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Artificial Intelligence for Digital Marketing Transformation in Nepal: A Review

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Abstract

In an era where digital technology is rapidly evolving, the application of Artificial Intelligence (AI) in Digital Marketing (DM) presents a frontier of immense potential, particularly in emerging markets like Nepal. The purpose of this research is to assess the potential of AI in revolutionizing Nepal's digital marketing landscape, identifying both the opportunities it presents and the challenges it faces in a developing market context. The study conducted a comprehensive literature review of 47 articles relating to AI and digital marketing. The study delves into how Nepalese businesses can adopt AI-driven strategies to enhance customer engagement, optimize marketing campaigns, and achieve competitive advantage. Findings reveal a significant potential for AI to transform digital marketing in Nepal by offering personalized customer experiences and improving operational efficiencies. The research also addresses the challenges unique to Nepal, such as limited digital literacy, data privacy concerns, and infrastructural constraints. Practical recommendations are provided for Nepalese businesses and marketers to effectively implement AI tools, with a focus on sustainable and ethical practices. This study contributes to the growing body of knowledge on digital marketing in developing economies and serves as a guide for practitioners and researchers interested in the intersection of AI and DM in South Asian contexts.

Keywords: *Artificial Intelligence, Digital Marketing, Marketing, Nepalese Business*

1. Introduction

Consumers in the modern day are gravitating more and more toward digital experiences. A wide range of digital touch-points are included in digital marketing, and customers interact with them regularly throughout the day. Modern marketing is becoming more automated, intelligent, and data-driven. The laser-like focus of modern marketing has a direct impact on advertising results (P. Kumar et al., 2023; Paschen et al., 2019). The paper V. Kumar et al. (2019) states when technology functions on a human level, it forges a compelling connection with its users, when marketers capitalize on this connection, the possibilities for adding value for customers are vast. According to Epstein (2018), AI-powered marketing solutions that are cutting edge and creative can quickly adjust to the shifting needs of companies and create communications and solution offerings that are profitable and essential for the right stake- holders. Up until 2030, investments in AI technology are expected to increase global gross domestic product by about 14% and it has been estimated that by 2030, artificial intelligence will generate $13 trillion in products and services, increasing the global gross domestic product by about 1.20% annually (Mogaji et al., 2020). AI is probably going to play a big part in things that people used to do, such having effective conversations, communicating, and acting sympathetically(Banerjee & Dua, 2022; P. Kumar et al., 2023; Panwar et al., 2021; Patil et al., 2023; Verma, 2023). There is a fair amount of prior research already available on independently evaluating the influence of AI on discrete marketing functions (Hildebrand, 2019; Jarek & Mazurek, 2019; Prabowo et al., 2019; Siau & Yang, 2017; Stalidis et al., 2015). To date, there exists no dedicated examination into the utilization of artificial intelligence (AI) for the transformation of digital marketing within the Nepalese context. Consequently, the present research endeavors to address this void by conducting a comprehensive analysis. Subsequent research could delve into the practical ramifications of incorporating AI in the realm of digital marketing within the specific context of Nepal.

1.1 Digital Marketing

Digital marketing is a comprehensive approach that uses various digital channels and plat- forms, including the internet, to promote products, services, or brands (Desai & Vidyapeeth, 2019). It covers a wide range of technology-driven process through which companies work together with customers and partners to collectively create, share, provide, and maintain value for all involved parties (Kannan & Li, 2017).

Kannan and Li (2017) provides a thorough analysis of the transformative impact of digital technologies on the business landscape as show in the Figure 3. It shows multiple dimensions, starting with the way digital technologies are bridging information gaps between customers and sellers, influencing consumer behavior, and facilitating customer interactions through platforms and search engines. Certainly, here's a rephrased version: Digital technologies are reshaping conventional product notions through three avenues: enhancing core products with digital services, interconnecting products to reveal latent worth, and converting products into digital services. This transformation generates value for both customers and businesses, with a focus on assessing various outcome dimensions, including value equity, brand equity, customer contentment, customer worth, and corporate value. Marketing research plays a pivotal role in comprehending and harnessing digital technologies by processing information generated through them to inform strategic marketing approaches. Digital marketing encompasses various strategies for lead generation through digital channels, including both free and paid options available to a company. These channels comprise social media, the company's website, search engine rankings, email marketing, display advertising, and the company's blog. In smaller companies, a single generalist may handle multiple digital marketing tactics simultaneously, whereas larger companies often employ specialists who focus on one or two specific digital channels. For example, content marketers may create blog posts to generate leads from a newly created eBook, with social media marketers promoting these posts through paid and organic social media content. Email marketers can complement these efforts by sending additional information to eBook downloaders. These are some common digital marketing tactics and the associated channels involved.

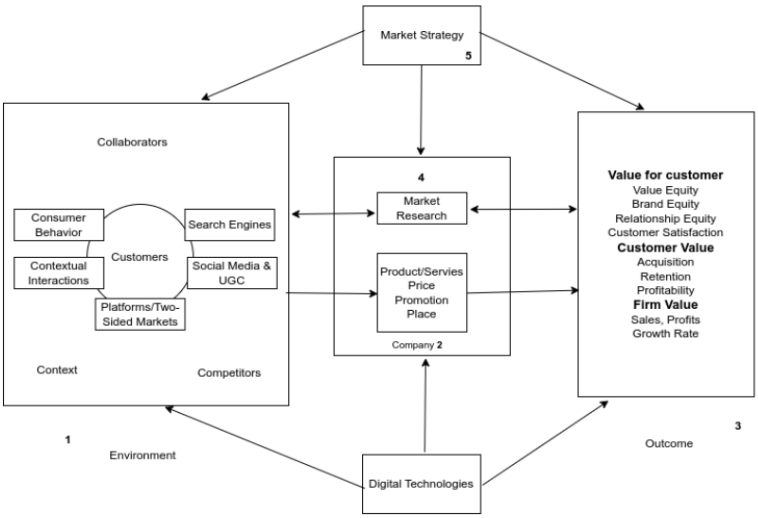

Fig 1: Digital Marketing at a Glance Kannan and Li, 2017

1.1.1 Search Engine Optimization (SEO)

It involves the optimization of a website to achieve higher rankings in search engine results pages, ultimately leading to an increase in organic (unpaid) traffic directed towards web- site. Its strategies are applicable to various digital channels, including websites, blogs, and infographics. The importance of SEO in digital marketing is a recurring theme in the literature. Matta et al. (2020) emphasizes the role of SEO in increasing online presence and profitability, particularly in mobile marketing. G. Prasad and Chandrika (n.d.) underscores the significance of on-page optimization, highlighting key factors such as keyword optimization, site structure, and social media integration. Raju (2021) further supports the need for

effective digital marketing strategies, including SEO, to reach the right audience and enhance customer relationships. Terrance et al. (2017) discusses the interlinkage of search engine marketing and SEO, emphasizing the impact of keyword analysis and other SEO techniques on website traffic and sales revenue. These studies collectively underscore the critical role of SEO in digital marketing.

