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## Website Visitor Analysis & Branding Quality Measurement Using Artificial Intelligence

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### ABSTRACT

This article discusses the use of classification of web visitors and determination of branding quality using AI to redesign digital marketing. AI in its various forms, such as machine learning, natural language processing, and computer vision, helps businesses to better understand their users' behavior, better understand the context of supplied content, and improve user experience. The application of AI in the management of websites offers features such as Real-time monitoring, automated content tuning, and Analytics for predictions. Automated tools can analyze who is visiting the site, what kind of work they are doing in terms of SEO, and how to assist with creating high-quality content. Also, AI helps with mass and targeted promotions like recommended products and services, variable rates of prices, etc. AI can help unlock significant benefits for businesses, across the board and lead to enhanced engagement in the digital space and thus gives a competitive advantage in the market. The article also discusses investment in training and education for consumers to ensure they remain relevant with emerging technologies in AI and the market. By way of illustration and analysis, the article clearly outlines how the incorporation of AI in organizational functions can bring about operational efficiencies and cost savings, as well as result in remarkable improvements in branding and marketing strategies. The article was first completed in 2021 and later I have modified the article with latest updates till date 2024.

### INTRODUCTION

The use of artificial intelligence is something new in our daily lives and there is no reason to think that the hype of this artificial intelligence is likely to go away.

Where is the use of this artificial intelligence? Instagram is currently doing this. Instagram new tool will block the bad comments and users can highlight only good comments (Kietzmann *et al.*, 2018). Utilizing Machine learning technology an AI-based system teaches software, what a decent comment is and what an awful comment is. It turns out that a few days ago, "Staples, a well-known stationery retailer in the United States", made a connection with their popular Easy Button in Artificial Intelligence (Mustak *et al.*, 2021). The stationery company marketed it only as a toy in 2005 and the toy sold well at the time (Varsha *et al.*, 2021). At one point Staples announced that they were upgrading their Easy Button so that buyers could purchase products from Staples. This easy button connects to the Internet with a Wi-Fi connection (Mustak *et al.*, 2021). By pressing this button, the buyer will be able to order the products in staples using voice command. Additionally, you can pose various types of inquiries. For this, Staples is using machine learning technology included in Artificial Intelligence (Prentice *et al.*, 2019). A computer program must upgrade itself continuously when it goes through the process of machine learning. This artificial intelligence will then try to understand what the buyer wants to buy based on the previous information and he will also talk to the buyer (Ameen *et al.*, 2021). If the artificial intelligence does not understand the buyer or understands what he is ordering, he will let the buyer contact the station representative of the Staples organization (Rana *et al.*, 2022). When the

buyer speaks to the representative, the intelligence will listen to their conversation and try to understand what the buyer needs. That way he/she will constantly upgrade himself. Staples is now investing heavily in mobile commerce and e-commerce (Gupta *et al.*, 2024). On the other hand, if we look further, we will see that a billion-dollar industry has developed around "B Chat Bot". At present, 70-75% of the staple stationery vendor's mobile sales are B-to-B and more than half of the revenue comes from the website (Hollebeek *et al.*, 2024). Staples has also started using chatbots experimentally in their mobile applications. The stationery vendor hopes that in the future they will be able to communicate with their vast customers through this chatbot (Suraña-Sánchez & Aramendia-Muneta, 2024). Finally, Staples has updated its mobile app so that shoppers can quickly find their desired product when they visit Staples stores. Now using this application, a buyer can see on a map what kind of products are in the inventory of Staples. If we think back a bit, we can realize that this popular chatbot was nothing but ELIZA back in 1986. This ELIZA replays some of the specific scripts of the patients (Dadas, 2024).



Figure 1: AI in Website Visitor Analysis

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## LITERATURE REVIEW

### Artificial Intelligence

Artificial intelligence also referred to as AI is a subset of computer science that is aimed at engineering intelligent machines capable of exercising human like intelligence (Prentice *et al.*, 2020). This includes copied human interaction and activities to the robots. It has led to the development of intelligent systems that can reason, communicate, and act like human beings (Rana *et al.*, 2022). It includes robotics, speech and image processing, natural language understanding and AI-based problem solving. AI can be described as a set of technologies which can perform those tasks that would otherwise need human intelligence (Dadas, 2024). When implemented in standard business processes, these technologies can learn, act, and decide in ways that are as intelligent as human beings, therefore cutting short the time and reducing cost within business operations.

The main goal of AI is to create sophisticated systems that mimic human cognition and conduct. It opens a lot of possibilities across many sectors, most of which are either concerned or enthusiastic about the possibilities of AI. Also known as the fourth industrial revolution, AI has the potential to solve some of the current problems through use of ML and other AI solutions (Chaitanya *et al.*, 2023). In addition, AI can predict future problems and contribute to emergence of new technologies, industries, and environment (Chintalapati & Pandey, 2022). In a nutshell, AI reproduces and mimics human behavior in machines, including learning, reasoning, and even adaptation (Pandey, 2023). Using AI, users' data can be analyzed and understood, including its comprehension and decision-making abilities that are essential for market forecasting and users' behavior (Yüksel *et al.*, 2023). This capability, also known as data forecasting, is used by enterprises across the globe to enhance their strategies of sales and marketing and increase sales (Gołab-Andrzejak, 2023). Machine learning in marketing AI nowadays is utilized to solve various tasks, including product recommendations, defining the best channels for promotion, customer churn rate and lifetime value estimation, and constructing the customer segments (Chen *et al.*, 2021).

### Importance of AI in Website Visitor Analysis

In the last decade, AI has grown to be more than a theory; it has become a necessity for any organization that wants to be at par with its competition (Hollebeek *et al.*, 2024). At first, AI was simply regarded as a concept of the distant future that will not significantly affect people's lives. Specifically, machine learning, natural language processing (NLP), and computer vision have become indispensable tools in modern marketing and customer analytics (Giglio *et al.*, 2020).

