



Role of Change in Google Algorithm's Update: Its Impact on Website Traffic

^{1#}Mr. Sujit Katave ^{2#}Dr. Bhaskar V. Patil ^{3#}Dr. Deepali M. Gala

^{1#}Student, Bharati Vidyapeeth (Deemed to be University), Institute of Management, Kolhapur, India

^{2#,3#}Assistant Professor, Bharati Vidyapeeth (Deemed to be University), Institute of Management, Kolhapur, India

Abstract: Search engine optimization is a digital marketing technique that helps you gain website traffic and website rankings. Over the years, SEO has evolved with future needs. However, webmasters have also found various loopholes that help them gain rankings on search engines. Google is aware of that, which is why it constantly updates its algorithm to filter out the websites that use SEO tactics that are not in compliance with search engine best practices.

For this purpose, it is important to understand Google's Algorithm and what it values, so that we can tailor our marketing strategy, and provide value to the users. For this purpose, in this research paper, we understand the factors that the algorithm considers before ranking websites or web pages in the top results. We also take a look at the important algorithm updates that have been rolled out in the past, and how they have impacted website traffic, and rankings.

Index Terms - Google Algorithm's, Search engine optimization (SEO), algorithm

I. Introduction

Search engine optimization (SEO) is a process that aims to improve the visibility of a website or a web page in search engine's organic or unpaid search results. In general, the higher a page ranks on the search results page, and more frequently a site appears in the search results list, the more visitors it will receive from the search engine's users (Sonawane, 2015). According to IMAI report titled 'Internet in India', It is stated that there are a total 692 million active internet users in India, with predictions that India will have 900 million internet users by the year 2025. In the light of this research one can foresee the importance that digital marketing will gain, especially SEO in the future- as there are 145 million searches happening per hour on Google itself (Internet Live Stats, 2022).

According to research conducted in the past, Siteefy states that the number of websites online changes every second. However, during the survey conducted by Netcraft's in July 2022, there are over a billion websites (1,139,467,659 exact number) present over the internet. However, a significant number (over 70% of websites) are said to be inactive or spam.

This is why Google uses a specific algorithm to filter and penalize spam websites from getting indexed. They assign high ranks to websites that provide value to users, and low ranks to websites that do not follow SEO best practices. In case a website is spam, or inactive, then Google removes the website's web page or particular web page from the index (Saber, 2013). SEO is completely based on search engine algorithms that crawl, index, and ranks websites on search engine result page. However, Google announces regular updates and modifications in its algorithm, which are sometimes official, whereas sometimes kept hidden. They provide great challenges for digital marketing or SEO specialists. But learning and adapting according to them is equally vital (Joshi, 2018). Hence, it is important to examine and learn about search algorithms in search engine optimization (Saber, 2013). As there are always some concepts which are hidden and implemented in algorithms, it is important to comprehend what is known, to improve website performance (website traffic), and rankings in a positive manner. (Joshi, 2018). By learning about Google Algorithm, our website can gain website traffic, which can help to spread awareness about product or service, or showcase content to those interested in the brands offerings (M. Megala, 2014).

This research aims to observe the impact of Google Algorithm Update on website performance by monitoring overall, organic, referral, and direct traffic through Google Analytics. Here, it is argued that by

understanding these updates and tracking website metrics we can create a better SEO strategy and improve SEO results. Further, the research paper also talks about how using search engines' best practices can help us reduce deviation after an update is completely rolled out. For this study, improvements were also made to see if the website traffic increases after following Google Algorithms' best practices.

II. OBJECTIVES:

- To observe the direct and indirect impact of an algorithm update on website traffic.
- To make improvements according to the algorithm update and observe if following search engine best practices can improve the deviation in website traffic.

III. SCOPE & RESEARCH METHODOLOGY:

The website traffic of a test website was monitored through Google Analytics. Improvements were conducted on this website, and observations were made in overall and referral traffic during and after the Google Algorithm update. The scope of this research extends to a few important algorithm updates rolled out by Google.

For this research paper, various secondary sources like the previous research papers were studied to make necessary observations and conclusions. To show the impact on website traffic and rankings, it was important to study the important timelines in algorithm update history and highlight the necessary observations (about the impact) made in other research papers in the past. However, for recent algorithm updates, such as the Page Experience Update rolled out in 2022, and the Broad Core Update rolled out in May 2022, the traffic of a test website was monitored through Google Analytics.

A. ALGORITHM MEANING, PROCESS, AND IMPORTANCE IN SEO

According to Joshi, 2018, Algorithm, also known as smart bots or crawlers fetch data from web and add them to databases in a formatted manner. Later on, this same data from web (links) is identified, and a tree like structures are made which helps to describe a page or domain strength on web(Joshi, 2018). The process of algorithm should be understood, to get insight on the role of algorithm in marketing.