1.1.2Social Media Marketing

It is a strategic approach that leverages social media channels to enhance brand visibility, boost website traffic, and generate leads for your business. The array of social media platforms available for this marketing method encompasses Facebook, Twitter, LinkedIn, Instagram, Tiktok, Snapchat, Pinterest etc. The intersection of digital marketing and social media marketing is a rapidly evolving field, with social media marketing gaining increasing prominence (Sajin, 2022). This shift is driven by the rise of digital technology, which has transformed the way businesses interact with customers and promote their products (Heinze et al., 2016). The use of trend analysis on social media is a key strategy in digital media marketing, with the potential to enhance customer engagement and generate valuable in- sights (Bhor et al., 2018). However, the success of social media marketing depends on a deep understanding of the target audience and the effective use of content (P. Prasad & Saigal, 2019).

1.1.3Content Marketing

It involves the development and dissemination of content assets with the objective of building brand recognition, increasing website traffic, generating leads, and acquiring customers. The channels that can be integrated into content marketing strategy encompass blog posts, eBooks and whitepapers, infographics, online brochures, and look books. B2B digital content marketing is a valuable tool for building brand trust and requires a "publishing" approach (Holliman & Rowley, 2014). The success of digital marketing is heavily reliant on the quality of content marketing, which requires a deep understanding of the target audience (Baltes, 2015).

1.1.4 Affiliate Marketing

It is a performance-based advertising model where user earn commissions for promoting the products or services of others on their website. Channels for affiliate marketing can involve hosting video ads through the YouTube Partner Program or sharing affiliate links via social media accounts. Affiliate marketing plays a crucial role in the digital space, particularly in the e-commerce platform, by tracking various affiliate campaigns and strengthening the revenue generation model (Chattopadhyay, 2020). Technological innovations in digital marketing, such as personalized user relationships, have further enhanced the effectiveness of affiliate marketing (Oklander et al., 2018).

1.1.5 Native Advertising

It pertains to promotional content that is predominantly content-driven and seamlessly integrated into a platform alongside unpaid content. A notable instance of this is BuzzFeed- sponsored posts, and some also classify social media advertising, such as Facebook advertising and Instagram advertising, as "native" due to its integrated nature within the platform. Native advertising, a form of digital marketing, has gained significant traction in recent years, particularly among digital natives (Smith, 2019; Yao et al., 2021). This type of advertising, which seamlessly blends with its context, has been found to be more effective when it mirrors non-commercial content in design and style (Yao et al., 2021).

1.1.6 Marketing Automation

It involves the use of software to streamline fundamental marketing activities. Numerous marketing departments can utilize automation to handle repetitive tasks that would other- wise be performed manually. These tasks encompass sending email newsletters, scheduling social media posts, updating contact lists, implementing lead-nurturing workflows, and tracking and reporting on campaigns. The use of marketing automation in digital marketing is a growing trend, but its implementation by small and medium enterprises (SMEs) is hindered by data collection requirements and technical knowledge (Semerádová & Weinlich, 2020).

1.1.7 Pay-Per-Click (PPC)

It is a strategy for directing traffic to website through payment to a publisher each time advertisement is clicked. Google AdWords is a prevalent example of PPC, enabling to secure prominent positions on Google's search engine results pages and pay based on the number of clicks links receive. It can also be employed on other platforms like Facebook for paid ads, Twitter for Promoted Tweets, and LinkedIn for Sponsored Messages. Bhandari (2017) emphasizes the significant impact of PPC on consumers, with factors such as ad quality, competition, targeting, trend, and budget playing a key role.

1.1.8 Email Marketing

Organizations employ email marketing as a means of engaging with their target audiences. Email serves as a common channel for promoting content, sharing discounts, announcing events, and guiding individuals to the company's website. The categories of emails typically sent in an email marketing campaign encompass newsletters for blog subscriptions, follow-up messages to website visitors who have downloaded content, welcome emails for customers, holiday promotions targeting loyalty program members, and informative series emails aimed at nurturing customer relationships.

1.1.9 Online PR

It involves the process of acquiring organic online exposure through digital publications, blogs, and other content-driven websites, mirroring traditional PR practices but in the online realm. To enhance PR endeavors in the digital space, channels such as reaching out to reporters via social media and encouraging online reviews of company, can be leveraged. This relationship is particularly important in the modern business landscape, where digital marketing plays a key role in developing public relations values (Nuseir et al., 2022).

Digital marketers closely monitor specific key performance indicators (KPIs) for each marketing strategies to effectively gauge the company's performance. KPIs are essential tools in evaluating and managing the success of various business processes and initiatives. They can be categorized into different types, each serving a unique purpose. Initial KPIs define the overarching objectives of a project or process, providing a clear target for success. Periodic KPIs, on the other hand, are measured at regular intervals and serve as ongoing performance metrics, allowing for continuous monitoring and adjustment. Secondary KPIs complement primary KPIs by offering deeper insights and context into the factors influencing performance. Leading indicators play a crucial role by providing early signals or predictive metrics that help organizations anticipate future outcomes. Together, these KPIs form a comprehensive framework for assessing and improving performance, ensuring that organizations can track progress, make data-driven decisions, and ultimately achieve their strategic goals. Table 1 below shows the KPIs of the some of the widely used digital marketing strategies.