The efficiency at which AI can analyze vast amounts of data is rapidly changing how organizations comprehend and engage with their clients (Huang & Rust, 2021). Concerning the analysis of website visitors, AI solutions

can identify and monitor the behavior of the target audience in real time and reveal its preferences, typical patterns, and critical issues (Lies, 2019). This has the effect of making it possible for the organizations to concentrate on meeting the needs of the users in this digital context with corresponding enhanced levels of interaction and satisfaction (Hollebeek *et al.*, 2024). For instance, machine learning algorithms may identify patterns of behaviors of visitors that may be difficult or impossible to diagnose using conventional analytical tools (De Bruyn *et al.*, 2020). These concepts can be used in website redesign, semantic customization, and niche marketing. NLP is applied in the analysis of text data in customer reviews, social media feeds and chat logs, to establish a positive or negative tone that will enhance the strategy (Dadas, 2024). Computer vision can be used in image recognition and optimization so that the images used in the websites are appropriate and appeal to the viewers. The advancement of AI has seen a revolution in how firms undertake marketing and customer evaluations (Pandey, 2023). AI remains vital for managing digital presence and engaging customers more effectively because of the analytics provided by the technology (Yüksel *et al.*, 2023)

## METHODOLOGY

The paper mainly analyze this project in a few steps. Such as how to track the website, how to capture the data of visitors, how to track the location, etc.

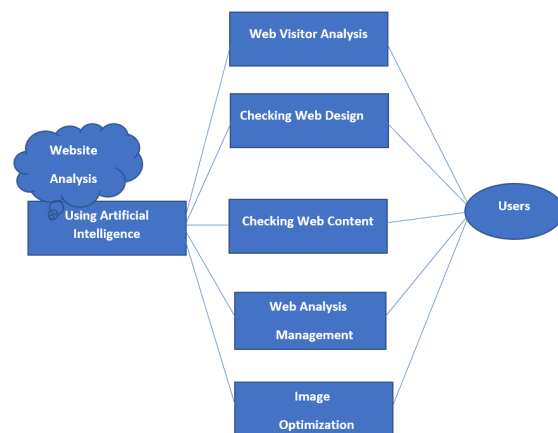


Figure 2: Methods for Analysis

### Validating Website Design

Theme color is particularly important for a brand. The theme color of a brand should be the same as the color of the website of that brand. The design of the site should be light and interactive so that it could load faster, and visitors are easily able to use it (Rana *et al.*, 2021). There should be a separate section for your product and services just after the header so that visitors can easily get an idea about your brand (Kopalle *et al.*, 2022). In the footer section, there must be a link of terms and conditions, about us, contact us, etc. The AI-based system needs to check all these things (Varsha *et al.*, 2021).

First, it must check the header of the website, and then

it will check the body and footer. After full checking, our AI-based system will give a full report and some suggestions about it. If we want to start a new business the basic things which we need to know about are the Marketing 4 Ps, also known as the Marketing Mix, which is a fundamental framework used by businesses to develop

and execute their marketing strategies (Gupta *et al.*, 2024). These four elements are Product, Price, Place, and Promotion form the foundation of any marketing plan, enabling companies to effectively reach their target audience, satisfy customer needs, and achieve their business objectives.

### 4 Ps Fundamental Framework

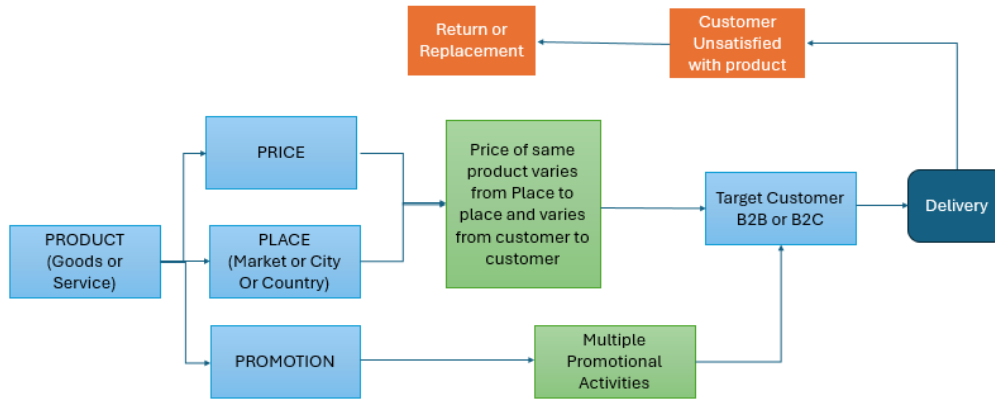


Figure 3: 4Ps Fundamental Framework

Here's a detailed description of each of the 4 Ps:

#### Product

The product implies the tangible and/or intangible item, which a company and its outlets provide to satisfy the demand of the target consumers (Suraña-Sánchez & Aramendia-Muneta, 2024). This component embraces characteristics such as features, quality, design, and branding, packaging, and customer relation services. For products to be shaped and designed to fit or surpass customer needs, expectations, preferences and demand, there is need to adopt an elaborate market analysis process (Paschen *et al.*, 2019). With these factors, it is possible for any business organization to facilitate the right products that will be accepted in the market.

#### Price

Price is the amount of money a customer is willing to pay to obtain a given good or service. Retail price is a vital component of achieving objectives of sales, profit, and competitiveness since it refers to the price at which products are sold to the consumers (Ameen *et al.*, 2021). Hence, there are various pricing techniques include cost-based pricing, competitor-based pricing, value-based pricing, and dynamic pricing. Production cost, demand sensitivity, perceived value by consumers, pricing objectives, and business model are some of the reasons that affect the pricing strategies. For example, the same good will cost more in New York City than in Owings Mills, Maryland. Pricing can also differ due to customer visits as several firms provide quantity discounts for their products (Prentice *et al.*, 2020).

