The Importance of Modern SEO in the Success of Online Businesses

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Abstract

This study examines the dimensions of Search Engine Optimization (SEO), the enhancement of search experience, and the role of Artificial Intelligence in transforming and improving their performance. First, the main concepts of the internet, the web, search engines, and website optimization methods are introduced. Then, the relationship between AI and search engines is explored, with a focus on the role of AI in improving SEO processes. In the research methodology section, a cascade approach has been employed to develop and implement software optimization models. The findings indicate that both internal and external SEO optimization, with an emphasis on modern techniques, contribute to improving website rankings in search results. Additionally, the impact of AI in data analysis and the continuous optimization of SEO strategies is discussed. Finally, the article highlights the importance of continually adapting SEO techniques to changes in AI-integrated search engine algorithms and the necessity of producing high-quality content.

Keywords: *Website, Search Engine, Search Engine optimization (SEO), Search Experience Optimization, Online Business, Artificial Intelligence.*

1   Introduction

The advancement and increasing complexity of information technology has led to the emergence of various types of websites as providers of information, services, and products. Currently, there are numerous websites on the internet. For example, according to the latest report in 2024 by Hostinger [1], approximately 810 million websites are built using WordPress as a content management system, which is estimated to account for only about 43% of all websites globally and around 62% of websites with a known content management system (Figure 1).

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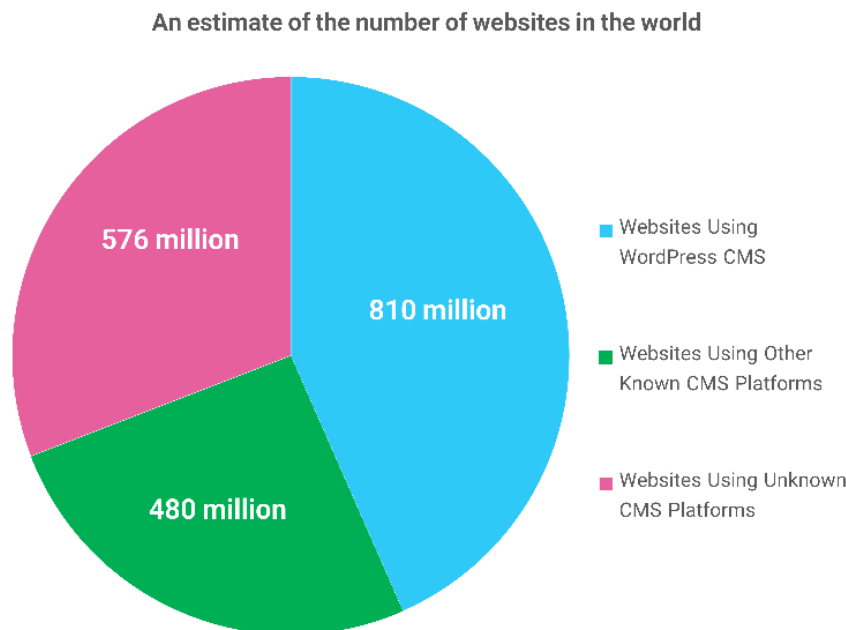
An estimate of the number of websites in the world

Figure 1: A representation of global websites and their respective content management systems

For website owners, site traffic is an important factor that requires attention, as the success of a website is typically determined by its traffic. Additionally, maintaining a website not only requires time but also incurs costs, and a lack of visitors can negatively impact those who have launched their websites as an online business.

Implementing Search Experience Optimization (SXO) techniques—or a somewhat similar earlier concept known as Search Engine Optimization (SEO)—offers a solution to ensure that a website is optimized both for users and visitors searching for the content provided on the site and for search engines. This allows the site to be more easily recognized and ranked higher, thus appearing on the first page of search results. Increasing sales is one of the reasons businesses need SEO. Of course, other ways can drive traffic to a website, and search engines are just one of them [2], which is the focus of this paper. Typically, searchers enter relevant keywords into search engines and visit the websites that appear on the results page. This has created competition among websites operating in similar domains [3]. Therefore, to increase the chance of attracting traffic to the website, it is essential to ensure that the website is sufficiently indexed by search engines to increase the likelihood of appearing on the first page. To make a website easily identifiable by search engines, Search Engine Optimization (SEO) techniques must be employed [4, 5].

