount of social interaction will be vital.

And **Semantic Search** works on the concept of **knowledge graph: Knowledge Graph** is a archive. It is what Google exploration into, to give you results. The **Google Hummingbird** update has suddenly brought the focus back on Knowledge Graph concept. With the newly updates, effectiveness and filters have been added to the **Knowledge Graph**.

Here I explain How **Google Hummingbird** uses the **Knowledge Graph** concept for Search Queries:

Let's assume that user want to inquiry about "Shopping complex Delhi" than goggle will leverage the location data and translate the query to show places around your current location where you can Shop.

Semantic Search

Semantic search [2] seeks to improve search accuracy by understanding searcher's intent and the contextual meaning of terms as they appear in the reachable data space, whether on the Web or within a closed system, to generate effective results. Semantic search systems consider varied fleck including variation of words, synonyms, generalized and specialized queries, context of search, location, intent, concept matching and natural language queries to provide relevant search results. Dominant web search engines like Google, yahoo and Bing incorporate some elements of semantic search.

Knowledge Graph

The **Google Knowledge Graph** [17]is a system that Google launched in May 2012 that understands facts about pictures, things and places and how these entities are all connected with each other. Google Launches **Knowledge Graph** To Provide Answers. Knowledge Graph a functional enhancement that attempts to provide actual information about the subject of your query rather than just a list of web links. This might be helpful, but the really impressive part about the graph. The **Knowledge Graph** is used both behind-the-scenes to help Google improve its search relevancy and also to present Knowledge Graph boxes, at times, within its search results that provide direct answers.

3. GOOGLE SEARCH SYSTEM ARCHITECTURE

It's being conferred as a query expansion or broadening approach which can better understand longer natural language queries, Google's analysis of different search entities such as the relationships between queries might be identified in some cases as improving researcher's satisfaction for search results based upon things such as how long someone might dwell on a page when they select it in a set of search results.
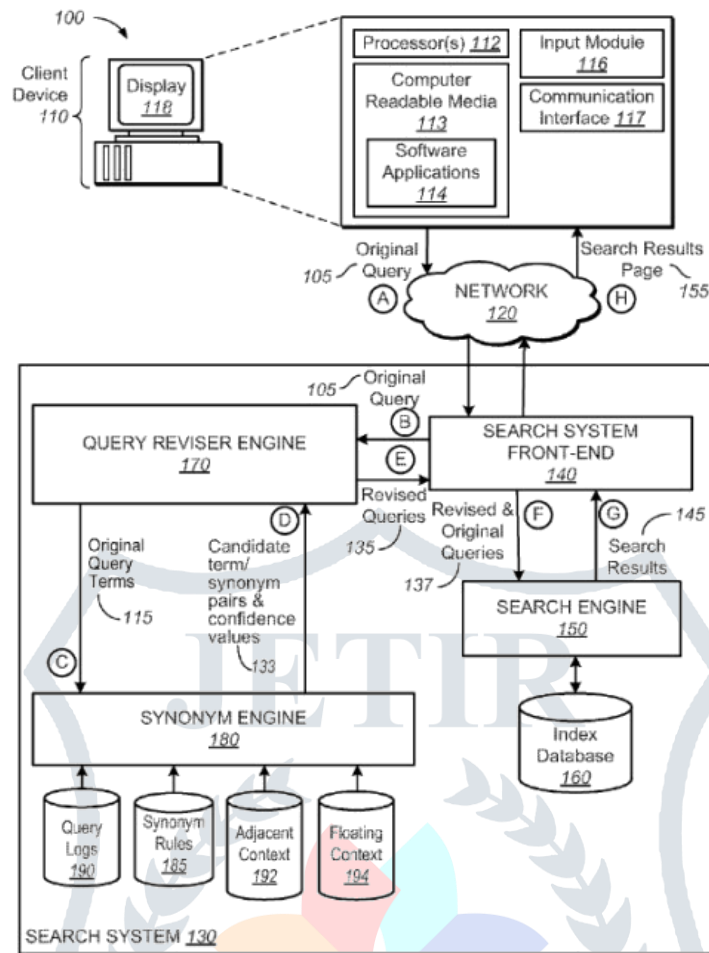
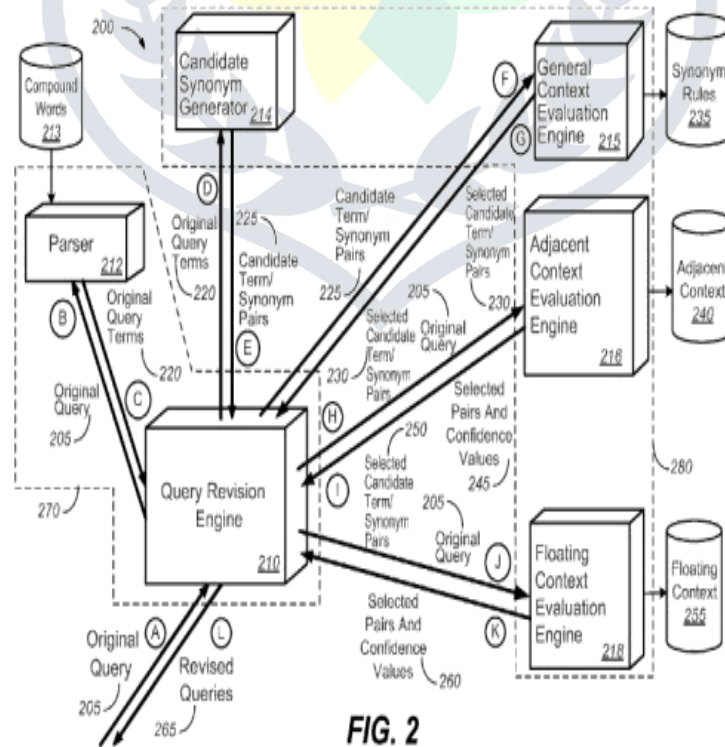Fig 2 Working architecture of Google Search Engine[21]