#### Place

Distribution refers to the methods and channels through which products are supplied to the customers (Varsha *et al.*, 2021). This includes decisions such as where the product should be distributed, how it should be transported, warehousing, and marketing and sales channels, whether physical stores or online platforms (Klumpp, 2018). This means that, firms must establish the relevant distribution channels to target clients with the right product, in the right place at the right time and in the right quantities. A distribution plan may include the direct selling, wholesalers, retailers, online selling or all these strategies. The geographic distribution can also be done at different level, for example at the country level, state level, area level, city level etc. (Chaitanya *et al.*, 2023).

#### Promotion

Communication and sales persuasion of the target customers are the key components of promotion that make up promotion mix. Promotional activities include advertising, sales promotion, public relations, personal selling, and direct selling (Kanimozi & Jacob, 2018). The main reasons for promotion are to inform, persuade, organize demand, and control the sales of products (Yüksel *et al.*, 2023). Promotion mixes are tailored to the target market, integrated, consistent with marketing goals and objectives, and accommodate corporate image (Gołab-Andrzejak, 2023).

The Marketing 4 Ps have been established as a practical guide for businesses to align their toolkit by product, price, place, and promotion. With the application of these elements, such requirements can be fulfilled, as

well as attain a competitive edge amidst the heightened business competition and ensure business success in the contemporary world.

### **Digital Marketing**

With the growth of the internet and information technology, small businesses can reach the target market within a short duration of time. Regardless of whether you are operating a marketing team in-house, hiring personnel, or outsourcing your digital marketing activities, it is crucial to understand these basics. Here are major ideas and several tips that may be useful for successful development of small business.

### **Search Engine Optimization (SEO)**

Search engine optimization otherwise known as SEO plays a very integral role in making web pages more visible in search engines. This involves deploying suitable keywords, developing quality content, and making the site friendly to mobile devices (Ullah *et al.*, 2020). Local SEO is useful when one wants to target their niche local customers while comprehensive SEO is more target a universal market.

### **Content Marketing**

Create a detailed plan of what content should be created and what appeals to clients most. Produce resources beneficial to readers, viewers, or listeners, including articles, videos, and graphics. There is need to use social media accounts to share and promote this content to achieve optimal results.

### **Social Media Marketing**

Expand the visibility of the business on platforms such as face book, Instagram, Twitter, and Linked. It is important to maintain interaction with your audience through the daily and frequent posts, updates and also the comments section. Organic advertising on these platforms can be costly and target age groups with more efficiency in the advertisement.

### **Email Marketing**

Create and sustain an email list, which can help facilitate the company's relationships with the customers (Elsayed, 2021). Use it to customize what you send out, which can be content, offers or merely an update. Automate, to an extent, the drip campaigns and follow-ups and white label could include greeting emails for special occasions such as birthdays.

### **Pay-Per-Click (PPC) Advertising**

For example, use Google Ads and promote your page and products or services. Choose the amount of money to spend and select keywords related to the activity of your business. Try to keep a constant check on your campaigns and make modifications or additions to see improvements

in the numbers.

### **Website Analytics**

Google Analytics must be employed with the aim of analyzing visitors and their interactions with different websites. By analyzing this data, you can make better informed decisions and fine-tune you or your organization's online presence to achieve a higher performance level as well as improve the user experience.

### **E-Commerce and Online Sales**

When appropriate, try to sell products or services online. A website that is easy to navigate and transact will guarantee increased customer satisfaction and transactions, hence boosting up sales.

### **Mobile Marketing**

Today, people use the internet on their mobile phones and, therefore, it is crucial that you make your digital marketing strategy friendly to these users. Make sure your website is optimized for mobile and consider mobile advertising to reach even more potential (if applicable).

### **Customer Relationship Management (CRM) Systems**

An organization should integrate a CRM system to enhance the organization's capability of handling customer interactions and information (Kumar *et al.*, 2021). Engage the marketing strategies through CRM data in order to streamline the way it communicates with the customers with aims of increasing their loyalty.

### **Artificial Intelligence (AI) & Chatbots:**

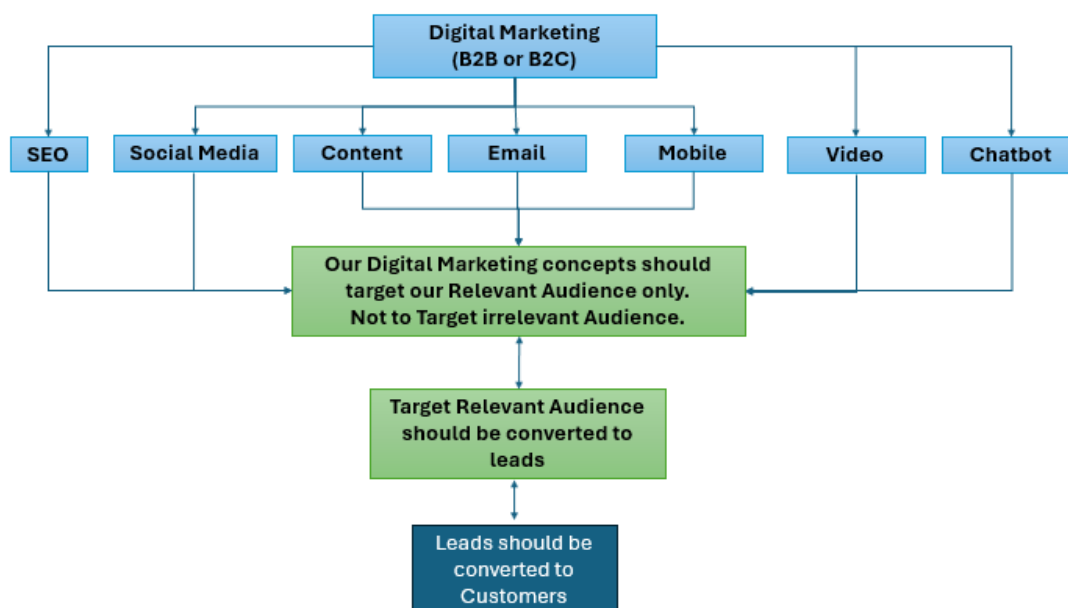
Learn how to use AI in customer service and how chatbots can help improve customer experience. AI in marketing can also be helpful in data analysis, personalization and even dealing with many repetitive tasks hence making your marketing activities to be productive and productive.