Paying attention to these SEO tips, which will be discussed later in the paper, provides a way for your website or blog to appear higher in the search engine results

Figure 2: A view of a search engine results page (SERP) in a browser [7]

page (like Google or Bing) and attract more visitor traffic. Thus, the overall goal of implementing SEO techniques on a website or blog is to improve its ranking in search engines, specifically achieving placement on the first page of search results (SERP), indicating that SEO optimization methods are working effectively [6] and are impactful (Figure 2).

2   Literature Review

In this section, we will review concepts and previous research related to the topic of this study. First, a brief explanation of the internet and the web, as the main foundations of digital communication, will be provided to clarify their differences. Then, the functionality of search engines and their impact on website optimization strategies will be examined. Finally, the role of artificial intelligence (AI) in transforming and improving search engine performance, along with its challenges, and its influence on website optimization strategies will be discussed.

It is important to note that the findings and information in this field are sometimes based on data and documentation published by the search engine providers themselves. However, in some cases, these results are derived from leaked internal information from these companies (which at times contradicts their officially published documents regarding SEO metrics). Additionally, practical experiences and analyses from SEO specialists working in digital marketing agencies, who are directly involved in website optimiza-

tion, have been referenced. This combination of various sources leads to a deeper understanding of how search engines function and how their optimization strategies can be improved.

2.1 The Internet and the Web

The Internet, known as a network of interconnected networks, is a global system that connects all computer networks using the TCP/IP (Transmission Control Protocol/Internet Protocol) standard, allowing any user with a digital device, such as a computer or mobile phone, to access services provided by servers or other users. As a result, the widespread penetration of the internet has had a positive impact on the advancement of technology, particularly in the fields of information and communication [8]. This includes the exchange of data, images, videos, and sound [9].

The World Wide Web, or the web, commonly referred to as "www" is one of the services available on the internet and is widely used for transferring data across the internet, as it supports multimedia. In other words, information is transmitted not only through text but also via images, videos, sounds, and other files. In terminology, a website is defined as a collection of web pages typically grouped under domains or subdomains on the World Wide Web. The homepage of a website contains text, images, or information arranged in a particular format determined by the site owner, often with the help of a web designer. The homepage may also include links to other important pages or a table of contents for the site's pages. Visitors can access a website directly or indirectly. For direct access, visitors are usually directed to the homepage, but for indirect access (often through search engines), they are led to a non-homepage that contains keywords they searched for [10]. Today, SEO specialists and content creators strive to develop dedicated, optimized pages for specific keywords, which are referred to as landing pages.

2.2 Search Engines

Search engines are websites designed to search for various information resources across other websites. In addition to websites, many search engines now offer installable applications. Search results display a wide range of data from different websites as information sources, helping users find content stored on other sites. While search engines use different algorithms and methods to display results, fundamentally, every search engine scans portions of the internet for important keywords and presents the relevant words and phrases to users [11]. Some search engines increase search speed by scanning portions of the internet offline, storing them in a history-like cache, and regularly updating them.

Table 1: Examples of On-Page and Off-Page Optimization

On-Page Optimization	Off-Page Optimization
High-quality, informative content (not just promotional)	Use of anchor text links
Page title tags	Relevance of the page title
Heading tags	External page ranking
Bold, italic, and underlined keywords	The topic of the website providing a meaningful link to your site
Alt tags for images	
Meta tags (keywords, descriptions)	
Linked keywords	

2.3 Search Engine Optimization (SEO)

Search Engine Optimization (SEO) is an effort to make websites more popular without the need for paid advertisements. However, this approach involves other costs, such as lightweight, fast, and optimized coding and programming, as well as the expenses associated with content production, including hiring writers for article creation or even studio teams for producing high-quality videos. SEO typically consists of two main components: on-page optimization [12], which includes elements you can often modify directly from your website's content management system, and off-page optimization, which involves creating content and referral links to your site from other websites. These components are further detailed in Table 1.

It is evident that optimization elements evolve over time. Other important factors also influence SEO, such as having a well-designed website and ensuring user and customer satisfaction

2.4 Search Engines and Artificial Intelligence

Search engine service providers, in addition to offering standalone AI services like interactive chat, are now aiming to integrate AI-generated answers and summaries directly into search result pages. While this raises legal and intellectual property concerns regarding the ownership of website content, it also impacts SEO optimization strategies. Previously, content creators would meticulously include all possible keyword variations because search algorithms operated on an exact match basis, where even a single character change could affect results. However, with AI integration, search engines now perform semantic understanding beyond simple keyword matching.