FIG. 2

Fig 3- Google's analysis of different search entities [21,2]

4. SEO ATRATEGY TO MINIMIZE THE IMPACTSOF "GOOGLE HUMMINGBIRD" ALGORITHM

"Google Hummingbird" Algorithm [2]: Its new emphasis on matching the meanings of phrases with concepts rather than just matching the individual words in a query to documents.

Content [17]

When it comes to content, using concepts, making each concept stand out and employing a four-point content strategy are key . The low-hanging fruit is to go through your current content and make sure it uses phrases that match how people think and search.

Make Every Piece Stand On Its Own

Focus each piece of content on a specific concept. A Prominent SEO content strategy[2] is to write a tent pole page for a key word or phrase, then publish new content that links to the tent pole page with enhance anchor text. While this can still be effective, be certain each page of aiding content focuses on its own unique concept.

Fig 4- content plans [2]

Canonicals

To make sure each page has one unique URL or use canonical directives [2] to indicate the correct URL. If you do use parameters, check your Web master Tools setting in Google, yahoo and Bing, and keep those parameters in the same order in all your links.

Title and Meta Tag Description

Use Unique & simple web page title and focus goal oriented meta tag description which related to generates web traffic and Search engine easily enhance the website performance.

Universal search optimization

It helps to identify the most important Google vertical search indexes for your business model and incorporate any relevant measures into the overall concept of the SEO strategy [3,9,13]. Google vertical search are: Google News, Google Image Search, Google Places, Google Shopping and Google Video Search,

Social media optimization

Social Media Optimization[2] (SMO) is also a part of Social Media Marketing and enables search engine signals from social media … streams to be factored into search engine rankings. Other **Seo Strategy** are **On-page targeting & optimization, Information architecture & code structure review, Competitive analysis and monitoring etc. which we can discussion later.**

5 SEARCH ENGINE OPTIMIZATION TOOL

Search engine optimization tools use our SEO tools[1,13] to perform free search engine submissions **or research keyword popularity through a** keyword forecast tool. Most popular Search Engine tools : Google Web master tool, Bing web master tools, Google analytics tool and few other tools are also available in the market. Web master tools are used to analyze the website performance, flexibility, site contents information, keywords density, link building details, info about errors, website server info and social media traffic referrals information on basis of real time.

6 CONCLUSION & FUTURE WORK

"Google Hummingbird" Algorithm: Its news emphasis on matching the meanings of phrases with concepts rather than just matching the individual words in a query to documents. It makes sense that Google would reorganize all the pieces and combine many methods to optimize, organize and clear the path for future improvements. We analysis that's it slightly make impact of Search Queries But not worried about it, Only use original, unique content. Signals that have been important in the past remain important; Hummingbird just allows Google to process them in new and hopefully better ways. Hummingbird helps Google to make future changes more quickly and in greater numbers. As a conclusion, we put forward a number of open research challenges with regard to prospects of "Google Hummingbird" Algorithm and other issues.

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