### **Video Marketing**

Maximize use of video to share the intended story and/or spark interaction. The Internet is useful for gaining access to a large number of consumers, especially when using websites like YouTube or TikTok (Kopalle *et al.*, 2022). Delivering high quality video content, there can be increased interactivity and awareness of the Brand.

This way finding a way of relating small business to the digital world, will make the business to expand its market and experience accelerated growth through the integration of these advanced information technology concepts to your digital marketing strategy. This is because protecting oneself in the dynamic digital environment requires that one changes as frequently as the new dynamics.

It is essential to stay updated on the latest trends and technologies to remain competitive in the dynamic digital landscape.



**Figure 4:** Digital Marketing (BSB or BSC)

Let us discuss an example. A plumbing or a painting company in Maryland state need to target the customers surrounded areas around hundred miles if so more, they need to target the customers located to their surroundings areas as their place strategy should be targeted to the nearby customers only, as the companies cannot provide service on long-distance states like Texas or other areas as their service cannot be provided. The digital marketing concepts should only focus on surrounding areas and zip codes to generate relevant leads. If a lead is generated out of state and service cannot be provided, then the lead is considered as an irrelevant lead.

Let us consider a small software or consulting company, in this case there is no restriction on place, they can support each other worldwide as the service can be provided online and meetings can be done by video calls.

### Search Engine Optimization (SEO)

#### What Is Search Engine Optimization (SEO)

SEO is one of the widely used digital marketing techniques that focuses on making a website easily accessible and visible to users through the internet search engine results page. The main purpose of SEO is to make a site more popular among users, increasing its ranking for the key word or phrase. The major factors of SEO which any website must follow includes keywords, good quality content, mobile compatibility, local SEO, link building and technical SEO.

#### Keyword Optimization

Keyword optimization is a critical factor that leads to the success of any type of SEO. Keywords are the words that people type into the search engine bar when they are looking for information. It's important for business owners with websites to generate a list of keywords that are both relevant and highly effective. These keywords should then be incorporated into the web page in the meta

tags section, the header section, as well as in the body section of the page. For instance, a painting organization operating in Maryland is likely to contain keywords such as Maryland Painting, Local Painters, Painting Services, and Residential Painting.

#### Quality Content

Another of the key strategies when it comes to SEO is quality content. In this context, search engine considers a content useful and interesting to users and offers it to the audience. Keeping the content fresh and relevant on the website ensures users satisfaction and at the same time informs search engines about the site's activity which is usually rewarded with a better ranking.

#### Mobile-Friendliness

Responsive is foundational in today's world of technology. As more people use handheld devices to browse the web, site indexing services such as Google will favor sites that are friendly to these devices. Another factor that can improve the site position on SERPs is proper mobile optimization for the given web page.

#### Link Building

Link building is one of the most crucial elements of the SEO technique and refers to the process of obtaining backlinks from authoritative sites. Search engines rely on backlinks and consider them as endorsements of a website's authority and its content's topicality. It is advisable to pay more attention on quality than the quantity of the links that one is building.

#### Local SEO

Local SEO is always critical for companies that operate at the local level or targeting the local market. This entails the technical and keyword aspect where the website is optimized for location-based keywords while establishing

a Google My Business listing. Positive reviews from customers who are happy with the services offered is another factor that is used in ranking local search results.

### **On-Page and Off-Page SEO**

On-site SEO means optimization of internal aspects of a website, on the other hand, off-site SEO refers to external factors that affect the credibility and ranking of the site. Social media, influencers, and mentions in articles make up for the off-page SEO that a website could have. There are several visible networks apart from the site that can increase brand awareness and drive organic traffic.

### **Technical SEO**

Technical SEO is a comprehensive method of optimizing the technical features of the website in order to rank better with search engines. This includes such common measures as proper website architecture, managing the speed of pages' loading, and marking up the site with schema to give search engines more information about page's content. Generally, from the technical perspective, optimizing a site can have a good effect on the results obtained on SERPs.

### **Monitoring and Analysis**

Constant evaluation of the SEO performance is critical because it helps to determine susceptible niches. Through Google Analytics, Google Search Console and other SEO tools such as rank trackers and SEO crawlers, one can monitor such aspects as organic traffic, position tracking and user engagement.

### **Adapting to Changes**

SEO is a constantly evolving field, and the search engines continuously undergo changes to their algorithm. This requires an understanding of the industry trends and changes in algorithms to properly implement an SEO strategy. It is crucial for someone to keep on updating their knowledge and embracing new changes to improve on their SEO market position.

SEO is an important and complex field that should be managed in an integrated manner to be effective. To achieve the best results, the focus should be made on such aspects as keywords optimization, the creation of quality content, mobile-friendliness, localization, link-building and regular monitoring of technical aspects to build the website's relevance and attract great amount of organic traffic. The field of SEO remains dynamic and ever changing, therefore it is imperative to continue learning and embracing new changes in the digital world.

### **Example Using 4 Ps Marketing Strategy for SEO**

#### **Product (Relevance)**

When using SEO, the term "product" concerns the content and services that are promoted on a website. This element is crucial for SEO because it determines how relevant the content is to users' queries. The right keywords which would have to be used should be chosen from the area of business related to the products or

services being offered. Developing an insight into the target customers' requirement and expectations, it is easier to make the information search relevant and useful for the users as well as for search engines. This may be in the form of articles, blog posts, images, videos, and all other information that is posted on the site.

#### **Price (Value Proposition)**

In traditional marketing, the price refers to the amount of money charged for a particular product or service. In SEO terminology, "price" is like the benefit, or value, that users derive from a specific website. Thus, the presence of high-quality, valuable content on an Internet site is paramount to attracting and maintaining user attention. Whether it is news or entertainment, multimedia or purchasing products and services, the perceived value of the articles contribute to the overall user experience. This is one of the factors that the search engines look at when ranking websites.