Table 1 KPIs and Leading Indicators in Digital Marketing

Strategy	Leading Indicator	Initial KPI	Periodic KPI	Secondary KPI
Social Media Marketing	Followers	Conversion	Interaction	Site Visits
Search Engine Optimization	Number of Searches	Income	Site Visits	Conversion
Pay Per Click	Number of Searches	Cost per Acquisition	Click Rate	Conversion
Email Marketing	Deliver Rates	Exchange Rate	Open Rate	Click Form
Content Marketing	View Count	Conversion	Jump Rate	Shared Content

1.2 Artificial Intelligence

Artificial Intelligence (AI) is a field that focuses on creating systems capable of performing tasks that typically require human intelligence, such as logical reasoning, learning, problem solving, learning and perception(Ahmed, 2020). It represents a multidisciplinary domain dedicated to automating tasks that currently rely on human intelligence. Despite its relatively low level of widespread recognition, AI is a transformative technology impacting various facets of our daily existence (Sanoff, 2022). As AI continues to advance, it is expected to improve efficiency and accuracy in various processes.

AI is usually confused with the related areas like machine learning or deep learning. In general, AI is the broader field that encompasses the development of intelligent systems and machines. Machine Learning (ML) is a subset of AI that focuses on creating algorithms and models that allow computers to learn and make predictions or decisions from data, without being explicitly programmed (Geng et al., 2019).It has a wide range of applications, from pattern recognition and computer vision to finance and healthcare (El Naqa & Murphy, 2015). Deep Learning (DL) is a specialized branch of ML that uses artificial neural networks with multiple layers to tackle complex tasks, particularly in areas such as image and speech recognition (Bisong, 2019). In essence, DL is a subset of ML, which, in turn, is a subset of the larger field of AI.

1.3Artificial Intelligence in Digital Marketing

AI in digital marketing transformation According to Overgoor et al. (2019), marketing AI is the development of artificial agents that, given the knowledge they have about clients, rivals, and the primary company, suggest and/or take promotional measures to achieve the optimal marketing outcome. It is crucial to look at the important subfields of AI in or- der to comprehend the complex structure of AI that supports DM techniques. The study Sharma et al. (2022) highlights, in order to demonstrate how AI affects DM analysis, an examination of the application of DM techniques in each field should be conducted independently. Talks have been held about a number of aspects of AI technology, such as brain mapping, time series forecasting, and the use of artificial neural networks for process classification. Program approaches, genetic algorithms, and other techniques are part of the field of dynamic computing. Item identification, image conceptualization, and other graphics processing methods are examples of visual features. Robotics is the study of intelligent management and self-directed research. Expertise solutions are data sources for administration, educational institutions, and other purposes. Speech recognition and manufacturing processes are included in recognition systems, and gaming processes related to machinery conversion are included in planning. ML methods include decision tree modelling and data collection (P. Kumar et al., 2023). AI is already having an impact on practically all of the functional areas of marketing, from the client experience to marketing procedures to business decision-making (Hildebrand, 2019; Pitt et al., 2018).

Fig 2: Applications of AI in digital Marketing

1.3.1 Social media

Social media data, particularly from Twitter, to predict users' personalities using AI and sentiment analysis demonstrated the rich potential of social media data in providing insights that extend beyond personal profiling to applications in marketing and recruitment (Villegasch et al., 2022). Aguilar and Garcia focused on enhancing Facebook advertising through a data mining-based intelligent system. This system not only streamlines ad creation but also dynamically adjusts to improve ad performance, addressing challenges like cost, time, and complexity in ad development (Aguilar & Garcia, 2017). Perakakis et al. (2019) introduced an AI-powered platform for social media monitoring, aimed at providing digital marketers with advanced tools for reputation management, competitor analysis, and web presence enhancement. Tzafilkou et al. (2023) presented a method for predicting purchase intent based on facial emotion analysis, using FaceReader

OnlineTM and various classification models where neural networks showed high accuracy in predicting purchase intentions. Nuanmeesri et al. (2022) combined a Multi-Layer Perceptron Neural Network with Correlation-based Feature Selection to analyze social media user behaviors, achieving high accuracy in predicting customer conversion. Salminen et al. (2022) found neural networks effective in detecting customers' pain points from social media content. Liu-Thompkins et al. (2022) introduced the concept of "artificial empathy" to enhance AI's affective and social customer experiences. Capatina et al. (2020) emphasized the importance of aligning future AI-based software capabilities with user expectations, particularly in audience, image, and sentiment analysis, to influence technology adoption.

1.3.2 Consumer behavior analysis

AI's capability to predict and personalize experiences for both existing and potential customers has been a focal point in the recent rise of digital marketing research. Micu et al. (2022) developed a deep learning-based framework for real-time customer profiling and hyper-personalization in physical retail environments. This system collects real-time customer data, providing critical insights into consumer behavior and preferences. In addition, Yang et al. (2021), emphasized the crucial role of AI in precision marketing, focusing on its ability to create more targeted and personalized marketing efforts. Martínez et al. (2020) crafted a predictive analytics tool designed to forecast future consumer behaviors, aiding businesses in aligning their sales and marketing strategies more effectively with consumer demands. Gkikas et al. (2022) combined marketing and computer science to create a model using decision trees and genetic algorithms for predicting consumer behavior in both online and offline shopping scenarios, focusing on variables like gender, household size, and income. Çalı and Balaman (2019) introduced an innovative system utilizing sentiment analysis and multi-criteria assessment to enhance decision-making in product ranking .This system processes online customer reviews to rank products based on customer satisfaction, offering businesses valuable insights into consumer preferences. Meanwhile, W. Zhang et al. (2022) investigated AI-driven word-of-mouth systems, discovering that consumers prioritize the amount of information over its quality, with risk perception significantly influencing their purchase decisions.

