

The Impact of Artificial Intelligence Application Towards Digital Marketing

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KEYWORDS	ABSTRACT
<i>Artificial Intelligence (AI), Digital Advertising, Digital Marketing, Social Media Market and Semantic Search</i>	Numerous digital marketers remain unaware of the pivotal importance of incorporating artificial intelligence (AI) applications, while others grapple with how to effectively implement them. In the realm of digital and the social media marketing worldwide, AI currently functions as a significant disruptor. This paper's objective is to delve into specific AI applications like Chatbots, Semantic Search, and Web development, which can empower professionals within social media and the digital advertising agencies to attain advanced specialization without compromising their collaborative and creative capabilities. This dual approach is poised to yield a heightened return on investment. Consequently, this article possesses the potential to serve as an invaluable resource for the social media marketers aiming to adopt AI technologies to enhance the impact of their digital marketing strategies.

1. INTRODUCTION

The development of intelligent robots with the ability to think and behave like humans is known as artificial intelligence. One of the pioneers of the field of artificial intelligence (AI), John McCarthy is accredited with coining the phrase "Artificial Intelligence." Tasks may be completed more precisely thanks to artificial intelligence. People feel that artificial intelligence can solve the majority of issues, yet there are obstacles in the current scenario. Artificial intelligence has been dubbed the "next industrial revolution." AI can also find solutions to issues that may arise in the future. The development of artificial intelligence has the potential to produce whole new environments, technologies, and industries.

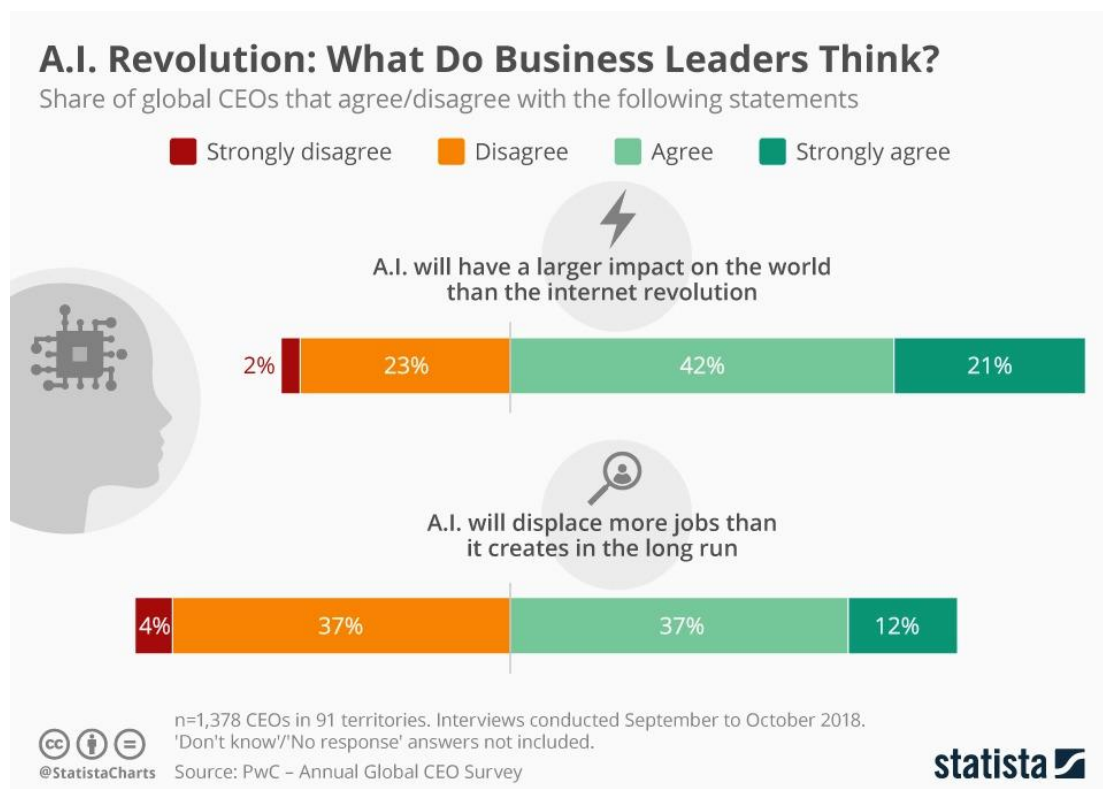
More than sixty years have been spent on the study and development of artificial intelligence. The outcomes of this research have permeated every facet of our economy and society, and many remarkable accomplishments have been accomplished as a consequence. For instance, When IBM's dark blue computer defeated the human world chess champion in 1997, the era of artificial intelligence had officially begun (AI). 2016 was the year that Google Alpha G won a match against the best human professional go player, Lee Se-dol. This triumph solidified the position of artificial intelligence as an almost exact synonym for the future. The national strategic objective for the development of the next generation of artificial intelligence in China was legally established in 2017 when the State Council made the announcement that the development plan for the next.