#### **Place (Accessibility and Distribution)**

In marketing, "place" refers to the channels that are employed to get a product to the customers. In SEO, it relates to website's content availability and dissemination to the target audience. Keeping a website accessible for search engine crawlers and users is equally important. It entails proper organization of the website, use of appropriate URLs and the sitemaps. Also, reposting such content on social media and specialized websites and forums increases availability and exposure.

#### **Promotion (Marketing and Outreach)**

Promotion in traditional marketing comprises of advertising, public relation, and all other forms of promotion. Promotion in SEO is the effort put into marketing the website with an aim of attaining a higher rank and traffic. Promotion strategies are social media marketing, content promotion via email newsletters, influencer collaborations, and other promotion-related tactics. Implementing these promotional strategies aids in increasing brand recognition, obtaining backlinks, and increasing the website's authority and credibility from the perspective of the search engines.

#### **Implementing the 4 Ps into SEO Techniques**

This makes SEO stronger and more balanced when it is tied directly to the concepts of the four Ps of traditional marketing: Product, Price, Place, and Promotion. This approach shifts from the best technical optimization and content creation to focus on all aspects of the website. This way, the business owners can increase their website rank on SERPS and get more targeted and interested audience by setting their focus on the product (content) relevance, product's value proposition and price, product accessibility, and promotions.

#### **Search Engine Optimization (SEO)**

SEO is a method of digital marketing that optimizes a website so that it ranks high on search engines such as

Google, Bing, and Yahoo among others. In its most basic form, SEO is aimed at improving rankings of a website on the search engines, especially those which are relevant to the searched keywords or phrases used by users. SEO is the process of enhancing some of the features of a website, such as on-page and off-page features, in order to appeal to the search engines as well as the users. The use of the 4 Ps for SEO means that businesses can develop a holistic approach to online marketing if they wish to do so. Hence, it is a clear indication that the combination of these conventional marketing strategies with contemporary SEO approaches is crucial to the formulation of a strong and long-term online marketing paradigm in the current complex online environment.

### SEO Implementation

To optimize for search engines, one must develop content that is sound, appropriate to the topic, and useful to the intended target public. Any key phrases that are highlighted within should be integrated seamlessly into the content for it to rank well on search engines. First, there's also the question of website accessibility and ease of navigation. That is why website speed, mobile friendliness, and all factors influencing the simplicity of the user's experience must be enhanced. Today, search engines consider the so-called user experience it is better to work only with sites that do not pose any threat to the user. Technical SEO is also important and should be put into practice by following proper measures. This involves making proper use of meta tag, site map and proper way of using headers. Another major approach is linking building with trusted Web sites to generate traffic and authoritative links.

Another important factor which also relates to promotion is promotion. Marketing and advertising are important to make the customers aware of the product or services that you are offering. Advertising content on the Social Media sites ensure high traffic links to the site. However, also trying out content marketing methods such as guest blogging, influencer marketing partnership, and email marketing is useful in reaching out to potential clients. The single most significant piece of advice to consider is that search engine optimization is a never-ending endeavor. Besides, one should be constantly knowledgeable concerning search engine algorithm updates and users' behavior. This means always checking and tweaking your tactics to guarantee that the website is properly placed to continue getting relevant organic traffic.

### Technical Concepts and APIs

Google Search Console API: Allows us to access data from Google Search Console, providing insights into how Googlebot views your website and optimizing your content accordingly.

Refer the below URL for more details:

[https://developers.google.com/webmaster-tools/v1/api\\_reference\\_index](https://developers.google.com/webmaster-tools/v1/api_reference_index)

### Google Keyword Planner API

While Google Keyword Planner itself doesn't have a public API, we can use tools like SEMrush or Ahrefs, which provide keyword data and insights for content optimization.

Refer the below URL for more details:

<https://developers.google.com/google-ads/api/docs/keyword-planning/overview>

### Google Page Speed Insights API

Provides website performance insights, including suggestions for improving page speed and user experience. Refer the below URL for more details:

<https://developers.google.com/speed/docs/insights/v5/get-started>

### Lighthouse API

An open-source, automated tool for improving the quality of web pages. It has audits for performance, accessibility, progressive web apps, SEO, and more.

Refer the below URL for more details:

<https://lighthouse-metrics.com/docs/api>

### Ahrefs API

Ahrefs provides an API that allows you to access backlink data, keyword rankings, and other SEO metrics.

Refer the below URL for more details:

<https://ahrefs.com/api>

### Facebook Graph API

If social media promotion is a significant part of your strategy, Facebook Graph API allows you to interact with Facebook data, including posting content and analyzing engagement.

Refer the below URL for more details:

<https://developers.facebook.com/docs/graph-api/>

### Twitter API

Twitter provides an API for integrating with their platform, allowing you to post tweets, retrieve user data, and monitor trends.

Refer the below URL for more details:

<https://developer.twitter.com/en/docs/twitter-api>

### LinkedIn API

This a trending API will many concepts.

Refer the below URL for more details:

<https://developer.linkedin.com/>

As these APIs are not free and when using these APIs, we may need to adhere to rate limits, authentication requirements, and terms of service provided by the respective platforms. These APIs may require API keys for access. Always refer to the documentation of each API for specific details on usage and integration.

### Step-by-Step Guide on How to Integrate It for SEO Purposes:

Connecting our website to APIs involves several steps,

including obtaining API keys, integrating the APIs into your website's code, and handling responses. For example, if we need to connect the linked API, the following below steps need to be followed.

### We Need to Set up A Google Cloud Platform (GCP) Project

Go to the Google Cloud Console (<https://console.cloud.google.com/>).

Create a new project or select an existing one.

### Enable the Google Search Console API

In the Cloud Console, go to the "APIs & Services" > "Library" section.

Search for "Google Search Console API" and enable it for your project.

### Create API Credentials

Navigate to "APIs & Services" > "Credentials" section. Click on "Create credentials" and choose "Service account key".

Select or create a new service account, choose the JSON key type, and click "Create". This will download a JSON file containing your credentials.