1.3.3 E-Commerce

The e-commerce sector has undergone significant transformation due to the adoption of AI, especially in the area of conversational AI. Dwivedi et al. (2023) thoroughly investigated ChatGPT, a text-generation AI, and its applications in various sectors including banking and hospitality, acknowledging its potential in boosting productivity. Research by Li and Wang (2023) revealed that e-commerce chatbots using casual language could strengthen customer relationships, particularly for those already familiar with the brand. Meanwhile, Kim and Hur (2023) found that adding personalization and human-like characteristics to AI chatbots enhanced perceived friendliness and competence, leading to greater acceptance by users. Trivedi et al. (2022) study used machine learning to forecast online shopping behaviors, developing an algorithm to assist e-commerce platforms in customizing recommendations for users. Silva and Bonetti (2021) investigated how the fashion industry interacted with digital entities during the COVID-19 pandemic, offering vital insights for the industry's digital shift, particularly in light of the accelerated move to e-commerce and the increased focus on sustainable practices.

1.3.4 Digital Advertising

In the realm of online advertising, AI has been a game-changer, with studies offering varied perspectives and solutions. Guerreiro et al. (2022) highlighted the role of smart speakers in advertising, emphasizing consumer acceptance based on perceived usefulness and hedonic motivations, but noting privacy concerns. Guo (2022) research explored voice data mining for more immersive e-commerce advertising, while Rodgers and Nguyen (2022) dis- cussed ethical considerations in AI advertising. Aljabri and Mohammad (2023) addressed click fraud using machine learning, particularly the random forest algorithm. Shi and Wang (2023) presented a neural network model for predicting ad click-through rates. Miralles Pechuán et al. (2018) focused on mobile network-based advertising for smaller networks, and Q. Zhang et al. (2017) developed a model to combat spam comments in online advertising. Each of these studies contributes to a nuanced understanding of AI's multifaceted influence on online advertising, from enhancing user engagement to tackling ethical and operational challenges.

1.3.5 Competitive strategies

Recent research has increasingly focused on the role of AI in enhancing competitive marketing strategies. Wang (2022) study emphasized the importance of market positioning and various strategic aspects for innovating e-commerce marketing in the era of big data and AI. Giri et al. (2019) in West Bengal, India, explored AI's impact on developing marketing strategies in the retail sector, noting its crucial role in customer data analysis. Chang and Fan (2023) suggested using AI algorithms for market segmentation, demonstrating their effectiveness in market targeting. Stone et al. (2020) conducted a literature review on AI in strategic marketing, calling for more research on AI's influence in this competitive area. Furthermore, Bag et al. (2021) explored how AI, powered by big data, contributes to knowledge creation in B2B marketing, affecting customer and market knowledge crucial for decision-making and firm performance. Boddu et al. (2022) suggested the profound impact of AI on marketing practices, arguing that data-driven strategies furnish businesses with a substantial competitive advantage. These studies collectively underline AI's transformative role in evolving marketing strategies, from e-commerce innovation to strategic development. They point to the potential of AI in giving companies a competitive advantage, while also acknowledging the challenges in AI adoption and the importance of balancing technological and human aspects in marketing.

1.4 Problem Statement

Despite the growing significance of digital marketing, Nepal faces challenges in adopting and leveraging AI to enhance its digital marketing landscape. The lack of comprehensive understanding and strategic implementation of AI technologies hinders the full potential of digital marketing practices in Nepal. Addressing these challenges is crucial for ensuring sustainable growth and competitiveness in the digital era. Few studies have explored this particular subject, and there has been a noticeable absence of a systematic literature review concerning Nepal. This study bridges this gap by offering an extensive literature review on the subject, serving as a valuable resource for researchers aiming to conduct empirical research in the context of Nepal in the future.

1.5 Research Questions

- How can Nepalese businesses effectively leverage AI to personalize marketing strategies and enhance customer engagement?
- What are the unique opportunities and challenges for leveraging AI in Digital Marketing within the context of Nepal's digital infrastructure and market dynamics?

1.6 Research Objectives

- To identify the most effective AI-driven techniques for personalizing marketing strategies and enhancing customer engagement among businesses in Nepal.
- To explore AI's potential and hurdles in enhancing Nepal's Digital marketing land- scape.

2. Literature Review

Pokhrel and K C (2023) conducted an investigation into the interplay among mobile banking service quality (MB-SQ), user satisfaction (SAT), and the propensity to persist in utilizing mobile banking services in the context of Nepal. Their analysis disclosed compelling evidence indicating that MB-SQ exerts a noteworthy and favorable impact on both user satisfaction (SAT) and the intention to sustain the use of mobile banking (CI). Furthermore, the study unveiled that user satisfaction serves as a partial mediator in the linkage between MB-SQ and CI. In research Rahman (2023), a thorough analysis was conducted on the incorporation of AI within the banking sector of Nepal, with a particular focus on its merits, obstacles, and the significance of collaborations between banks and AI firms. The study highlighted the swift evolution of the banking industry driven by AI technology, encompassing task automation, elevated customer experiences, and improved decision-making. His research demonstrated the utilization of AI in domains like client verification, enhancement of customer relationships, and the detection of fraudulent activities, with the associated benefits including increased efficiency and enhanced customer satisfaction, although it's essential to recognize the concurrent challenges, including implementation costs, privacy issues, and the need for regulatory supervision.
Wenan et al. (2023) states Digital technologies have become important in tourism business and their development is reshaping this industry. The role of emerging technology and the value they add to the current digital business system in