generation of artificial intelligence would be created. In 2017, the State Council designated this goal as one of its priorities. AI, which has shown its value in a number of fields in the past, including as marketing, healthcare, finance, and education, is now making its presence known in the sphere of online shopping.

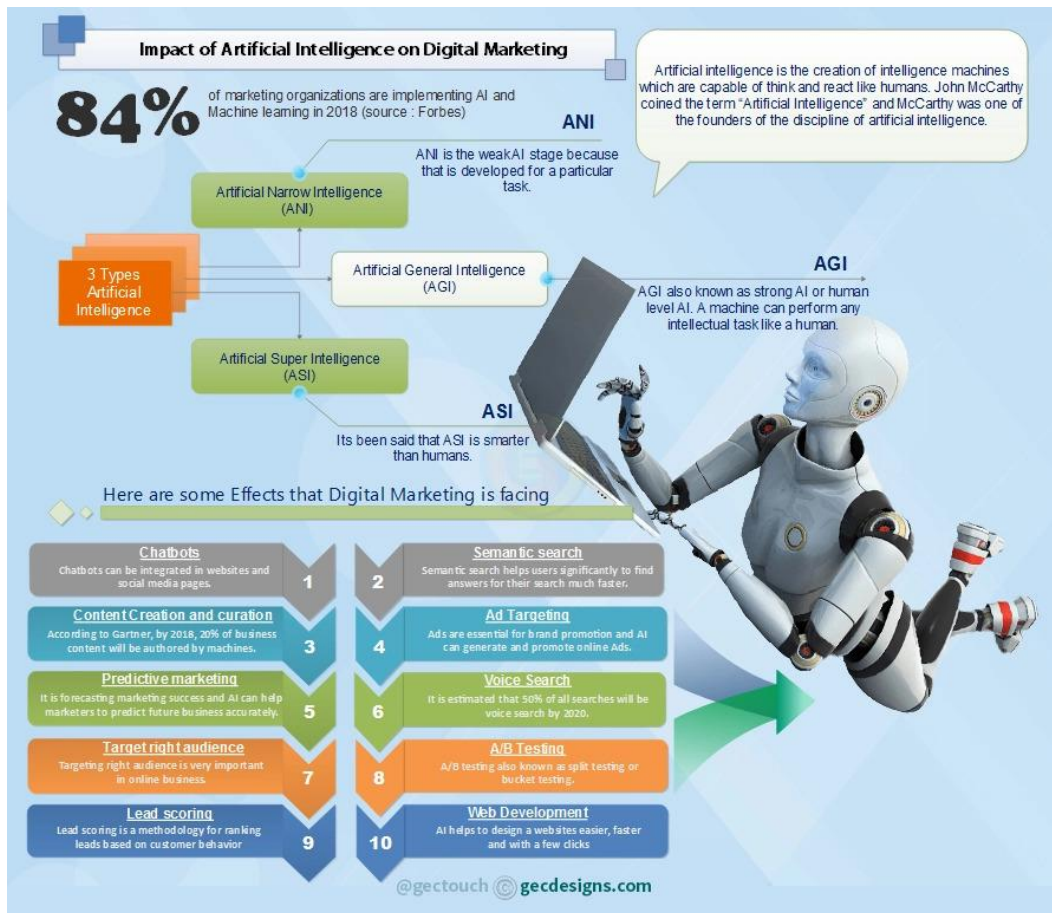
The last few years have seen significant advancements in the field of online commerce. People like the ease that comes with online shopping, but at the same time, they have more and higher expectations of what it should be able to do. The growth of artificial intelligence technology paves the way for the introduction of novel concepts and strategies in the expansion of e-commerce.