### Grant Permissions

Go to your Google Search Console account. Add the service account email address (found in the JSON file) as a user with appropriate permissions (at least "Restricted" access) to the properties you want to access.

### Install Google API Client Library

You can use various programming languages to interact with the Google Search Console API. Install the appropriate client library for your preferred language.

For example, if you're using Python, you can install the library using pip:

```
pip install google-api-python-client
```

If you are using JavaScript add the following script tag to your HTML file to include the Google API JavaScript client library.

```
<script src="https://apis.google.com/js/api.js"></script>
```

### Authentication

Use the credentials JSON file you downloaded to authenticate your API requests. The exact method varies depending on the programming language and library you're using. Refer to the documentation of the library you're using for instructions on how to authenticate.

### Make API Requests

Once authenticated, you can start making requests to the Google Search Console API to retrieve data such as search analytics, crawl errors, sitemaps, etc. You can fetch data programmatically and use it to analyze your site's performance, identify issues, and optimize for better SEO.

### Handle Errors and Rate Limits

Error handling and rate limits when interacting with the API. Implement appropriate strategies to handle errors gracefully and avoid exceeding rate limits to ensure reliable access to the API.

Integrating the Google Search Console API can provide you with valuable insights into your website's SEO performance, allowing you to make data-driven decisions to improve your site's visibility in Google Search results.

### Content Analysis

After checking the design, the system will check the quality and format of your content. If the system can detect any problem related to the web application content formatting or able to detect some engagement problems, it will immediately prompt about the problems and will suggest, how to fix the problems. AI can analyze large blocks of text and quickly calculate the sentiment behind them. It will be useful to get a prediction on how visitors will respond to your web content. If you do not publish content on your website for a long time, the system will be able to detect it and publish new content using the automatic content writing feature.

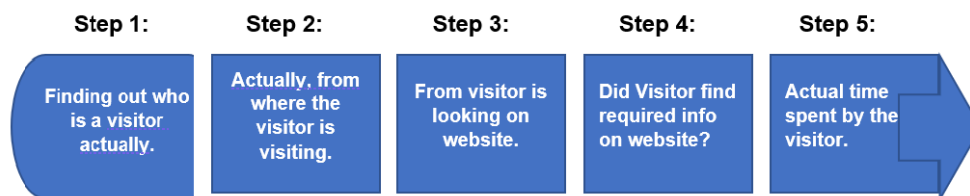


Figure 5: Website Visitor Behavior Analysis

### Web Analytics & Management

By web analytics, we mean some of our most popular applications, such as Google Analytics. But genuine web analytics is not so simple to proceed. Depending on the data from the web analytics, the performance of the website can be checked, or the valuation can be determined (Kundur, 2023). The basic steps we are going to follow to perform the web analytics process are:

1. Importing and gathering all the data.

2. Processing all the data and selecting them according to their importance.
3. Analyzing processed data.
4. Publishing result after analyzing properly.

There are two types of analytics off-site analytics and on-site analytics. On-site analytics are extremely popular such as google analytics, adobe analytics, etc. and off-site analytics mainly deals with the data such as HTTP request data, Network level data, and server-generated data

associated with HTTP requests and some external data (Kundur, 2023). The AI-based system will gather data from both sources so that it can make accurate decisions over them. The system will analyze some of the log-files of the website as the log files may provide the necessary data for our system depending on the popularity of the website (Yu *et al.*, 2023). In general, our proposed AI-based framework will collect some important data through on-site and off-site analytics such as visitor's location, which pages are being visited more, at which time most visitors are coming, and the average spent time of a visitor. Depending on this, the AI-based framework will give us an idea of how to improve where we need to improve (Shpak *et al.*, 2023).

### Checking Website Images and Optimizing Them

The framework needs to check all the pictures on the website. If it can detect that the site's picture is not optimized, it will consequently optimize those pictures. Many e-commerce websites lose customers due to a lack of image optimization which will be bad for the company's revenue (Cui *et al.*, 2024). In the opinion of experts, copyrighted and low-quality images are bad for website ranking. So, it is always better to have a picture of the product prepared by a graphic designer. If the website has a copyrighted image, the system will be able to detect it and notify and delete all copyrighted images (Chui *et al.*, 2023).

### Google Trends with AI & Brand Management

With Google Trends, it is possible to find out what trends are going on. Using this information, brands will be able to do various product designs, product manufacturing, and advanced marketing. Suppose now a movie is published and a special character of that movie is trending (Jain *et al.*, 2024). Now various brands will utilize that character to bring various items to the market. Now with Google Trends, the AI-based system will detect which product is trending or which incident is trending. Then AI gives us all the information about that trend. Using this information, different brands will be able to design new products (Jain *et al.*, 2024). AI helps us do keyword research and find the best keywords. All these keywords are extremely useful for content generation and branding through all this content is quite easy (Mer, 2023).

### Utilizing the Power of Social Media Through AI:

We know that social media is now a very suitable place for branding. But it is not possible to post regularly on social media (Jain *et al.*, 2024). The AI-based system will help, with this task. Whenever you post content on the website, the AI-based automation system will post a link to that content on all the associated social media accounts. This will bring a gigantic amount of traffic and leads (Tekic & Fuller, 2023). Again, AI will keep social media accounts active through auto-generated posts on the associated social media accounts. This makes branding much easier.

Our AI system working process on Brand Quality Management

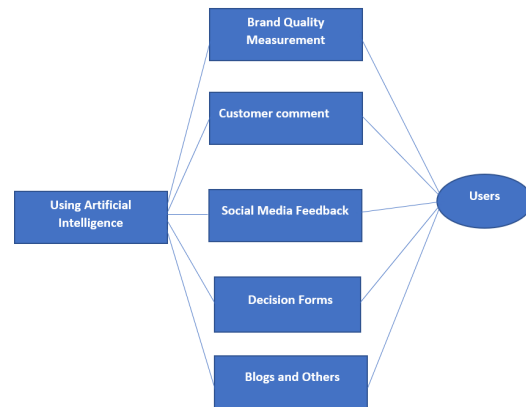


Figure 6: AI system working Process

### Brand Quality Measurement with AI

Every management activity has measurement and control. It generally deals with brand quality management, brand equity increase, brand vision, brand weakness control. We are going to measure brand quality with AI using a few steps (Hicham *et al.*, 2023).