According to the research conducted by Burdak in 2012, most search engines follow the crawling, indexing, and ranking mechanism, where the crawler also known as robot or spider travels the web and downloads web pages of websites. An index is maintained according to keywords (search query typed by user on search interface) so that the search engine can rank web pages to particular keywords according to their relevancy, and other factors(Burdak, 2012).

After this process, finally when a user enters a search query, the data in the index is compared, and a sorted list of relevant results is returned. This list is prepared through page sorting, which is a process of ranking results based on critical factor of search algorithms(Saberi, 2013). These factors are constantly updated to rank the informative and useful sites, and filter, penalize or stop spam websites from being indexed (Saberi, 2013).

Understanding this process makes it clear that algorithm updates should be considered in making an SEO strategy. Any deviation in traffic caused by these updates must be taken into account, and necessary adjustments must be made to SEO tactics. Here, one can also say that algorithm updates should be considered as an external factor of a website.

B. PENGUIN ALGORITHM UPDATE:

Vishal Gaikar in his blog titled "What is Google Penguin and What Should You do About it?" explained the reason behind the rollout. As emphasized previously in this paper, he was also of the similar opinion that SEO experts must optimize sites in accordance with search engine best practices to achieve visibility and traffic for specific search terms. However, in his blog published in 2012, he strongly states how SEOs have devised techniques to manipulate search rankings by fooling search engines into believing that a particular site is following best practices when it isn't. Further, in the blog, black hat methods were discussed, in which he talks about how webmasters pay for incoming links, also known as backlinks, to gain rankings.

(Manish Maheshwari, 2013)However, search engines after being aware of this practice countered by launching the Penguin updates in 2012. The Penguin update turned the traditional link-building practices. Hereafter, unnatural linking was penalized (in the past, the general rule was to use keywords as anchor text. Such backlinks were penalized after the Penguin update). Anchor text diversity has become critical after this update(Manish Maheshwari, 2013), and Google started actively seeking, and de-indexing sites where paid links could be created from their search results (According to Vishal Gaikar, 2012). There still are SEO experts who do engage in creating paid backlinks for their campaigns. However, with algorithms updating daily, such sites are likely to suffer in the future.

Impact: In Vishal Gaikar's second blog titled "How to Recover from Google Penguin", he talked about the Penguin Algorithm impact on the rankings and the traffic of the website, and he gave a few suggestions on how to adapt with the change. According to Vishal, the changes due to Google caused many websites to have massive fluctuations in traffic, and a negative impact on website visibility. In research by Manish Maheshwari, Roohi Ali, webmasters reported up to a 90% of the drop in website traffic. Along with the traffic, and rankings, the impact also extended to a loss in regular visitors and page views.

Vishal went further to give suggestions on how to recover after the Penguin update. He suggested that SEO experts must "de-optimize" websites by getting rid of various irrelevant links and keywords to "refresh" the website after being affected by the update. He suggested at least 20 percent of links be relevant according to website content. However, now after almost 10 years of this update, it is recommended for most backlinks- if not all to be from relevant sites. He also suggested avoiding those backlinks which are considered spam by Google (paid, or websites with high spam scores).

C. PAGE EXPERIENCE UPDATE:

Google and other search engines put immense effort to provide an uninterrupted user experience, in order to maintain the trust of their users. To popularize itself and keep surfers longer on the search engine, Google started considering user experience online potent. According to the research carried out by Roohi Ali in 2012, the practice of focusing on overall user experience comes unsurprising, because of the massive increase in internet users accessing search engines through mobile, desktop, and tablet versions (Manish Maheshwari, 2013).

Google Search Central Blog states that page experience update is a set of signals that helps Algorithm measure users experience of interacting with web page beyond its content, on mobile and desktop version. This means, user experience is integrated and is considered a major ranking factor in the year 2022. Further on Google Search Central Blog, it was stated that the metrics used to monitor user experience include the core web vitals. The core web vitals report categorizes URL performance according to its status (poor, needs improvement, good), metric type (CLS, FID, LCP), and URL group (groups of similar web pages). The report is based on three metrics derived from real-world user data: LCP, FID, and CLS (More on this is explained in the table below)

Core web vitals essentially include loading performance, interactivity, and visual stability of the page as explained further on the page. Along with it, mobile-friendliness, HTTPS, and intrusive interstitial guidelines are also considered major factors. It was also further clarified, that websites providing the greatest page experience do not override the page content. However, it is considered equally important for visibility in search, especially for websites with many pages.

