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# The Anatomy of Web Search Engines and Large-Scale Alterations in Ranking Algorithms

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**Abstract-** In the Research paper I explained about working Google Web indexing, crawling and ranking algorithms. On every new day Google and other search Engines are changing their way to index and rank website. It explains the way to get ranks your website with safest way and keep your business moving towards top positions. The paper provides in-depth analysis of all big hits of Google by updates in ranking algorithms. This paper addresses this question how to make a better strategy for getting in local search.

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**GJCST-E Classification :** F.2



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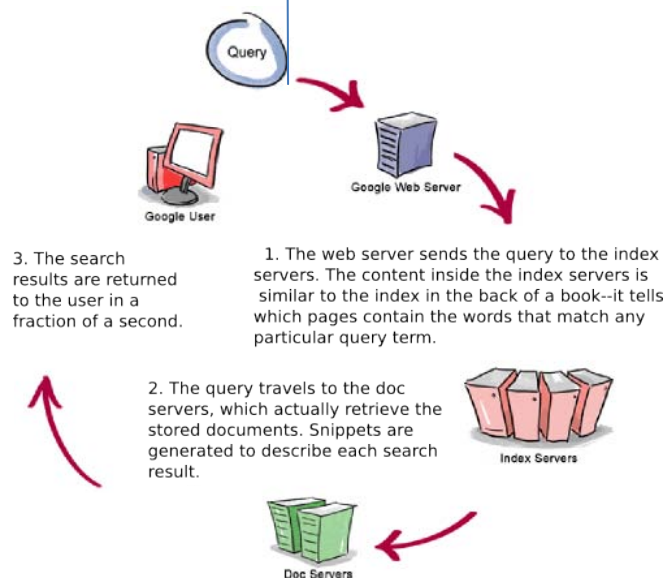
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## I. INTRODUCTION

The Technical working concept of Search Engines is to locate the Database of pages and return the most keyword relevant results. Google has lots of differences as compared to other Search Engines which are searched results reordering on base of contents refresh and relevant linked pages on internet .



While having a site on Top Ranks if will not care about this. It will go down sooner than your expectations. Panda, Penguin and Hummingbird Algorithms are the great way to make the internet polite introduced by Google. Uniqueness and Tendency of Content Topics is loved by Panda. While on the other side quality and relationship of linked incoming and outgoing links can make site loved by Penguin.

Just two year earlier, businesses and professionals were always waiting for Google Page Rank Updates every three months which was considers as site value. Google Page Ranking system permanently stopped in December 2013.

Rand Fishkin (2014) said "Search engines are answer machines. When a person performs an online search, the search engine scours its corpus of billions of documents and does two things: first, it returns only

those results that are relevant or useful to the searcher's query; second, it ranks those results according to the popularity of the websites serving the information. It is both relevance and popularity that the process of SEO is meant to influence." [1]

Google have to pick Top ten sites for the specific keyword to show on first page. Being on the top ranking in Google or any other search Engine is the Holy Grail which can give you lots of organic free traffic.

Sergey Brin and Lawrence Page (1998), explained "Creating a search engine which scales even to today's web presents many challenges. Fast crawling technology is needed to gather the web documents and keep them up to date. Storage space must be used efficiently to store indices and, optionally, the documents themselves. The indexing system must process hundreds of gigabytes of data efficiently. Queries must be handled quickly, at a rate of hundreds to thousands per second." [2]

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There is massive questions arises while a business thinks to become digital.

- How to get to no1 in Google organic listings?
- How to get to number 1 in Google image search?
- How to get to no1 on sponsored listings in Google?
- How to get your site number 1 on Google news?
- Get number 1 listing on Google maps results?
- How to get number 1 on Google video results?
- How to get site on Top Ten in Google Search?
- How to get number 1 in Google shopping comparison?
- How to get website 1 in Google blog search?
- How to get number 1 on Google Places?

Getting ranking on Local Search Engine is the most businesses focus. When you are facing competitions on highly competitive keywords and niches, you have to pay Google Adwords to get for paid listing and advertising.

Google and other Search Engines are following this sequence to consider sites for Ranking:

- Free / Natural & Organic Listings
  - Organic Listings
  - News
  - Video
  - Maps
  - Places
  - Blogs
  - Images
  - Social Updates
  - Shopping
- Sponsored / Advertising links

All companies having different things to rank and there are massive strategies are working in the world to achieve this goal.