tourism sector of Nepal is of utmost valuable, (Bhattarai & Malla, 2021; Wenan et al., 2023). In order to endure, the tourism sector is shifting its focus towards domestic tourism, much like the approach adopted in the aftermath of the 2015 earthquake. Bhattarai and Malla (2021) outlines a set of recovery strategies, including the promotion of domestic tourism, improvement of infrastructure, a heightened emphasis on niche tourism segments such as trekking and eco-tourism, targeting neighboring markets and pilgrimage tourism, emphasizing Nepal as a secure destination, and leveraging digital marketing. In the study conducted by Parajuli et al. (2021), it was observed that a significant portion of consumers in Nepal exhibit a favorable disposition towards online marketing, showing a keen interest in online purchases and utilizing online services. These consumers perceive online marketing as a valuable source of informative content and express satisfaction with the quality and availability of products online. However, challenges persist within the online marketing sector, including issues related to product discovery on social media, the necessity for rapid mobile-responsive websites, the importance of secure and dynamic website functionality, and the effectiveness of email marketing engagement. Enhancing consumer trust and optimizing delivery services as well as focusing on word-of- mouth (ewom) could enhance the overall online shopping experience and aid to purchase intention in consumer behavior(Manandhar, 2023; Parajuli et al., 2021).
Maharjan et al. (2022) elaborates the elements influencing satisfaction encompass perceived value, ease of utilization, attitude, trust, and the actual e-purchase encounter, signifying that satisfaction is crafted through these perceptions and interactions. Suggested actions involve giving attention to e-wallet technology, resolving internet connectivity concerns, and fostering consumer trust. They emphasized the need for industry practitioners to confront obstacles and elevate the perceived value and user-friendliness of FinTech services to promote their adoption among online grocery shoppers in Nepal. Lamichhane (2022) provides practical guidance for entrepreneurs and marketers, emphasizing the importance of building trust in digital marketing practices and utilizing analytics tool, where, social media marketing and search engine optimization and marketing are the most influential aspects, while email marketing and mobile marketing exhibit a lower level of influence. A study focused on machine learning to identify competent project managers by developing a prediction model revealed that project managers in Nepal excel in leadership, personal traits, team development, communication, technical skills, problem-solving, and stakeholder management. The logistic classifier was selected as the best performing model among seven classifiers, with high accuracy. The model's application in human resources can enhance recruitment decisions. Performance evaluation demonstrates its ability to accurately predict project manager performance. The model is efficient and highlights the importance of personal characteristics in determining competence. Future research possibilities include reinforcement learning and application in different contract conditions, showcasing the effectiveness of machine learning in this context. Utilizing the UTAUT model, the research conducted by Nepal and Nepal (2023) underscores the necessity of improving the convenience, security, and accessibility of digital marketing services as a means to encourage broader adoption in the context of Nepal

3. Research Methodology

This research incorporated a meticulous review of 41 scholarly articles. An exhaustive search was carried out for primary sources across multiple electronic databases such as Web of Science, Google Scholar, and Scopus. It is imperative for studies targeting particular segments of a population to transparently define the parameters for participant inclusion and exclusion. By adhering to this methodology, researchers can ensure a more dependable, precise, and unbiased identification of the study population. The review was selective, including only articles from English-language journals that have been peer-reviewed, while explicitly omitting theses and dissertations.

4. Result and Discussion

This section illustrate the juxtaposition of global advancements and Nepal's evolving landscape in digital marketing through AI integration. Globally, the swift adoption of cutting-edge technologies underscores the potential for enhanced customer experiences, a trend supported by developed markets with their robust digital infrastructures (Smith, 2021; Johnson et al., 2020). In contrast, Nepal, while progressing, encounters significant challenges related to infrastructure and internet connectivity, which are vital for unlocking AI's full potential in digital marketing (Maharjan et al., 2022). The adoption of AI in Nepal's industries is hindered by challenges such as small market size and a lack of skilled manpower (Devkota et al., 2022).The global narrative on building consumer trust through data privacy and security resonates in Nepal, albeit with varying degrees of implementation and regulatory frameworks (Gupta & Zhao, 2019; Maharjan et al., 2022). The inclination of Nepalese consumers towards online marketing and engagement parallels a worldwide trend, emphasizing the universality of digital adoption and the strategic imperative for businesses to pursue digital-first strategies, further accentuated by the

COVID-19 pandemic (Parajuli et al., 2021). This alignment indicates a ripe market for AI-driven personalization and engagement in Nepal, mirroring international practices. Moreover, the critical role of service quality in influencing customer satisfaction and loyalty, both locally (Pokhrel and K C, 2023) and globally (Lee, 2020), emphasizes the importance of leveraging AI for superior digital experiences. Nepal's digital marketing ambitions are tempered by obstacles such as market size, skill gaps, data security concerns, and the high costs associated with AI adoption. This scenario stresses a pivotal moment for Nepal to strategically navigate these challenges, leveraging AI to redefine its digital marketing landscape in alignment with global trends and consumer expectations.

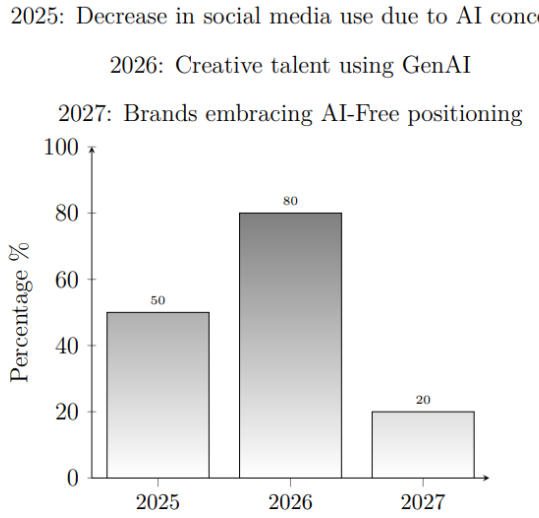

Fig 3: Future trend in Digital Marketing (Source: https://www.gartner.com/en)

Figure 3 illustrates the decline in social media use by 2025 as a result of consumer concerns about AI disseminating false information on social media platforms. This shows a large decline in the use of popular social media sites. By 2026, Generative AI (GenAI) will produce the majority of creative content, signaling a significant shift in the way creative professionals employ GenAI. This will free up more time for strategic and creative work, which will lead to higher spending on creative talent. It is anticipated that by 2027, a certain group of companies would set themselves apart by marketing their goods and services as AI-Free, appealing to consumers who value ethics and genuineness.

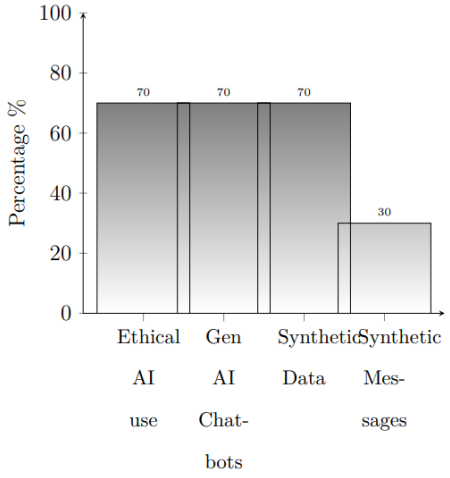

Fig 4: Predictions for Generative AI (2025) (Source: https://www.gartner.com/en)

Figure 4 depicts significant trends in artificial intelligence and digital communication in 2025. It predicts a strong focus by enterprises on sustainable and ethical AI usage. The expected necessity for human oversight in a substantial portion of customer support interactions will be managed by Generative AI chatbots. The chart also suggests a major shift in machine

learning practices, with a reliance on explanations rather than real data. Trend towards the synthetic generation of a notable fraction of outbound marketing messages is projected.

