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Enhancing Website Visibility: Implementing SEO Techniques for Improved Search Engine Ranking

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Abstract: ***The Internet is a very important tool in today's technological age for a variety of purposes, especially when it comes to business promotion. Building a website that offers its users useful content is a crucial step in any online business promotion campaign. But simply having a website is not enough to increase traffic; you also need to ensure that it appears high on search engine results pages (SERPs). A very successful way to accomplish this is by using search engine optimization (SEO) strategies. These approaches use strategies including content refinement, link building, and keyword research to increase a website's exposure on search engine results pages. However, it's critical to recognize that SEO is a continuous process rather than a one-time event. Maintaining good search engine rankings and sustaining the profitability of your online business requires consistent attention and work. By optimizing your website carefully, you may increase its visibility in search results, draw in more visitors, and eventually promote business growth. Thus, it's critical to stick to your SEO tactics to maintain good search engine results and guarantee ongoing success for your online business.***

Keywords: Website, Search Engine, Search Engine Optimization (SEO), Page Ranking Algorithm, Business Promotion.

I. INTRODUCTION

The evolution and complexity of information technology have resulted in the emergence of various types of websites as providers of information. Currently, the internet hosts numerous websites, making traffic a crucial aspect for website owners as the success of a website is often contingent on its traffic volume. A lack of visitors can significantly impact those utilizing the Internet for business purposes. According to research conducted by the Association of Indonesian Internet Service Providers (APJII) in 2014, Indonesia had 88.1 million internet users, with 68.7% of them actively seeking information [1]. This presents a significant opportunity for websites to attract a large number of visitors. Furthermore, a 2017 survey by APJII revealed that 75.5% of Indonesians aged 13-18 are active internet users. Implementing effective SEO techniques offers a solution to ensure that your website gains visibility on search engine platforms and appears prominently in search results [2]. We applied SEO strategies to an e-commerce site catering to small and medium-sized enterprises in Indonesia, validating their positive impact on sales. These strategies are integral to boosting the online presence of culinary entrepreneurs, who utilize social media as part of their marketing efforts to engage customers, improve product quality, and pricing. Various channels can drive traffic to your website [3], with search engines being a primary source. Users typically input keywords into search engines when looking for information, making it crucial for your website to be well-indexed by search engines to appear on the first or second page of search results (SERPs). Employing search engine optimization (SEO) techniques is essential to ensure your website's visibility to search engines [4]. These techniques enable your website or blog to rank higher in Google search results, attracting more visitor traffic, which is the ultimate goal for website or blog owners. In light of these considerations, the central question becomes: How can your website or blog achieve a top-ranking position in Google search results and increase traffic? The goal of implementing SEO techniques on your website or blog is to enhance its search engine ranking, particularly aiming for the top spot in Google SERPs, thereby maximizing the effectiveness of on-page SEO methods. Additionally, the successful implementation of SEO techniques serves as evidence of their efficacy and functionality [5].

II. LITERATURE REVIEW

A. Internet

The Internet, also termed interconnected networking, constitutes a global system interlinking all computer networks utilizing the Transmission Control Protocol/Internet Protocol (TCP/IP) communication protocol standard. This connectivity enables every user with an internet-connected computer to access services provided by other computers, including data, images, videos, and audio exchange, directly as per [6].

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B. Web

The World Wide Web (WWW) or Web represents one of many services accessible on the Internet. This service is widely utilized for information transmission due to its multimedia support, encompassing not only text but also images, videos, sounds, etc. In technical terms, a website comprises pages grouped under domains or subdomains on the World Wide Web. A homepage denotes the initial page of a website featuring text, images, or specific format-based information chosen by the website owner. Additionally, the homepage may encompass page nodes or a table of contents for other website pages. Visitors can access a website directly, often landing on the homepage, or indirectly through search engines, directed to specific pages based on entered keywords [7]. A homepage typically loads automatically upon opening a browser for the first time, facilitating quick access to frequently visited sites. Hypertext Transfer Protocol (HTTP), an internet protocol defined in various Requests for Comments, facilitates viewing HTML documents via web browsers by requesting web server content through URLs. Web servers store web documents and handle client requests, with browsers like Explorer and Navigator using HTTP for communication [8].