- **CLS:** In Cumulative layout shift, the impact of unexpected layout shifts is assessed when a user is browsing through a webpage.
- **LCP:** The core web vital called largest layout shift monitors the time or speed taken by server to display the largest visible element on the viewport. Example: time taken to load a large-size image.
- **FID:** First Input Delay (FID) is a Core Web Vital that measures the time in milliseconds between when a user interacts with a website for the first time & the time browser is able to respond to that interaction.
- **Mobile-Friendliness:** The Mobile Usability report on Google Search Console identifies the property's pages that have usability issues when viewed on mobile devices.
- **HTTPS:** The HTTPS report on Google Search Console displays the number of indexed URLs on your site that is HTTP vs HTTPS. This status tells users whether a site is secure or not. (HTTPS portrays a secure site, and HTTP portrays not secured to users). Google strongly advises using HTTPS for your site to protect the security and privacy of your users.

Page experience updates for the desktop and the mobile version have been rolled out in the past (example: April 2021 update). However, recently, Google announced page experience update to roll out in February 22nd on the desktop version. During which, we monitored the impact of this algorithm update on a test website by tracking overall traffic and organic traffic through Google Analytics.

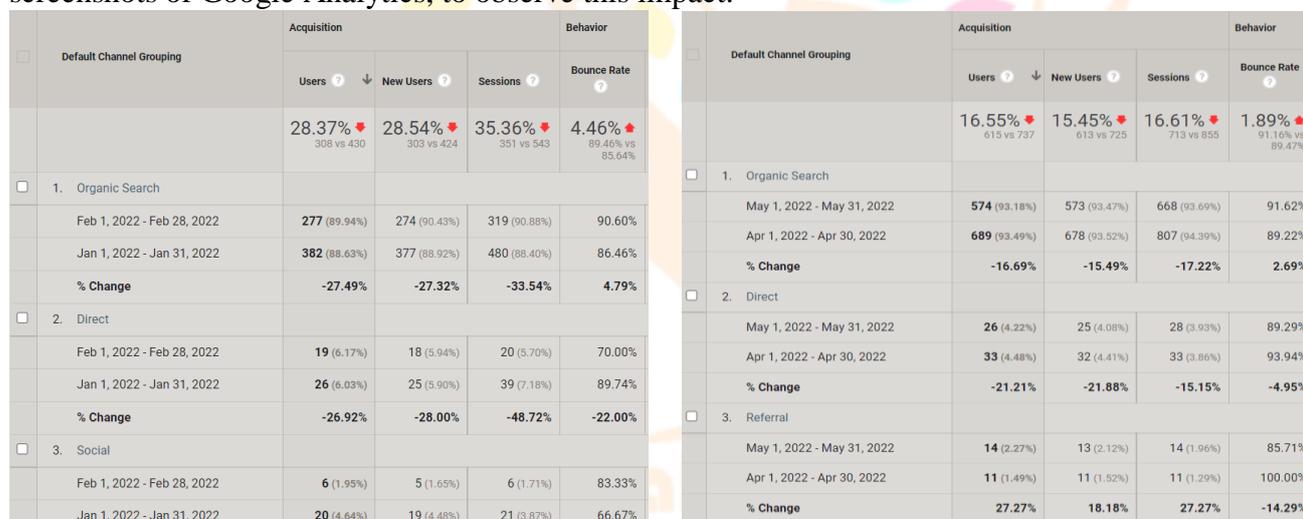
D. IMPACT OF PAST ALGORITHM UPDATES ON WEBSITE TRAFFIC

Various metrics including overall traffic, organic traffic, referral traffic, and direct traffic were tracked on a test website from Google Analytics as displayed in the table below. By executing SEO tactics, the brand was experiencing constant growth till the month of January. However, algorithm updates such as page experience update in February 2022, May broad core update in 2022, and product reviews update in March 2022 had a significant impact on website traffic. During these months, fluctuations were observed, a thorough site audit was conducted to determine the causation, and improvements were made to the website accordingly.

Table 3.4.1 Impact of Past Algorithm Updates on Website Traffic

Month	All Traffic	Organic	Direct	Referral	Algorithm
1/Dec/22-31/Dec/22	422	344	32	0	No Change
1/Jan/22-31/Jan/22	543	480	39	3	No Change
1/Feb/22-28/Feb/22	351	319	20	5	Page Experience Update
1/March/22-31/March/22	831	772	34	7	Product Reviews Update
1/April/22-30/April/22	855	807	33	11	No Change
1/May/22-31/May/22	713	668	28	14	May Core Update
1/June/22-30/June/22	822	774	28	8	No Change

Fluctuations in Traffic: During the page experience update in February 2022, the overall and organic traffic had dropped significantly from 543 sessions to 351 sessions, and 480 sessions to 319 sessions significantly. And during Broad Core Update in May 2022, there was a sharp decline as well, where from 855 sessions, the overall traffic reduced to 713 sessions, and from 807 sessions- organic traffic reduced to 668 sessions in a month. However, in March, no changes or impact was experienced on the digital marketing results. Refer to the below screenshots of Google Analytics, to observe this impact.