Critics argue that such algorithms can obscure search results, making ranking methods less transparent and even causing a decline in search engine performance. Despite these concerns, search engine providers are continuously improving their algorithms and result quality to maintain their position in this highly lucrative market. The search industry, though expensive and energy-intensive, has proven to be extremely profitable for the leading providers, despite the challenges faced by many companies in achieving
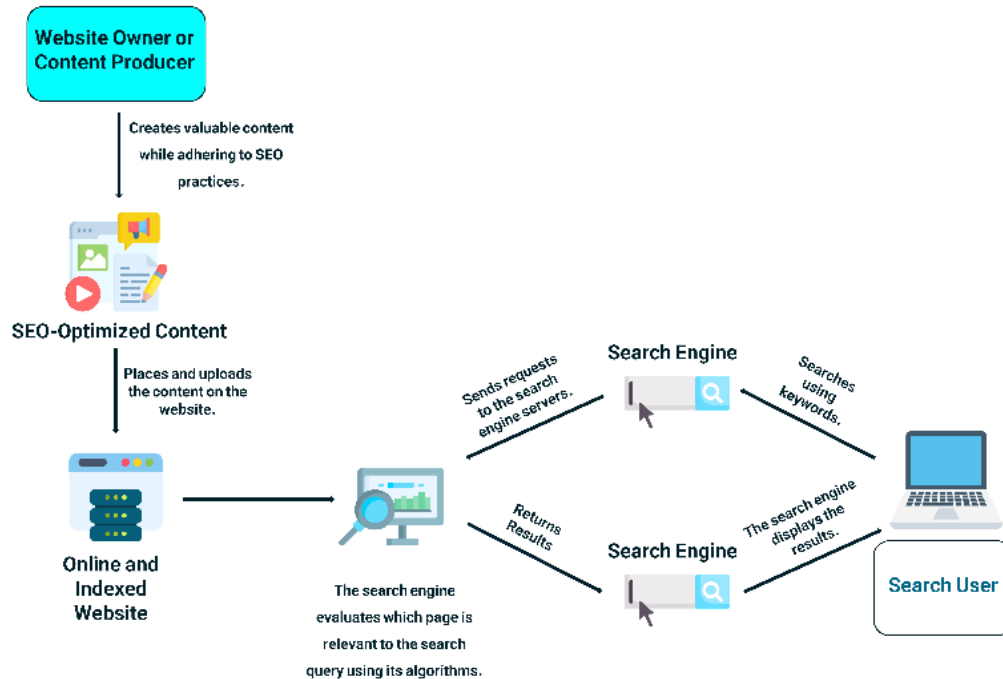
Figure 3: Diagram of the Search Process and Interaction Between Search Engine Users and Website Content Owners

success.

Artificial intelligence is shaping a new era of SEO, providing new opportunities for both search engine robots in ranking and website owners in optimization. AI can now interpret content more holistically, eliminating the need for content creators to include all variations of keywords or synonyms, thereby streamlining content production, search, and user delivery processes (Figure 3). However, this also introduces challenges, such as the need for software, content, and even structural changes on websites, as well as increased hardware processing costs for search engine service providers.

3   Research Methodologies

This research follows a five-step system development methodology, illustrated in Figure 4, which is based on the sequential or waterfall model. Initially, the necessary analyses are conducted for implementing and creating an SEO plugin for a website's content management system (CMS), such as a WordPress plugin [13]. Subsequently, the analyzed data is translated into a design that is user-friendly, and the SEO strategies for the target website are incorporated into the system design.
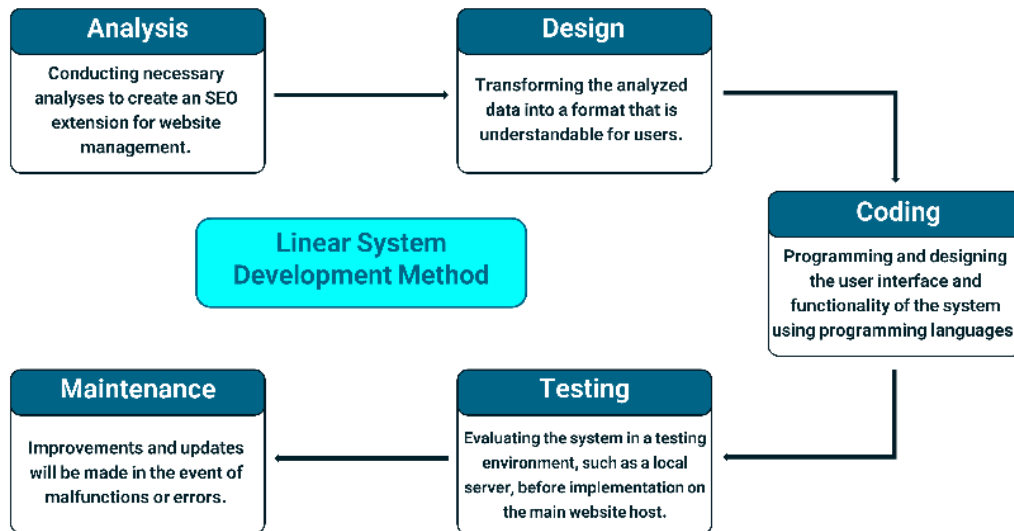
Figure 4: System Development Structure for Designing and Building an SEO Plugin