According to Gartner, a company that specialises in market research, by the year 2020, artificial intelligence will have replaced more than 80 percent of positions in customer support. Artificial intelligence technology will be used by several organisations, including Alibaba, Rakuten, and Amazon, for the purposes of conducting comment mining, developing chatbots, making product suggestions, and processing large amounts of data. The Ubi send study offers some illuminating data, including the following: Customers spend more than \$317.74 using chatbots; forty percent of consumers use chatbots to locate offers on products and services; one in five consumers makes purchases of goods and services through chatbots. DeepMind is a company that specialises in artificial intelligence. Google purchased the company for 400 million pounds.



According to Domo.com's estimates, internet users generate an astounding 2.5 quintillion bytes of data every single day. With the extensive proliferation of advertisements and data across various marketing channels, customer attention often gets divided. Therefore, it becomes imperative to tailor data and focus on specific audiences to enhance conversions and drive revenue growth. This involves optimizing the performance of digital marketing campaigns, channels, audiences, and markets. By measuring the effects on both customers and revenue, a company can refine its strategies. Personalized content creation can elevate customer satisfaction levels, contributing further to revenue growth. In essence, strategic measurement of impact on customers and revenues holds the potential to significantly boost a company's overall earnings.

Marketers commonly embrace artificial intelligence (AI), data mining, predictive modeling, and machine learning due to their ability to assess users and target audiences, uncover market opportunities, strengths, and vulnerabilities, and predict market demands. Return on investment (ROI), customer satisfaction, and overall growth may all be improved by classifying the expectations of customers using data processing methods that are both effective and efficient. Artificial intelligence (AI) takes data as input from a variety of sources, including websites, sales, analytical reports, and the insights garnered through social media. AI then analyses this information to provide results that are optimum, accurate, and highly predictive.



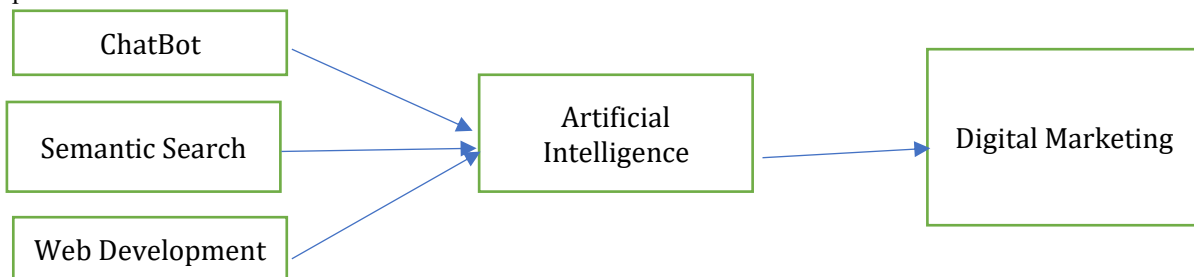
This research aims to provide valuable insights into the influence of artificial intelligence applications on digital marketing, thereby contributing to the existing body of knowledge in this field. The artificial intelligence has a vast influence towards the Digital marketing. The technique might be used by marketing managers to identify the variables that influence market share. Making decisions more effectively and efficiently might be enabled by such technologies. Artificial intelligence (AI) has a broad variety of applications in many different scientific domains, however it is difficult to utilise in marketing science . Due to the potential challenges' qualitative, quantitative, and strategic character, it seems that decision-makers in digital marketing need more than just an effective computational method. Making decisions might appear like a difficult activity due to factors including information gained through professional experience, specialised knowledge, judgement calls, and a multidimensional environment that is demanding and always changing. The volume of data generated every day provides marketers with the chance to build, design, and use apps that integrate scientific multifactor data with a goal of developing intelligent knowledge-based decision-making patterns.

Objectives of the Study:

To analyse the impact of Chatbot, Semantic Search and Web Development towards Artificial Intelligence

To study the effect on Artificial Intelligence towards digital marketing.

Conceptual Framework:



Review of Literature:

4.1 Chatbot:



The term "chatbot" pertains to "software that comprehends natural language input and generates natural language output, engaging in conversational interactions." The popularity of chatbots is on the rise (Gödert, 2013). One interpretation characterizes chatbots as "interactive virtual entities aimed at aiding individuals in prominent contexts," underlining their endeavor to exhibit a more human-like persona (Hajli, 2016). Chatbots can engage in text-based conversations or replicate human speech (voice-based chatbots) to elevate user engagement and foster customer loyalty. These chatbots can be found on websites, social media platforms, and instant messaging apps (Xu, Y, 2018). Their application extends to internal organizational functions, providing assistance across various tasks and services, including internal support systems, information technology service management (ITSM), learning, and human resource management (HRM).