C. Search Engine

Search engines Figure 1 are online platforms created to explore multiple information sources across the World Wide Web (WWW), File Transfer Protocol (FTP), and mailing list services. These platforms display a wealth of information sourced from various websites in their search results. They serve as specialized tools on the internet aimed at assisting individuals in locating information stored within other web pages. While there are differences in how different search engines operate [9], they typically perform three primary functions. Firstly, they crawl or scan the internet, searching for significant keywords and content. Next, they create an index of these discovered words and their respective locations. Finally, users can utilize the search engine to look for specific words or phrases within this index [10].

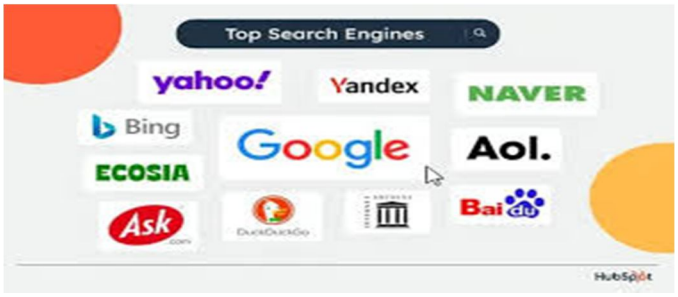


Figure 1 Search Engine

D. Search Engine Optimization

Search Engine Optimization (SEO) Figure 2 involves strategies aimed at enhancing website visibility on popular search engine results pages, thus increasing organic traffic. SEO encompasses two methods:

1) On-page SEO involves optimizing website elements like title tags, header tags, text formatting, alt-image tags, and meta tags (keywords, description) to improve search engine ranking.
2) Off-page SEO focuses on optimizing external factors such as inbound links from related websites [11], utilizing anchor text, and assessing the linking page's title, page rank, and thematic relevance to the linked website. Other SEO factors include maintaining a user-friendly site layout, ensuring customer satisfaction, marketing efforts, and ease of access.

On-page SEO entails web optimization through adjustments to website components, impacting search engine evaluations by optimizing title tags, meta keywords, meta descriptions, and creating high-quality content [12].



Figure 2 Search Engine Optimization

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III. RESEARCH METHODS

The development approach utilized in this study follows the linear sequential method, commonly known as the waterfall method [13]. Here is an overview of the phases conducted:

A. Analysis

During this stage, essential analysis is performed to facilitate the creation of an SEO plugin application for WordPress.

B. Design

This phase involves converting analyzed data into a user-friendly format, which includes developing SEO applications and constructing SEO-enabled websites.

C. Coding

The previously designed system is translated into a coding program using the PHP programming language.

D. Testing

Trials and evaluations of the system are conducted on a local server during this stage. If the system performs well, it is then implemented on website hosting.

E. Maintenance

In this phase, improvements are made if the system encounters functionality issues or errors under specific circumstances [14].

IV. RESULTS AND DISCUSSION

A. System Analysis

Before initiating the system creation process, it is essential to analyze the system to be developed, especially when designing an SEO system. This analysis aims to identify the necessary steps to address existing issues [15]. Several factors can hinder a website's ranking on search engines. Below are key actions website owners should take:

1) On-Page Optimization

Website owners should focus on on-page optimization, including setting up the homepage title, meta description, and meta keywords. These optimizations contribute to a well-structured website that is easier for search engines like Google to interpret [16].

2) Article Optimization

Optimizing individual article pages is crucial and mirrors the processes involved in homepage optimization. This optimization encompasses titles, descriptions, and keywords.

3) Keyword Research

To achieve top rankings on search engines, conducting thorough keyword research is essential. This involves identifying and using keywords that align with what users typically search for.

4) Off-Page Optimization

In competitive environments, off-page optimization becomes crucial for success. These efforts focus on factors external to the website itself, such as building high-quality backlinks.

These challenges are the focal points addressed in this study. Implementing a system to tackle these challenges will significantly simplify the SEO process for website owners [17].

B. Analysis Solutions

1) Google Algorithm

Google faces intense competition from other search engines like Yahoo, Yandex, and Bing, prompting continuous updates to its algorithms for improved competitiveness. Google's algorithms Figure 3 are designed to prioritize user satisfaction, ensuring search results match entered keywords.

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These algorithms analyze various aspects of websites, including domain names, titles, keywords, and content, influencing a website's ranking on search engine results pages (SERPs). Google's algorithm updates also aim to enhance user experience and relevance, shifting towards human behavior-based ranking factors.