### Collecting Data from Social Media Feedbacks

A positive comment and review on media can magnify the value of the brand while a negative review or comment can diminish it. So, the AI-based system will first collect the data of the ratio of the positive feedback and negative feedback (Swain *et al.*, 2024).

### Collecting Data from Website Comments and After Service Feedback

As we know the brand quality is defined as meeting the expectation of the customers so the system is going to collect data from the brand's website and take feedback from those customers who use the product or services from that brand (Nalbant & Aydın, 2023).

### Collecting Data from Different Forums and Blogs

The system will check different forums and blogs that are discussing our products or services. It will check the sentiment behind all those discussions and collect data accordingly. After collecting all these data from different sources, the system will analyze those data. Data Analysis can be done according to the preloaded algorithm (Kirkby *et al.*, 2023).

### Findings

After analyzing all those data it will determine the quality of that brand, the key findings are:

### Transformation of the Future of Branding and Marketing

AI has brought unprecedented changes in the field of branding and marketing. AI-Driven digital marketing has made branding and marketing much easier. In the age of traditional media marketing, it was difficult to do

marketing by predicting customer sentiment. But now with the help of AI, anyone can now control the branding and marketing from anywhere in the world.

### Market Survey with AI

The days of traditional market surveys are now over. In the past, one had to rely on offline surveys to start with product design and marketing. But now with the help of an AI-based automation system, it is possible to gather a lot of data and track customer behavior and get a full idea of their demand and desire. As a result, before designing any product it is understandable that we must look for. Apart from that, AI-Driven online surveys have made the job of market survey much easier.

### Customer Relationship Building with AI

CRM has become much easier now with AI and machine learning. Through accepting and analyzing all the information of the customers, their demand and desire will be identified. Product and service development will be done according to that information so that it can meet the needs of the customers. It also helps us to understand where we must invest to develop the customer service infrastructure so that the relationship between customer and company becomes stronger.

### AI Changes Our Visualization with AR/VR

AI-based augmented has wholly changed our traditional approach to marketing. Now any one can visualize what a product should look like before you manufacture it with the help of augmented reality. Again, various e-commerce sites have entirely changed the concept of shopping using augmented reality. For example, before ordering different furniture, you can visualize how that furniture will look in your room. You can visualize how well a dress will suit. This will significantly reduce the chances of buying the wrong product.



Figure 7: AI Changes Our Visualization with AR/VR

### Marketing Using AI Is Increasing

Most start-ups are now leaning towards marketing using AI. Those who market using AI are becoming more successful than others. So, anyone must use AI to survive in the competition for long time in current situations.

### Benefits

## INNOVATIVE LOOK AT FUTURE

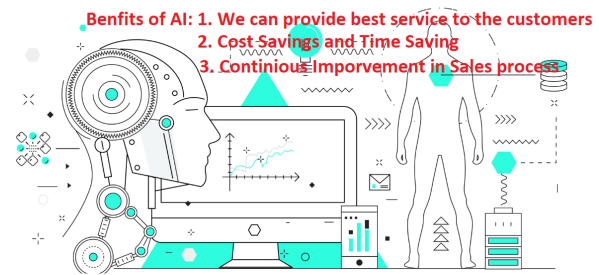


Figure 8: Innovative Look at Future

### Automatic Search Engine Optimization

Consistently Google gets more than 63k inquiries each second. But with AI and ML advanced SEO tools can expedite identifying website issues and offer feedback to shoot your search rankings. AI also helps to automatically adjust your SEO setting to boost your website ranking. Schema optimization is vital for SEO ranking. Schema basically helped Google to read your content. AI also assists any one to make the website Schema optimized.

### Real-Time Monitoring

Anyone can monitor their website from anywhere in the world and be able to make necessary changes with the help of AI. It assists you to control all the factors related to your content and website from a centralized framework which makes it handy and easy to use.

### Content Adjustment

AI helps us to analyze the behavior of different customers and generates a library accordingly. Later AI helps us to adjust our web content according to that library. AI also helps us by developing a system that can give suggestions and guide our viewers about our product and services automatically. Which helps us to generate more leads from our viewers.

### Churn Prediction

AI has made this kind of technology a reality. Through ML and prediction analysis AI can help to develop a risk model composed of signals that indicates how likely a customer is to end their relationship with your company.

### Accessibility

AI makes it easy to create an accessible website for those who are deaf hard of hearing or visually impaired.

### Lead Generation with AI-Based Automation

Most companies need a good website to get more leads and collect more customer information such as email, phone number, etc. AI can analyze your existing customer base and identify important trends and commonalities. After analyzing these AI will suggest to you what changes you need to do to generate more leads. Leads to very vital

for your branding. Sometimes AI helps us to capture new leads by prompting for different forms, coupon codes, and limited time offers to your viewers.

### User Experience Development

We know that the user experience of a website is particularly important in marketing and branding. If a visitor does not get a good experience by entering your website, it is very harmful to branding. Artificial Intelligence not just gathers information progressively to produce actionable feedback that can be used to improve the client experience of their site. However, it additionally can adjust to some preloaded configuration to change the client experience with the goal that more visitors will go to the web site.

### Smart Personalized Communication

In the case of branding, the importance of personalized communication has increased. Traditional customer communication is no longer as effective as it was before. AI helps marketers with personalized customer interactions. AI empowers marketers to customize their communication system on an individual level. Netflix and Amazon users already experienced this type of tailored recommendation. Amazon always will show you every purchase you have ever made, deals of the day, limited period offers, top picks for you, etc. This is how AI helps your website more interactive.