4.2 Semantic Search:

The specific, relevant, and helpful information that the user is looking for may be found via semantic searching. A semantic search will quickly provide results that are relevant to your query. Although it does not match the term, it does match the query with the data and provide reference links. It pulls pertinent information about the documents from the query and stores it. The queries have been broken up into navigational categories by Guha et al. Users will use the search engine as a source in the navigation type in order to get the content of the documents. The integration of SSE's methodologies into semantic searching is done with the end goal of producing better results (Wang, Y, 2019). The user examines and evaluates a great number of texts as part of the semantic search process before beginning the search for knowledge.

For the purpose of applications and other kinds of work, the semantic web is an area that gives users the ability to publish data, reuse data, and trade data with other users all over the globe.

It is a W3C method, which has a more comprehensive framework. In semantic searching, there is a feature that allows one to filter the search data in order to make the information that was acquired more accurate and trustworthy (Scott, M. L, 2020). It takes into account the questions that were asked and responds to them fairly precisely. Duck duck go is a good choice for a search engine to employ when attempting to discern between a traditional online search engine and a semantic search engine (LaPointe, 2019). It displays all of the possible answers to the inquiry along with brief explanations of each one. Simply by giving it a quick look, the user may pick the information regarding the term "apple" that best suits his needs. According to the findings, the term "apple" may refer to the fruit, the bark, and Microsoft Corporation. Every one of these interpretations is conceivable and has an equal probability of being correct.

4.3 Web Development:

Web app development companies frequently use artificial intelligence to streamline the development process. These businesses create websites using an algorithm and provide website design and layout recommendations to developers. It provides instantaneous development process recommendations. By utilizing AI-powered technology, website owners may give one-of-a-kind experiences to each and every consumer. Customers are given the idea that they are regarded and valued in this manner. As a result, customers are more inclined to trust the website and your firm as a whole. End users desire interactions that are personalized and tailored to their specific requirements. The more appealing the website, the more user-friendly it should be. (Danescu-Niculescu-Mizil et al, 2013) The creation of websites is commonly regarded as an industry in which a highly individualised user experience is required. Web development companies are turning to AI for assistance since they are struggling to meet the demands of their customers while adhering to more conventional approaches to website creation and development. It would be more reasonable to use AI to automate the process rather than to put pressure on web developers to put in long hours and meet the requirements of demanding customers. The incorporation of artificial intelligence is the most effective strategy to change conventional ways to web development into a cutting-edge practise in the field of web development.

4.4 Artificial Intelligence:

Artificial intelligence Technology's rapid progress now transcends greater digital transformation and advances into even newer ways. More specifically, the next stage of development is predicated on a more widespread usage of Artificial Intelligence in business. Intelligent algorithms are used to convert data from linked items. That might be difficult for human intellect to manage (Lichtenthaler, 2018).

It is easy to track the origin of artificial intelligence all the way back to Greek mythology, as well as the origins of AI in other ancient societies, such as Egypt and China (Nahodil & Vitku, 2013). It is possible to trace the origins of modern artificial intelligence back to the efforts made by ancient Greek philosophers to represent human cognition as a symbolic system (Lewis, 2014). Artificial intelligence (AI) is the study of what computers are capable of doing, thinking, interacting with, and acting in across a broad variety of categories of human competence that persons are proficient in, as defined by Rich (1985). (Rich, 1985).

The increasing utilization of automated machines, often referred to as robots, has the capacity to revolutionize the way consumers participate in value co-creation (Kaartemo & Helkkula, 2018). Chintagunta, Hanssens, and Hauser (2016) concurred that machine learning holds the potential to propel marketing science forward by enabling marketers to introduce innovative concepts that aid organizations in harnessing the potential of Big Data (Chintagunta, et al., 2016). Artificial



intelligence, through its comprehension of customer demands and preferences, plays a role in enhancing resource integration between suppliers and customers (Glushko & Nomorosa, 2013).