5. Conclusions

In this study, the focus is on the potential of AI to revolutionize marketing practices in the context of Nepal's diverse culture and rapidly evolving digital environment. The research identifies key challenges such as limited digital literacy, data privacy concerns, and infrastructural limitations, which are crucial in the adoption of AI in DM within Nepal. The paper explores the vast opportunities AI presents in both the private and public sectors, encompassing personalized marketing, improved customer engagement, and data-informed decision-making. The influence of AI is seen to span various sectors, including healthcare, education, and governance, indicating its extensive applicability.

From a theoretical standpoint, the study significantly enriches the understanding of AI within the realm of DM, particularly in a developing economy like Nepal. It bridges the gap in the current literature by providing an integrated perspective that combines AI concepts with practical marketing strategies, underlining the dynamic role of technology in a diverse and evolving digital landscape. The study lays down a theoretical foundation for comprehending how AI can bolster customer engagement, streamline marketing operations, and foster a competitive edge in a market characterized by rapid digitization and distinctive cultural diversity.

On a practical level, the study presents valuable insights for both businesses and policymakers in Nepal. It outlines how organizations can effectively use AI to tailor marketing strategies, enhance customer interactions, and base decisions on data-driven insights. The research highlights the essential need for developing infrastructural capabilities, improving digital literacy, and ensuring stringent data privacy and security protocols to overcome the practical challenges in implementing AI in DM. It stresses the importance of targeted training and educational programs to cultivate a workforce proficient in AI and digital marketing. The study underscores the role of policymakers in creating conducive environments and frameworks that promote the advancement of AI and digital marketing, taking into account Nepal’s unique social and cultural fabric.

References

Aguilar, J., & Garcia, G. (2017). An adaptive intelligent management system of advertising for social networks: A case study of facebook. *IEEE Transactions on Computational Social Systems*, *5* (1), 20–32.

Aljabri, M., & Mohammad, R. M. A. (2023). Click fraud detection for online advertising using machine learning. *Egyptian Informatics Journal*, *24* (2), 341–350.

Bag, S., Gupta, S., Kumar, A., & Sivarajah, U. (2021). An integrated artificial intelligence framework for knowledge creation and b2b marketing rational decision making for improving firm performance. *Industrial marketing management*, *92*, 178–189.

Baltes, L. P. (2015). Content marketing-the fundamental tool of digital marketing. *Bulletin of the Transilvania University of Brasov. Series V: Economic Sciences*, 111-118.

Banerjee, K., & Dua, S. (2022). Astoundingly smart system furnishing ranking of big data in search engines,". *Journal of Computers, Mechanical and Management*, *1*(1), 19-29.Bhattarai, B., & Malla, S. (2021). Marketing strategies of nepalese tourism industry post covid-19. *Annamalai International Journal of Business Studies & Research*, *13* (1).

Bhor, H. N., Koul, T., Malviya, R., & Mundra, K. (2018). Digital media marketing using trend analysis on social media. *2018 2nd International Conference on Inventive Sys- tems and Control (ICISC)*, 1398–1400.

Boddu, R. S. K., Santoki, A. A., Khurana, S., Koli, P. V., Rai, R., & Agrawal, A. (2022). An analysis to understand the role of machine learning, robotics and artificial intelligence in digital marketing. *Materials Today: Proceedings*, *56*, 2288–2292.

Çalı, S., & Balaman, Ş. Y. (2019). Improved decisions for marketing, supply and purchasing: Mining big data through an integration of sentiment analysis and intuitionistic fuzzy multi criteria assessment. *Computers & Industrial Engineering*, *129*, 315–332.

Capatina, A., Kachour, M., Lichy, J., Micu, A., Micu, A.-E., & Codignola, F. (2020). Matching the future capabilities of an artificial intelligence-based software for social media marketing with potential users' expectations. *Technological Forecasting and Social Change*, *151*, 119794.

Chang, Y.-T., & Fan, N.-H. (2023). A novel approach to market segmentation selection using artificial intelligence techniques. *The Journal of Supercomputing*, *79*(2), 1235–1262.

Chattopadhyay, P. (2020). The role of affiliate marketing in digital space: A conceptual approach. *International Journal for Modern Trends in Science and Technology*, *6*(5), 53–59.

Desai, V., & Vidyapeeth, B. (2019). Digital marketing: A review. *International Journal of Trend in Scientific Research and Development*, *5*(5), 196–200.

Devkota, N., Paudel, R., Parajuli, S., Paudel, U. R., & Bhandari, U. (2022). Artificial intelligence adoption among nepalese industries. *Advances in Electronic Government, Digital Divide, and Regional Development*. https://api.semanticscholar.org/CorpusID: 247041625

Dwivedi, Y. K., Kshetri, N., Hughes, L., Slade, E. L., Jeyaraj, A., Kar, A. K., Baabdullah, A. M., Koohang, A., Raghavan, V., Ahuja, M., et al. (2023). "so what if chatgpt wrote it?" multidisciplinary perspectives on opportunities, challenges and implications of generative conversational ai for research, practice and policy. *International Journal of Information Management*, *71*, 102642.

Giri, A., Chatterjee, S., Paul, P., & Chakraborty, S. (2019). Determining the impact of artificial intelligence on'developing marketing strategies' in organized retail sector of West Bengal, India. *International Journal of Engineering and Advanced Technology*, *8*(6), 3031-3036.

Gkikas, D. C., Theodoridis, P. K., & Beligiannis, G. N. (2022). Enhanced marketing decision making for consumer behaviour classification using binary decision trees and a genetic algorithm wrapper. *Informatics*, *9* (2),

45.

Guerreiro, J., Loureiro, S. M. C., & Ribeiro, C. (2022). Advertising acceptance via smart speakers. *Spanish Journal of Marketing-ESIC*, *26*(3), 286–308.