Figure 3 Google Algorithm

2) Keyword Research

Effective keyword research Figure 4 is vital for successful website optimization. Different types of keywords exist, each with unique characteristics:

a) Short Tail Keywords: Consisting of two or three words, these keywords have high competition levels and require thorough SEO optimization efforts.

b) Long Tail Keywords: Longer than short tail keywords, these are derivatives of main keywords and offer moderate competition levels, making them suitable for new websites.

c) Evergreen Keywords: Timeless keywords that consistently attract searches over time.

d) Seasonal or Trending Keywords: Temporary keywords based on current trends or events.

To conduct keyword research, tools like Google AdWords Keyword Planner, UberSuggest, and Keyword Tool are valuable resources. The research process involves identifying main keywords, finding derivative keywords, analyzing search volume and competition levels, and assessing keyword trends [18, 19].



Figure 4 Keyword Research

C. On-Page Search Engine Optimization

The initial step in website optimization is on-page SEO, focusing on organizing the website structure for better readability by search engines like Google. Key steps in on-page SEO include:

a. Home Page Figure 5 Title Tag: The primary keyword and main title of the website, crucial for search engine recognition.

b. Meta Description: Descriptive text that explains the title tag, attracting both Google's attention and user interest.

c. Meta Keyword: Main keywords representing the website's topic, aiding search engine interpretation.

d. URL Optimization: Optimizing URLs or links for improved search engine rankings, with keywords in URLs enhancing topic relevance [20].

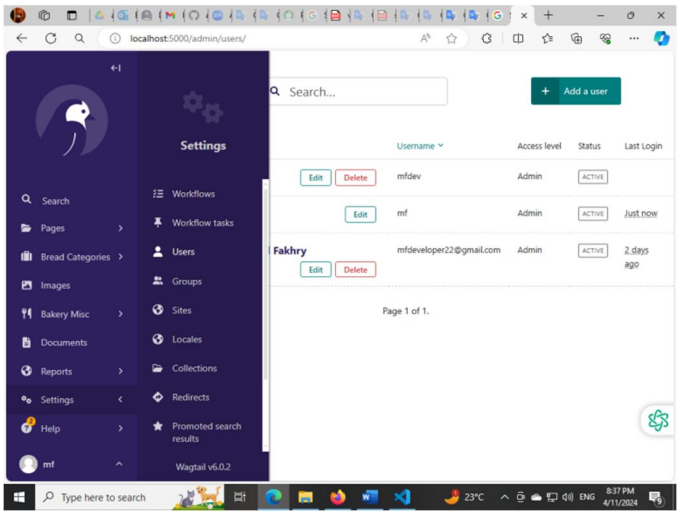


Figure 5 Home Page Setting

D. Creating Optimized Content

High-quality and comprehensive articles significantly contribute to search engine visibility. Important elements of optimized content include [21]:

1) Catchy Title: Captivating titles attract users and improve click-through rates.
2) Complete Articles: Thorough and informative content reduces the need for users to seek information elsewhere.
3) Visual Elements: Including images and videos to enhance understanding and engagement.
4) Use of Videos: Supplementary videos add value to articles and enhance user experience.

E. Optimize Search Engine Off-Page

Off-page SEO focuses on external optimization efforts to complement on-page strategies. Key factors include:

1) Quality Backlinks: High-quality backlinks significantly impact search engine rankings.
2) Anchor Text in Backlinks: Using anchor text in backlinks enhances their relevance and impact.
3) Active Social Media Presence: Social media promotion boosts website popularity and visibility, influencing search engine rankings [22].

V. CONCLUSION

In summary, search engine optimization (SEO) plays a pivotal role in enhancing a website's position on search engine results pages (SERPs). Through the application of diverse SEO techniques, website operators can refine their websites to achieve higher rankings in search results. This heightened visibility can lead to increased website traffic, contributing to business expansion. The optimization process encompasses both on-page and off-page strategies. On-page optimization involves refining website content, such as conducting keyword research and optimizing content. In contrast, off-page optimization centers on enhancing the website's authority and credibility through link building.