4.5 Digital Marketing:

In 2019, Khokhar and Chitsimran conducted an analysis aiming to identify the factors influencing the utilization of artificial intelligence in marketing. While numerous innovative AI applications have opened doors for an unparalleled future in marketing (Krsteva, 2016), Vishnoi and Bagga have provided comprehensive insights into the AI ecosystem and the underlying technologies that underpin such marketing endeavors. Additionally, Siau (2017) delineated the marketing functions bolstered by AI (2019). Cosmin TNASE (2018) delved into AI's impact on programmatic advertising, and Thiraviyam (2018) proposed diverse ways to enhance digital marketing methodologies. Each of these studies considered the scope and impact of online advertising in modern marketing.

Recent studies have conducted a more in-depth examination of how artificial intelligence (AI) impacts digital marketing, particularly in specific research areas like consumer experiences and academic viewpoints in the field of marketing (Chandra, 2020). Elhajjar et al. (2020) employed interviews to comprehend the factors driving students' interest in AI within marketing courses. Chandra (2020) explored current use cases centered around customer service and experience, including approaches like the Amazon Flywheel and Collaborative Filtering. Chandra (2020) also scrutinized contemporary use cases focusing on customer service and experience.

5. Research Methodology:

This study is founded on theoretical underpinnings and posits the influence of Artificial Intelligence (AI) applications on Digital Marketing. The article highlights a substantial correlation between AI applications and Digital Marketing, suggesting that this relationship can draw consumers by leveraging past data acquired from online purchases. Moreover, the integration of Artificial Intelligence is shown to bolster marketers' strategies.

6. Influence of Artificial Intelligence in Digital Marketing:

6.1 ChatBots :

Chatbots, which is driven by AI, has been built to make conversation with your consumers on a variety of topics easier. They are able to be pre-set to provide precise responses to questions that are asked frequently (FAQ). Chatbots can perform the job for you so you don't have to waste your time and effort responding to the same inquiry over and over again. It is the appropriate method for enhancing communication with your clientele. Chatbots can automate certain aspects of the marketing process, which enables your staff to focus their efforts on more important tasks.

The beginning stages of the marketing process are an ideal time to make use of chatbots. This involves gathering contact information, responding to frequently asked questions, and handling typical technical concerns. Increase the amount of your marketing discussions with the help of chatbots. Chatbots have the potential to automate a significant portion of the marketing process. As a result, you and your marketing team will have more time to devote to handling more creative processes and increasing the volume of marketing conversations, which will ultimately lead to a higher conversion rate.

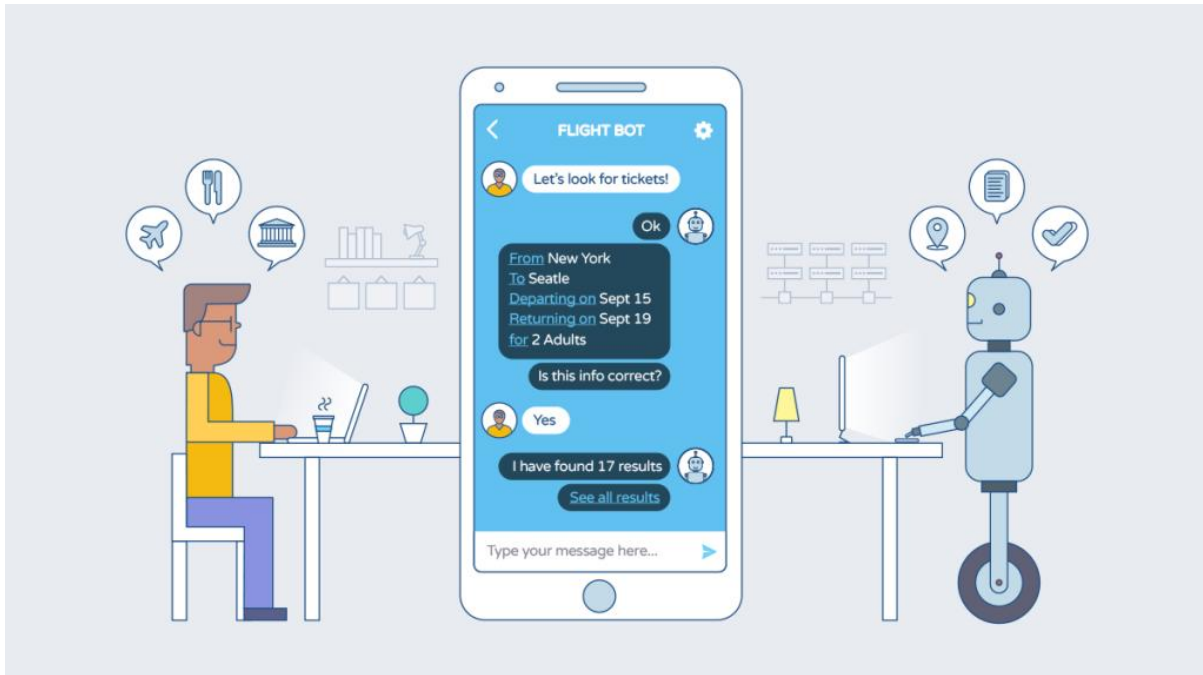
Chatbots bridge the communication gap that often exists between marketing and sales, facilitating a seamless integration of these two functions. By involving all stakeholders in your chatbot strategy, you can effectively align your strategy and marketing efforts. This collaborative approach proves particularly advantageous during the chatbot development phase. AI The use of chatbots is one example of a recent technological development that has been implemented to improve client interactions (Letheren, 2017; Broeck, et al., 2019). The major technological advancements, the widespread use of mobile devices and applications, and the most recent advancements in artificial intelligence and machine learning all contributed to an increasing interest in chatbots (Brandtzaeg & Folstad, 2017). A computer programme that is able to enact humanoid language with the assistance of a text-based dialogue system is referred to as a "chatbot," which is a combination of the words "chat" and "robot." The name "chatbot" consists of the phrases "chat" and "robot." Users are able to connect with the software that is hiding behind chatbots, giving the impression that they are speaking with a real person. This is made possible by chatbots' text input and output mask identities (Wang & Petrina, 2013). Within these conversation-like interfaces, which operate on natural language input, an intelligent system acquires the capability to autonomously generate text-based responses for stakeholders. This proficiency is based on analyzing past interactions that customers have had with the company (Riikkinen, et al., 2018).