### Auto-Adjusting Pricing

If you want to increase the sales of your product, you must keep different prices depending on the location. However, it is difficult to offer different prices to different viewers. But AI has made this task easier. AI usually determines the price of a product based on its availability, demand, and customer profile. For example, if you enter an e-commerce site, you will see that the price of the same product looks different at different times. For example, on a particular day, the price of some products is much lower, and the price of some products is higher.

### Smart Customer Interaction with Chatbots

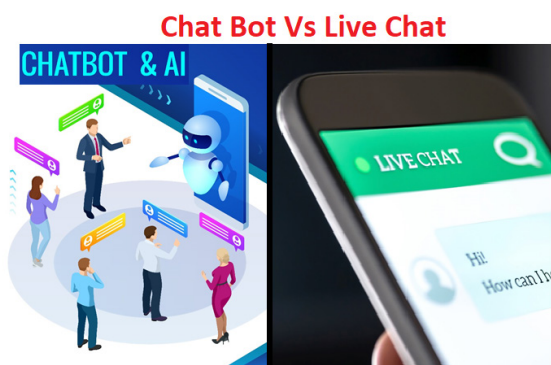


Figure 9: Chat Bot Vs Live Chat

A chatbot is an impeccable contribution to artificial intelligence. It can continue to talk to the customer for a long time without the help of a customer care executive. As a result, it is conceivable to deal with many clients at once. Usually, some frequently asked questions are pre-loaded in it and then AI responds to the questions of the customers. If there is a vital inquiry, it is transferred to the concerned customer care executive. This way a lot more customers can be handled by hiring very few people.

### Advantages

#### Automatic Website Management

Our proposed AI-based automation system has made tasks like website management easier and more automated. Now there is no compelling reason to recruit someone for website management. The AI-based automation system will now automatically monitor all issues and notify you if any critical issues are found. This AI-based automation system helps in design, content, and SEO. AI also helps in the process of page speed optimization.

#### Automatic Visitor Analysis

At the beginning of the Internet age, it was difficult to do visitor analysis. But now thanks to the generosity of AI it has become much easier now. Now AI can track and gather the data of each one of the individuals who are visiting your site. As a result, branding and marketing can be done easily by analyzing all that information.

#### Automate Repetitive Tasks

In our everyday work, we will do many repetitive tasks such as sending a thanking mail, verifying certain documents, and much more. Using artificial intelligence, we can automate repetitive tasks and even remove “annoying” tasks for humans.

#### Faster and Smarter Decision Making

Utilizing AI alongside different advanced technologies, today’s software can make faster decisions and act faster than humans. Individuals can investigate both sincerely and essentially when deciding, but AI-powered systems not only make quick decisions but also provide results faster. As a result, AI can quickly decide what to do if the number of visitors to your website suddenly decreases and can act accordingly.

#### Business Continuity

The use of AI technology not only helps companies in business forecasting and making important decisions but also prepares them for any emergency to ensure business continuity. Risk management today relies entirely on data management and analysis. Our AI-based systems can help organizations respond proactively. AI and machine learning assist organizations with planning for what is to come.

### Reducing Marketing and Branding Effort & Automated Customer Acquisition

With the help of machine learning, companies collect

data on customer behavior and accurately predict which part of the population is most likely to be a customer. AI algorithms can consider the aftereffects of marketing endeavors and use them to improve vital choices in future

endeavors. AI can identify and target new viewers of an e-commerce website and send them various offers via automated email. This is how AI helps in new customer acquisitions.

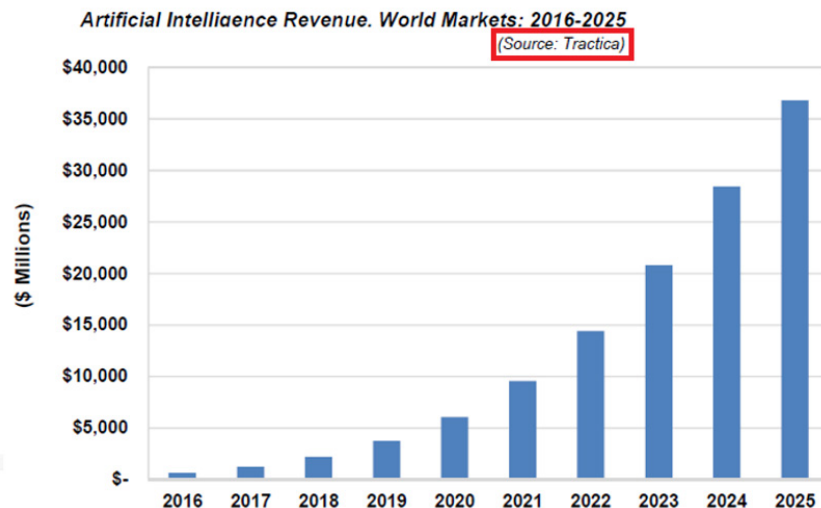


Figure 10: Revenue of AI

### Disadvantages

In general, AI is useful in numerous applications, but it also presents several ethical concerns and bias. Machine learning may replicate the data bias and hence provide results that are unfair to certain groups. There is a need for business organizations to periodically monitor their AI systems for bias. However, data privacy must be considered to secure customers' information and build up trust.

### Chatbots May Cause Communication Failure

Chatbots can sometimes be boring to customers. Because they can share certain information and speak certain languages, they may not work as expected by customers. It can even cause customer loss.

### Wrong Algorithm Makes AI Painful

Due to the wrong algorithm, AI often does not work perfectly. As a result, he often makes wrong decisions and implements many things in the wrong way. Therefore, there is a chance of huge losses in marketing and branding. So before using any AI-based framework, it

must be tested thoroughly.

### CONCLUSION

In conclusion, AI can be considered as a valuable instrument that allows performing the analysis of the website's visitors and evaluating the quality of branding effectively. The use of AI in marketing can help provide significant improvements to those businesses, enhancing the success of their strategies, and improving the overall quality of the brands. Thus, it can be concluded that AI technology is actively influencing the world of marketing and branding and its usage will become even more extensive in the future providing new ways of the business success in the competitive environment.

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