(Source: Data from Google Analytics)

Table No. 3.4.2 - Google Analytics, to observe this impact.

A) Reason behind the change in traffic:

February (Page Experience Update): As discussed in (VII), and according to Google Search Central Blog, along with mobile version, “Core Web Vitals metrics: LCP, FID, and CLS, and their associated thresholds will apply for desktop ranking”. After a thorough Google Search Console Review, CLS issues were discovered on the desktop version.

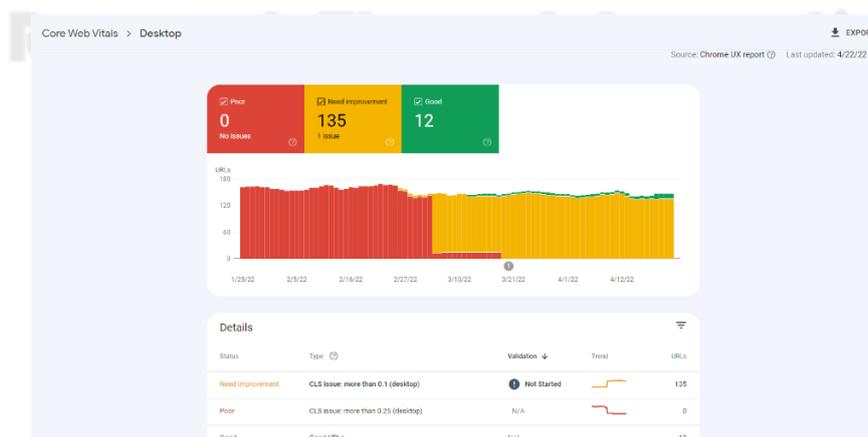


Table No. 3.4.2 - Google Search Console Review

May (Broad Core Update): Along with February, there was a sharp drop in traffic in the month of May, when the core update was rolled out. However, proper information about this update was not made public by Google. Hence, the reasoning behind the drop in traffic cannot be given firmly.

March (Product Reviews Update): The website is information based and does not have reviews. Hence, there were no negative changes observed in website traffic during March.

B) Improvements made:

(During Page Experience Update): Following a thorough Google Search Console review, improvements were made to improve the page experience on both mobile and desktop versions. Working with developers to resolve CLS and LCP issues and removing less important plugins helped to improve the site's performance. In addition, the lazy loading plugin was installed, low-size images were used, and sign-up forms that contributed to page load speed were removed.

(During May Broad Core Update): In the month of May, during the core update- as the details for algorithm update were unclear, small tweaks were made to the website. Content was revamped after understanding target audience. Furthermore, backlinks were audited, and links were disavowed.

C) Results in Website Traffic:

After Page Experience Update: Conducting thorough review, and resolving CLS, and LCP issues helped to stabilize the traffic. There was an increase in traffic noted, where the overall traffic improved from 351 sessions to 831 sessions, and organic traffic improved from 319 to 772 sessions.

After May Broad Core Update: There was not a massive change in the traffic after the May Broad Core Update. However, after the drop in traffic, the website performance did stabilize as the overall sessions increased from 713 to 822 sessions, and the organic sessions increased from 668 to 774 sessions.

IV. CONCLUSION

The focus of marketing for a brand is to always stay at the forefront of customers' minds whenever the need for our product arises. The same is true for search engine optimization, where the only difference is that we try to achieve this by staying on the first page of search results.

Like traditional marketing, where we try to keep up with changes in external factors, the same is true in digital marketing. The only difference is that we must keep up with current trends, customer preferences, and algorithm updates. Because the algorithm is frequently tweaked to provide users with relevant results based on their queries, our SEO tactics should be updated to reflect these changes. To prove this, we can see from this study that a change in algorithm can influence our marketing strategy. And we can also see how making improvements following search engine best practices can help us improve it.

Thus, to conclude, we can say that it is quintessential to learn about Google Algorithm, follow its best practices, and stay updated with its current changes. As that is the only way for us to gain an advantage in the industry, and it also helps our brand keep standing, despite the external factors of digital marketing.

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