Chatbots could change the way people use the internet (Brandtzaeg & Folstad, 2017). Since smartphones and mobile apps have become more common, chatbots are now more often used in messenger apps than in computer programmes (AbuShawar & Atwell, 2015; Letheren, 2017).

Chatbots were introduced to the Messenger app by Facebook in 2016, and they made it possible for businesses to provide automated customer care, engaging tailored experiences, and guidance for online shopping. Facebook makes use of its own artificial intelligence to listen in on talks in order to learn how to have conversations that are similar to others on its own (Constine, 2016). Chatbots provide individualised customer service interactions, as well as personalised information and recommendations (Zumstein & Hundertmark, 2017). Users who have previously communicated with an organisation via a



chatbot or chat support are eligible to receive sponsored messages from chatbots if Facebook chooses to make this option available (Facebook, 2019).



Source: <https://www.c-zentrix.com/blog/AI-NLP-conversational-chatbot>

Recent studies have found that the capacity of chatbots to blur the lines between advertising and support is one of their greatest strengths (Letheren, 2017; Broeck, et al., 2019). Users have a tendency to feel more that they are being helped by the company rather than feeling that they are being merchandized when a Chatbot offers relevant apparel options that are personalised to the customer's interests and previous purchasing behaviour. This is an example that demonstrates the effectiveness of Chatbots in a clear and convincing manner (Broeck, et al., 2019).

6.2 Semantic Search:

Using SEO technologies helps to bring more people to a website, which in turn helps to bring in more sales and money. There are links between Search Engine Optimization (SEO) and Google Engine Ads. Both search engine marketing and search engine optimization depend on the analysis of keywords. Comparing SEM and Within the context of digital marketing, SEO assists us in gaining a better understanding of both the marketing and technical aspects of a website.

To better understand how important search engine optimization (SEO) is for a company's efforts to grow its online presence, one must first understand how search engines work.

- "Crawling" is the process of getting all of the linked web pages from a website. This is done with the help of a piece of software called a "crawler."
- Indexing is a process that involves creating an index of all of the web pages that have been fetched and storing it in a large database from which the information could be retrieved.
- Processing - The search engine performs a comparison of the keywords being used in the search with the indexed pages that are stored inside the database whenever it receives a search request.
- Determining the Relevance of Each Page Because numerous pages include the search string, the search engine must determine the significance of each page's inclusion in its index.
- Retrieving Results – The results are displayed in your browser once the search engine has finished retrieving them [3].