Guo, C. (2022). Intelligent Voice System Design for Optimizing E-Business Advertising Rhetoric Based on SVM Algorithm. *Computational Intelligence and Neuroscience*, *2022*.

Hassan, A. (2021). The usage of artificial intelligence in digital marketing: A review. *Applications of Artificial Intelligence in Business, Education and Healthcare*, 357-383.

Heinze, A., Fletcher, G., & Cruz, A. (2016). *Digital and social media marketing: A results- driven approach.* Routledge.

Hildebrand, C. (2019). The machine age of marketing: How artificial intelligence changes the way people think, act, and decide. *NIM Marketing Intelligence Review*, *11*, 10–17. https://doi.org/10.2478/nimmir-2019-0010

Holliman, G., & Rowley, J. (2014). Business to business digital content marketing: Marketers' perceptions of best practice. *Journal of research in interactive marketing*, *8*(4), 269– 293.

Jarek, K., & Mazurek, G. (2019). Marketing and artificial intelligence. *Central European Business Review*, *8*, 46–55. https://doi.org/10.18267/j.cebr.213

Kannan, P. K. (2017). Digital marketing: A framework, review and research agenda. *International journal of research in marketing*, 34(1), 22-45.

Kim, W. B., & Hur, H. J. (2023). What makes people feel empathy for ai chatbots? Assessing the role of competence and warmth. *International Journal of Human–Computer Interaction*, 1–14.

Kumar, V., Rajan, B., Venkatesan, R., & Lecinski, J. (2019). Understanding the role of artificial intelligence in personalized engagement marketing. *California Management Review*, *61*, 000812561985931. https://doi.org/10.1177/0008125619859317

Lamichhane, B. (2022). Impact of digital marketing on consumer behavior in pokhara. *KIC International Journal of Social Science and Management*, *1*(1), 13–23.

Li, M., & Wang, R. (2023). Chatbots in e-commerce: The effect of chatbot language style on customers' continuance usage intention and attitude toward brand. *Journal of Retailing and Consumer Services*, *71*, 103209.

Liu-Thompkins, Y., Okazaki, S., & Li, H. (2022). Artificial empathy in marketing interactions: Bridging the human-ai gap in affective and social customer experience. *Journal of the Academy of Marketing Science*, *50*(6), 1198–1218.

Maharjan, P., Devkota, N., Mahapatra, S., Padda, I., Dhakal, K., Mahato, S., Khanal, G., Parajuli, S., & Paudel, U. (2022). Fintech adoption among online grocery buyers during covid-19 lockdowns in nepal. *Journal of Private Enterprise*, *37*, 57–89.

Manandhar, R. (2023). An effect of word of mouth in mobile purchase intention: A cases from kathmandu. *Journal of Accountancy & Finance*, *9*. https://doi.org/10.57075/ jaf922sp02

Martínez, A., Schmuck, C., Pereverzyev Jr, S., Pirker, C., & Haltmeier, M. (2020). A machine learning framework for customer purchase prediction in the non-contractual setting. *European Journal of Operational Research*, *281*(3), 588–596.

Matta, H., Gupta, R., & Agarwal, S. (2020). Search engine optimization in digital marketing: Present scenario and future scope. *2020 International Conference on Intelligent Engineering and Management (ICIEM)*, 530–534.

Micu, A., Capatina, A., Cristea, D. S., Munteanu, D., Micu, A.-E., & Sarpe, D. A. (2022). Assessing an on-site customer profiling and hyper-personalization system prototype based on a deep learning approach. *Technological Forecasting and Social Change*, *174*, 121289.

Miralles-Pechuán, L., Ponce, H., & Martínez-Villaseñor, L. (2018). A novel methodology for optimizing display advertising campaigns using genetic algorithms. *Electronic Commerce Research and Applications*, *27*, 39–51.

Mogaji, E., Soetan, T., & Kieu, T. (2020). The implications of artificial intelligence on the digital marketing of financial services to vulnerable customers. *Australasian Marketing Journal (AMJ)*, *29*. https://doi.org/10.1016/j.ausmj.2020.05.003

Nepal, S., & Nepal, B. (2023). Adoption of digital banking: Insights from a utaut model. *Journal of Business and Social Sciences Research*, *8*, 17–34. https://doi.org/10.3126/ jbssr.v8i1.56580

Nuanmeesri, S., Poomhiran, L., & Sriurai, W. (2022). Artificial intelligence model of the user patterns and behaviors analysis on social media to become customers in smart marketing. *Int. J. Eng. Trends Technol.*, *70*(10), 393–401.

Nuseir, M., Aljumah, A., & El-Refae, G. (2022). Digital marketing and public relations: A way to promote public relations value. *International Journal of Data and Network Science*, *6*(4), 1331–1340.

Oklander, M., Oklander, T., Yashkina, O., Pedko, I., & Chaikovska, M. (2018). Analysis of technological innovations in digital marketing. *Eastern-European Journal of Enterprise Technologies*, *5* (3 (95)), 80–91.

Overgoor, G., Chica, M., Rand, W., & Weishampel, A. (2019). Letting the computers take over: Using ai to solve marketing problems. *California Management Review*, *61*, 156–185. https://api.semanticscholar.org/CorpusID:199361407

Panwar, V., Sharma, D., Kumar, K., Jain, A., & Thakar, C. (2021). Experimental investigations and optimization of surface roughness in turning of en 36 alloy steel using response surface methodology and genetic algorithm. *Materials Today: Proceedings*, *46*. https://doi.org/10.1016/j.matpr.2021.03.642

Parajuli, S., Bijukshe, A., Devkota, N., Bhandari, U., & Poudel, U. (2021). Nepalese customers' attitude and preferences towards online marketing: Index based analysis. *International Journal of Marketing & Human Resource Research*, *2* (4), 211–223.