Apart from the technical aspects of website optimization, the significance of quality content cannot be overlooked. Websites featuring high-quality content are more likely to draw and retain visitors, resulting in enhanced traffic and improved search engine rankings. It's important to acknowledge that SEO is an ongoing endeavor necessitating consistent attention and effort. As search engine algorithms undergo changes and advancements, website operators must adjust their SEO tactics to remain competitive and uphold high rankings.

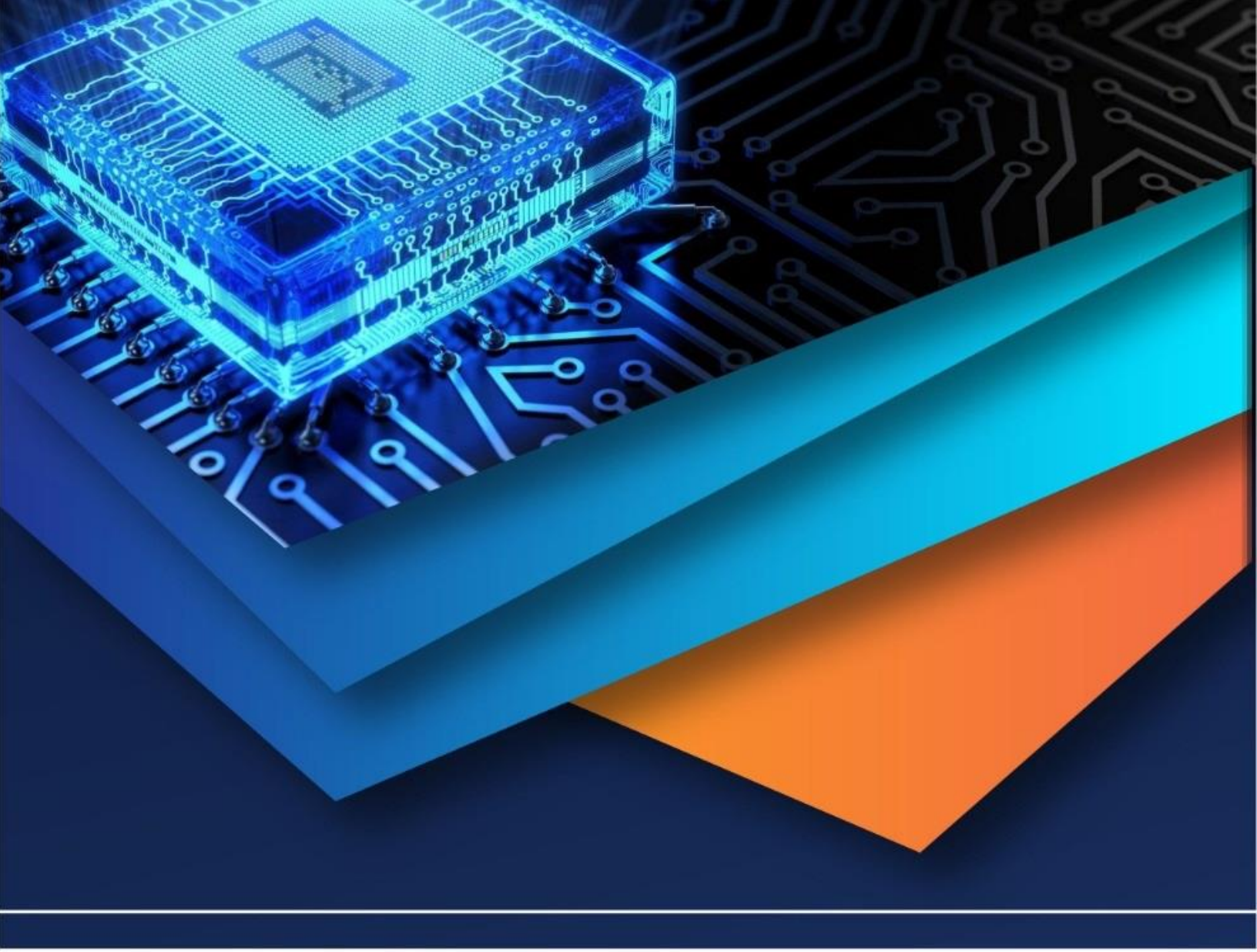
In essence, employing SEO techniques is essential in determining a website's standing on search engines. Through effective SEO strategies, website owners can elevate their website's visibility, attract a larger audience, and ultimately achieve success in their endeavors.

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