Increasing a company's online presence is one of the goals of search engine optimization. Because internet users search for terms relevant to their needs rather than the names of businesses or organisations, it is essential for commercial enterprises to achieve high rankings in the relevant search engine results. The utilisation of appropriate keywords is what makes SEOs possible. Since Google is one of the most widely used search engine, having a page optimised purely for Google also makes the process more accessible to the majority of other search engines. The improvement of the website will bring about an increase in the company's profitability (Stuckenschmidt,2005).

In their study, researchers from a number of different universities looked at the impact that search engine optimization (SEO) had when it was employed as a tool for marketing. The focus of the study was on the impact that organic search engine optimization (SEO) has when it is employed as a marketing tool, as well as its influence on a wide range of marketing factors,



such as market share and brand equity. This hypothesis was empirically tested by employing a questionnaire taken from a survey of 338 people, all of whom were residents of the Delhi National Capital Region (NCR) in India and were selected using a fundamental random selection process. The results of this test can be found in the following table.

On the other hand, a different researcher analysed the many different product marketing methods employing SEOs in their research (Athanasios, N,2014). The interview approach was used to create conclusions about the findings of the observation and literature study. These conclusions suggest that the SEO strategy is helpful for increasing product marketing.



Source: <https://statuslabs.com/defining-seo-best-practices/>

6.3 Web Development:

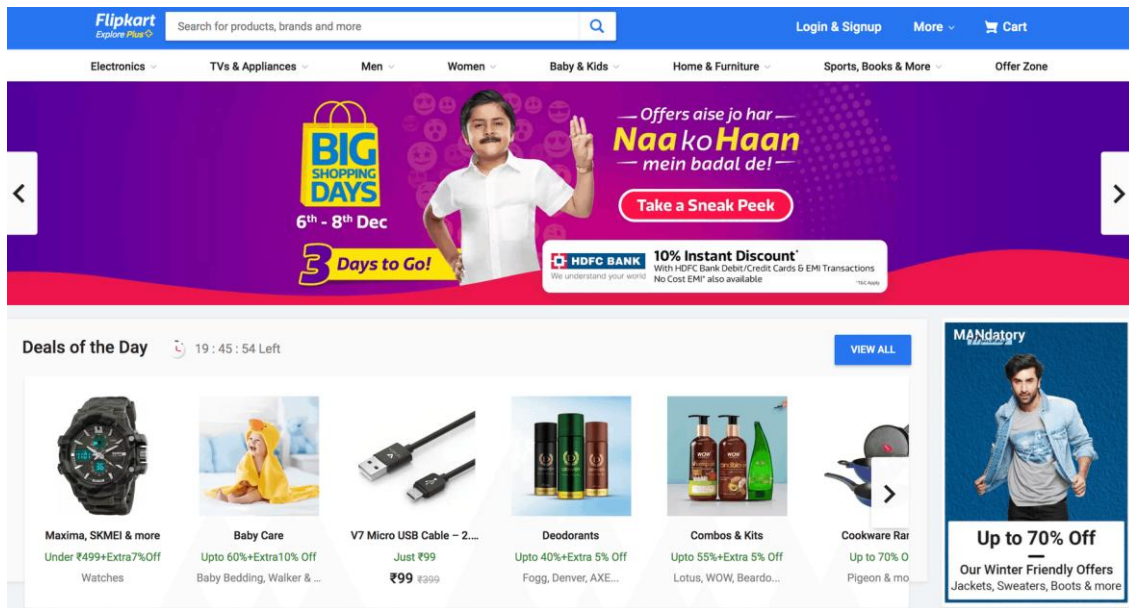
Stores that are run digitally online typically have a structure that is comparable to that of one another. They typically have a home page that highlights certain products or highlights the current best prices.

- A search box that makes it simpler to locate the products you're looking for
- The product page
- The terms and conditions page
- A safe and secure checkout page where you can pay with your credit card, PayPal, or another service of a similar nature

This is the base that you can purchase from the vast majority of internet retailers. The service providers then add their own personal touch in order to differentiate it from the other offerings on the market, such as a distinct layout and the addition of features that are not accessible in any other stores.

The vast majority of online stores are, in reality, web apps, and their creation typically involves the work of web developers and/or software engineers. The application possibilities presented by the web are nearly limitless, which enables the proprietor of an e-commerce business to build their own e-commerce website according to their preferences. The field of web development has been successful up to this point in creating fully functional online stores that are interactive not only with customers but also with the owners of the businesses.

There is always space for development, and that holds true across all business sectors. The previously noted problem of the high cost of returning items purchased online has not been resolved by advances in web technology as of yet.