Paschen, J., Kietzmann, J., & Kietzmann, T. (2019). Artificial intelligence (ai) and its implications for market knowledge in b2b marketing. *Journal of Business & Industrial Marketing*, *34*. https://doi.org/10.1108/JBIM-10-2018-0295

Patil, D., Saxena, J., Vineetha, R., Paul, R., Shetty, D., Sharma, S., Smriti, K., Singhal, D., & Naik, N. (2023). Age assessment through root lengths of mandibular second and third permanent molars using machine learning and artificial neural networks. *Journal of Imaging*, *9*, 33. https://doi.org/10.3390/jimaging9020033

Perakakis, E., Mastorakis, G., & Kopanakis, I. (2019). Social media monitoring: An innovative intelligent approach. *Designs*, *3* (2), 24.

Pitt, C., Eriksson, T., Dabirian, A., & Vella, J. (2018). Elementary, my dear watson: The use of artificial intelligence in marketing research: An abstract. *Boundary Blurred: A Seamless Customer Experience in Virtual and Real Spaces: Proceedings of the 2018 Academy of Marketing Science (AMS) Annual Conference 46*, 325–325.

Pokhrel, L., & K C, A. (2023). Mobile banking service quality and continuance intention: Mediating role of satisfaction: A two-stage structural equation modeling- artificial neural network approach. https://doi.org/10.1108/IJBM-11-2022-0512

Prabowo, S. H. W., Murdiono, A., Hidayat, R., Rahayu, W. P., & Sutrisno, S. (2019). Digital marketing optimization in artificial intelligence era by applying consumer behavior algorithm. *Asian Journal of Entrepreneurship and Family Business*, *3*(1), 41–48.

Rahman, D.-A. (2023). Modern banking sector employs artificial intelligence (ai). *7*, 21–31.

Raju, D. C. B. (2021). Search engine optimization: A digital marketing giant and need of time. https://api.semanticscholar.org/CorpusID:242103255

Rodgers, W., & Nguyen, T. (2022). Advertising benefits from ethical artificial intelligence algorithmic purchase decision pathways. *Journal of business ethics*, *178*(4), 1043– 1061.

Rosa-Salas, M., & Sobande, F. (2022). Hierarchies of knowledge about intersectionality in marketing theory and practice. *Marketing Theory*, *22*(2), 175–189.

Sajin, V. (2022). Social media marketing and digital marketing.

Salminen, J., Mustak, M., Corporan, J., Jung, S.-g., & Jansen, B. J. (2022). Detecting pain points from user-generated social media posts using machine learning. *Journal of Interactive Marketing*, *57*(3), 517–539.

Semerádová, T., & Weinlich, P. (2020). Readiness of small and medium enterprises for marketing automation. *ACC Journal*.

Sharma, D., Kudva, V., Patil, V., Kudva, A., & Bhat, R. S. (2022). A convolutional neural network based deep learning algorithm for identification of oral precancerous and cancerous lesion and differentiation from normal mucosa: A retrospective study. *Engineered Science*, *18*, 278–287. https://doi.org/10.30919/es8d663

Shi, B., & Wang, H. (2023). An ai enabled approach for improving advertising identification and promotion in social networks. *Technological Forecasting and Social Change*, *188*, 122269.

Siau, K., & Yang, Y. (2017). Impact of artificial intelligence, robotics, and machine learning on sales and marketing.

Silva, E. S., & Bonetti, F. (2021). Digital humans in fashion: Will consumers interact? *Journal of Retailing and Consumer Services*, *60*, 102430.

Smith, K. T. (2019). Mobile advertising to digital natives: Preferences on content, style, personalization, and functionality. *Journal of Strategic Marketing*, *27*(1), 67–80.

Stalidis, G., Karapistolis, D., & Vafeiadis, T. (2015). Marketing decision support using artificial intelligence and knowledge modeling: Application to tourist destination management. *Procedia - Social and Behavioral Sciences*, *175*. https://doi.org/10.1016/j. sbspro.2015.01.1180

Stone, M., Aravopoulou, E., Ekinci, Y., Evans, G., Hobbs, M., Labib, A., Laughlin, P., Machtynger, J., & Machtynger, L. (2020). Artificial intelligence (ai) in strategic marketing decision-making: A research agenda. *The Bottom Line*, *33*(2), 183–200.

Terrance, A. R., Shrivastava, S., & Kumari, A. (2017). Importance of search engine marketing in the digital world. *ICITKM*, *14*, 155–158.

Trivedi, S. K., Patra, P., Srivastava, P. R., Zhang, J. Z., & Zheng, L. J. (2022). What prompts consumers to purchase online? a machine learning approach. *Electronic Commerce Research*, 1–37.

Tzafilkou, K., Economides, A. A., & Panavou, F.-R. (2023). You look like you'll buy it! purchase intent prediction based on facially detected emotions in social media campaigns for food products. *Computers*, *12* (4), 88.

Verma, C. P. (2023). Enhancing Parameters of LEACH Protocol for Efficient Routing in Wireless Sensor Networks. *Journal of Computers, Mechanical and Management*, *2*(1), 26-31.

Villegas-Ch, W., Erazo, D. M., Ortiz-Garces, I., Gaibor-Naranjo, W., & Palacios-Pacheco, X. (2022). Artificial intelligence model for the identification of the personality of twitter users through the analysis of their behavior in the social network. *Electronics*, *11* (22), 3811.

Wang, J. (2022). Innovation of e-commerce marketing model under the background of big data and artificial intelligence. *Journal of Computational Methods in Sciences and Engineering*, *22* (5), 1721–1727.

Wenan, T., Shrestha, D., Shrestha, D., Rajkarnikar, N., & Jeong, S. R. (2022, October). The Role of Emerging Technologies in Digital Tourism Business Ecosystem Model for Nepal. In *International Conference on Intelligent Computing & Optimization* (pp. 1123-1137). Cham: Springer International Publishing.

Yang, X., Li, H., Ni, L., & Li, T. (2021). Application of artificial intelligence in precision marketing. *Journal of Organizational and End User Computing (JOEUC)*, *33* (4), 209–219.

Yao, W., Zawawi, J. W. B. M., Muati, A., Ahmad, Z., & Sern, T. J. (2021). Recognizing native advertising and its challenge to traditional advertising.

Zhang, Q., Wu, J., Zhang, P., Long, G., & Zhang, C. (2017). Collective hyping detection system for identifying online spam activities. *IEEE Intelligent Systems*, *32*(5), 53-63.