## II. GOOGLE PANDA TECHNICAL WORKINGS

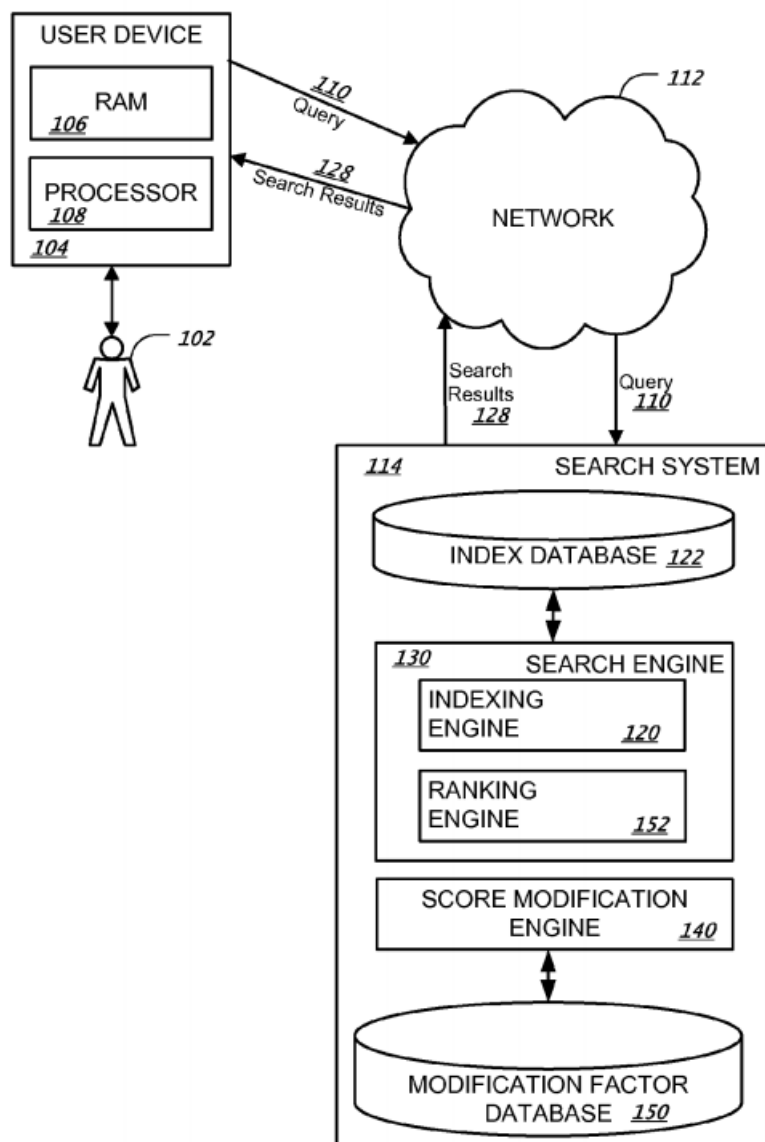
1. Panda is all about the contents quality and refresh. It was launched in February 2011.
2. Panda analyze the gathered search results and find links and queries linked with a site.
3. Once user search, each result listing gets an initial score based on relevance to search keyword and its page quality.
4. Calculations of #1 and #2 determine if the result listing is above or below a threshold.
5. Then final Results are reordered by these values.

Barry Schwartz (2015) briefly explained "Search ranking involves 200+ signals; Panda is just one of them. The change in position is dependent on a combination of many factors besides Panda." [3]

As written by Google Asia Pacific (2015) "Google Panda changes the face of search. From the smallest child to the grandparent who's never used a computer, anyone who can ask a question can own and love a Google Panda." [4]

### a) *Recovery Tools*

No, you're only solution is to bring the real and unique contents. You need to check pages with no or little contents. Check plagiarism and recover these pages.



Erin Everhart (2015) explained “One of the common issues you find during a content audit is “dead” content. Dead content is old or outdated content that at one point was useful to your user but may not be helpful anymore.” [5]

#### b) Google Penguin Technical Working

Google Penguin Algorithm brings those websites down those are violation the Google Webmaster guidelines and using Black hat SEO methods. It was launched in April 2012.

- Paid links
- Check for Same IP back links
- Check for bulk links with same keyword
- Check from unnatural back links

Will take sites down with any types of terms violation of White hat SEO.

#### c) Recovery Tools

Google launched disavow links tool to recover Penguin. Submission of all bad links in a CSV report to Google Disavow Tool will block these site to referring your site and Webmaster can ask Google for plenty recovery.

#### d) Hummingbird Technical working

Google announced hummingbird on September 26, 2013. It is not like panda and penguin but it is like a new search Engine.

Actually Hummingbird is something like human centered approach instead of machine keyword ideas. When a user searching for “best SEO Company in Los Angeles”, he may write “which company in Los Angeles is providing best SEO service”. If user is using speak query function with voice there are more chances “which company in Los Angeles is providing best SEO service” or “which SEO company is Los Angeles providing best

service". Main goal of the Hummingbird algorithm is to make Google stronger to understand a user's query. It is now impacting 90% of all searches on every update. Google is now considering synonyms from a synonym database to fit the whole query by user to find the best match contents.

Danny Sullivan (2013) explained "Hummingbird should better focus on the meaning behind the words. It may better understand the actual location of your home, if you've shared that with Google. It might understand that "place" means you want a brick-and-mortar store. It might get that "iPhone 5s" is a particular type of electronic device carried by certain stores. Knowing all these meanings may help Google go beyond just finding pages with matching words. [6]

#### e) Recovery Tools

That is again a content driven approach which can keep you safe from Hummingbird. You have to become more interactive with users of prospects. Think about the audience which you targeting and see what they can type to find the same thing in different words.

Conclusion and Recommendations:

Instead of just focusing all on getting number 1 in Google, your focus should be on getting ranking on different Google properties Google Images, Videos, Places, Maps, News etc. It will provide more exposure to give your business and opportunity to appear for as many searches which are relevant to your business.

While you are targeting long tail keywords there are always better chances to get top rank earlier with less effort. Find the low competitive keywords with high search volume in your niche than write content optimized with these keywords. Now your next step will be getting relevant inbound links to your pages. Be natural and organic while making back links.

Google will not stay with these algorithms and updates; there will be more big changes in future which will affect all minor unnatural things in SEO.

Google inside Search (2012) writes "Our algorithms are constantly changing. These changes begin as ideas in the minds of our engineers. They take these ideas and run experiments, analyze the results, tweak them, and run them again and again." [7]

Now in the upcoming 5-10 years internet is becoming too fast and numbers of users search for video contents is increasing. In the next decade there will be 70% of search for video & images contents so businesses have to focus on this side.

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