The system is then implemented as a coded application using programming languages like PHP, which is compatible with WordPress and Linux-based hosting services. During the testing phase, system evaluations are conducted in a simulated environment, such as a local server, to ensure the system functions properly before being deployed on the website's host. Finally, in the maintenance phase, updates and upgrades are applied to resolve issues such as system malfunctions or errors [14]. The developed software system must be capable of addressing both on-page and off-page SEO optimization needs, as well as providing AI tools for content generation and SEO status analysis.

4 Findings

Search Engine Optimization (SEO) is a multifaceted process that begins with problem analysis and the identification of needs [5]. Developing a system for SEO [15], where software plays a crucial role, significantly simplifies the process for website owners and makes SEO implementation more straightforward [16].

4.1 On-Page SEO Optimization

Website owners must first focus on optimizing the internal elements of their web pages. This optimization involves the proper configuration of page titles, content headings, meta descriptions, and relevant keywords. These elements are essential for structuring the website and aiding search engines in better understanding and interpreting the

content of the pages [17]. Furthermore, the visual appeal and page loading speed, which are partly the responsibility of content creators and partly the responsibility of programmers, should not be overlooked. These factors not only affect the rankings of search engines but also significantly impact user satisfaction, which is the ultimate goal. By implementing these changes, the website becomes more understandable for search engines and delivers well-organized and high-quality content to users, increasing user satisfaction and the likelihood of return visits or service and product purchases.

Search engine algorithms are continuously updated to provide a better user experience during searches. These updates are typically based on better analysis of user behavior and the delivery of more relevant content. One key factor in ranking on search results pages is user behavior, such as the time spent reading articles. This underscores the importance of content quality [18], which plays a crucial role in attracting users and encouraging them to spend more time on the website. Therefore, understanding the stages of optimization and conducting thorough keyword research are essential prerequisites for improving SEO. Keyword research is one of the most critical aspects of SEO, as it directly impacts the number of visitors attracted to the website. Choosing the right keywords is of utmost importance [19]; if chosen incorrectly, the website may not receive the appropriate traffic. Keywords can be categorized into short-tail, long-tail, and seasonal, each playing a vital role in the optimization process.

Short-tail keywords typically have high competition and were historically the most common search terms. However, over time, users have learned to input more detailed queries to achieve more precise results, leading to the prominence of long-tail keywords in search displays. Long-tail keywords generally have lower competition, though their significance has become more apparent to many business owners today. Seasonal keywords are those that are active during specific times of the year. For example, travel companies see a surge in traffic during holiday periods, stationery and office supply retailers during the back-to-school season, gift-giving businesses around festivals, and companies dealing in steel and construction materials in particular seasons of the year. This trend mirrors that of traditional physical markets, where businesses, through experience, understand which times of the year bring more customers. Today, in addition to competitor analysis, there are commercial tools available that can assist website owners in identifying the most effective keywords and applying them correctly.

4.2   Off-Page SEO Optimization

As previously mentioned, on-page SEO requires a focus on the technical and content elements of a website. This includes optimizing web pages, meta descriptions, keywords, and URLs (i.e., the addresses of the website's internal pages) [20]. However, with advancements in search engines or the introduction of new ranking criteria, additional elements may be introduced, or the current ones may lose their significance. Regardless, keeping these measures up to date ensures that search engines can correctly interpret the site's content, leading to improved search result rankings. Additionally, the use of

high-quality content, appropriate images, and videos can play a key role in increasing user engagement and boosting the website's ranking over time.