The Structural flow of the artificial intelligence-powered shopping platform is primarily composed of three distinct components:

Informational architecture,

User's experience, and

User's interface.

To examine the application of the shopping platform website, there are four levels to consider: the structure, the interaction, the visual, and the information design.

Structure design is the framework of a shopping platform. It is based on what customers and businesses want and uses existing artificial intelligence computer technology to design the right framework. This makes it easy for users and makes sure that business information is communicated well. A website that functions as a shopping platform and was designed with the environment of the market it runs in mind. This includes taking into consideration the evident features of the sector as well as the system of scientific and technical accomplishments.

Interactive design places end users in a context that encourages cognitive engagement, aligning operations with their habitual behavioral patterns. Developers need to closely consider the intended users, taking into account the conventional aspects of shopping behavior and analysis. This aids in crafting an enhanced application for virtual online shopping. Employing artificial intelligence can facilitate this process, employing user feedback to analyze issues like impulsive shopping and inquiries on online shopping platforms. By providing actionable insights, developers can effectively address concerns and offer recommendations for refining the user experience.

Perceptual design encompasses the visual aspects tailored to the user, placing them at the design's focal point. This includes factors like text size, color intensity, image authenticity, operating system compatibility, and information transmission sensitivity, all aimed at enhancing the user experience for those being targeted in a search. Shopping platforms exhibit distinctive attributes, spanning from overly vibrant colors and legible text to intricate organization structures and tangible product perceptions. Each platform stands unique in its own right, characterized by varying features and nuances.

The degree to which users of information are involved in the information to the extent that the information may be analysed and applied to the information to enhance the user's capacity to comprehend the information more rapidly is what is meant by the term "information design." The flowchart representation of the user experience design process.

The use of technology that uses artificial intelligence to shopping platforms will be a sign of several major benefits include looking for a product, the process of making a transaction, the process of returning things, and the instructions for making payments. When a programmer decides, depending on the relevance of the information that is being provided, to make it simpler to read by employing technologies that include artificial intelligence in order to do so. The efficient communication of information to users need to be the primary focus of the user experience to the maximum extent that is practically possible. It was mentioned that when it comes to the use of colour and graphics, the attention should not only focus on the demands of visitors to bring attention to the fact that there is a need to find, but it should also be consistent with the site. This was mentioned in reference to the fact that the attention should not only focus on the demands of visitors to bring attention to the fact that there is a need to find.

DIGITAL MARKETERS: PRACTICAL IMPLICATION



In order to maximise the return on investment for each dollar spent in the digital world, this paper describes about the Chatbots, Semantic Search and Web Development the AI applications that digital marketing managers can deploy within their companies. This paper also provides industry marketing professionals with an awareness of how technology may be leveraged to engage, educate, and please their clients for improved client brand engagement that results in purchases. The paper also offers in-depth explanations of how AI is used in every stage of the digital marketing journey depending on the needs of the organisation and how they embrace these technologies to improve their marketing success.

2. RECOMMENDATIONS:

The days when small company stakeholders thought that applying AI technologies required a significant expenditure are long gone. In the present scenario, AI technology has become sufficiently accessible and cost-effective, allowing small businesses to adopt and integrate it based on their specific needs and financial constraints. With little to no technical expertise required, almost every business operating in the digital sphere has access to publicly available algorithms and machine learning services. Hence, irrespective of their scale, enterprises find it more convenient to collect data and glean insights for understanding customer behavior and constructing predictive models for evaluation. This utilization can aid digital marketers in securing necessary approvals from relevant stakeholders by aligning the business strategy with the suitable AI capabilities.

3. CONCLUSION:

Utilizing artificial intelligence (AI) in digital marketing methods offers marketers a considerable array of potential advantages. As a new era of artificial intelligence has begun, companies will soon be able to take use of its capabilities to boost their levels of production, organisational efficiency, and financial gain. Firms will find it easier to acquire new customers, grow their existing customer base, and keep the customers they already have if they have a deeper grasp of the expectations and behaviours of consumers. The most helpful tool for digital marketers will be artificial intelligence technologies since technology is becoming easier to use and more inexpensive. These methods will have a significant impact on customers' decisions about which companies and goods best suit their needs. Thus, in order to grow and satisfy client expectations, markets must implement such technology. In the upcoming decade, uses of AI technology will upend the digital marketing landscape.

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