Off-page SEO is another crucial factor in improving search engine optimization. This encompasses activities conducted outside the website itself, such as building high-quality backlinks [21], along with valuable content and social media engagement [22]. Social media activity not only contributes to marketing efforts and attracting traffic and new customers [23], but also serves as a backup for your website's content. If you value your textual, visual, and video content, as well as other files such as PDFs, sharing them on social media and messaging platforms can ensure that if there is an issue with your site and content is lost, it can be recovered from these platforms. Although there are no absolute guarantees regarding the long-term availability of these social platforms, careful research can help you choose more reliable and valuable options. Search engines place significant importance on backlinks, as well as brand mentions without links, particularly those coming from reputable and relevant websites. The higher the quality of these backlinks, the more positive the impact on a website's ranking.

Therefore, to achieve optimal SEO results, website owners must pay close attention to both on-page and off-page optimization. This process not only involves technical optimization but also requires delivering high-quality content and fostering meaningful interactions with users via social media and other relevant platforms.

4.3   The Impact of Artificial Intelligence on SEO

In recent years, Search Engine Optimization (SEO) has become a vital component of digital marketing. However, traditional SEO tactics are no longer sufficient to keep up with the constantly evolving search engines and changing customer behavior. Artificial Intelligence (AI) has emerged as a game-changer in the SEO landscape, providing marketers with new methods and tools to optimize websites and content for search engines.

With the increasing integration of AI, search engines have improved their ability to understand user intent and deliver more accurate and relevant results. Consequently, businesses must optimize their websites and content more effectively to stay competitive and drive traffic.

Artificial Intelligence (AI) is a technology that enables computers or machines to perform tasks similar to those carried out by the human brain. In today's world, advancements in AI are being applied across nearly every aspect of life. In conjunction with digital marketing, AI simplifies how companies connect with customers at the right time.

The e-commerce sector has seen significant growth in recent years due to the rising popularity of online shopping and greater access to the internet and mobile devices. As a result, e-commerce websites are increasingly competing for customer attention and transactions. Companies are investing more in their digital strategies and e-commerce products, including enhancing user experience and developing more sophisticated and

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personalized marketing efforts. They are also leveraging analytics and big data to gain insights into customer behavior, allowing them to deliver better-targeted marketing messages and products. With so many businesses competing for similar customers, e-commerce websites must keep their digital strategies and services up to date to remain competitive.

AI has a promising future in digital marketing. It can assist marketers in analyzing vast amounts of data and making more intelligent marketing decisions. Additionally, AI can help personalize marketing messages and deliver more targeted ads based on customers' specific preferences.

One of the most significant advantages of AI in digital marketing is its ability to automate many repetitive tasks. Data entry, content development, and social media management are examples of such tasks. This allows marketers to focus on more strategic activities like data analysis and developing new marketing initiatives.

In the future, we can expect to see more AI-powered chatbots and virtual assistants that provide personalized services and support to customers. Additionally, more AI-driven marketing automation products are likely to emerge, helping companies optimize their marketing operations and increase overall return on investment (ROI) [24].

AI technology can enhance a website's visibility in search engine results pages (SERPs). AI can analyze website content and optimize it for specific keywords and phrases relevant to a particular industry or niche. It can also identify technical SEO issues and suggest solutions to fix them. AI can help identify opportunities for link building, content marketing, and other SEO initiatives while detecting and eliminating harmful files or content. Moreover, AI can track visitor behavior and recommend ways to improve user experience.

By analyzing website content and optimizing it for relevant keywords and phrases, AI can boost a website's visibility in SERPs. By resolving these issues, websites can achieve higher visibility in SERPs [25].

5 Conclusion

Search Engine Optimization (SEO) is a crucial tool for improving a website's ranking on search engines. By effectively applying various SEO techniques, website owners can optimize their sites to achieve higher rankings on Search Engine Results Pages (SERPs). This increased visibility can drive more traffic to the site, which in turn leads to business growth. The process of website optimization encompasses strategies that target both on-page and off-page SEO. On-page SEO focuses on content optimization and the strategic use of keywords, while off-page SEO aims to enhance the website's credibility through backlinks and even unlinked brand mentions.

In addition to technical aspects of the site, such as optimized coding [26] and fast loading times [27], high-quality content is emphasized. Quality content, along with its presentation and layout, plays a significant role in attracting and retaining visitors.

Websites that offer valuable content are more likely to engage users and increase traffic, thereby improving their search engine rankings.

It is important to note that SEO is an ongoing process that requires continuous attention and effort. As search engine algorithms evolve, website owners must adapt their SEO strategies to maintain competitiveness and preserve high rankings.

Artificial Intelligence (AI) can assist in identifying user behavior patterns, which can be used to improve website performance, content quality, and user experience. Additionally, AI can automate repetitive tasks and optimize website maintenance, freeing up resources for further enhancement of website performance, content quality, and user experience [24].

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