Leveraging Artificial Intelligence for Digital Marketing: Insights from SHEIN for VMS Industry

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Abstract

In the current global landscape, where technology-driven data penetration is the hardcore of digital marketing, Artificial Intelligence has gained paramount importance. This paper explores artificial intelligence applied to digital marketing practices through associated technologies. Through qualitative and quantitative approaches, we aim to propose research directions addressing AI challenges firms encounter in marketing. A qualitative interview with VMS Industry's marketing manager and a quantitative analysis of Hugging Face's implementation in SHEIN's marketing activities were conducted. The results have revealed that using Artificial Intelligence fundamentally redefines how firms' approach and succeed in their digital marketing practices. SHEIN's experience in integrating artificial intelligence into its marketing practices could be an emerging solution for gaining visibility on the web. For the VMS Industry, the results have confirmed that Artificial Intelligence's selective and targeted use in personalizing interactions with customers and creating visual and textual content is optimized.

Keywords: Artificial Intelligence; Digital Marketing; Competitiveness; VMS Industry; SHEIN.

JEL classification codes : M15 ; M31 ; L86

توظيف الذكاء الاصطناعي في التسويق الرقمي: رؤى من تجربة SHEIN ل VMS Industry

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الملخص:

في المشهد العالمي الحالي، حيث تُعَدّ الاختراقات التقنية في البيانات الأساس القوي للتسويق الرقمي، اكتسب الذكاء الاصطناعي أهمية قصوى. تستكشف هذه الورقة تطبيق الذكاء الاصطناعي في ممارسات التسويق الرقمي من خلال التقنيات المرتبطة به. من خلال مناهج نوعية وكمية، نهدف إلى اقتراح اتجاهات بحثية تعالج التحديات التي تواجهها الشركات في التسويق باستخدام الذكاء الاصطناعي. أجرينا مقابلة نوعية مع مدير التسويق في شركة VMS Industry وتحليل كمي لتطبيق Hugging Face في أنشطة التسويق الخاصة بشركة SHEIN. كشفت النتائج أن استخدام الذكاء الاصطناعي يعيد بشكل أساسي تعريف كيفية تعامل الشركات مع ممارسات التسويق الرقمي ونجاحها فيها. يمكن أن تكون تجربة SHEIN في دمج الذكاء الاصطناعي في ممارساتها التسويقية حلاً ناشئًا لاكتساب الرؤية على الويب. بالنسبة لصناعة VMS، أكدت النتائج أن الاستخدام الانتقائي والمستهدف للذكاء الاصطناعي في تخصيص التفاعلات مع العملاء وإنشاء المحتوى البصري والنصي يعتبر مثاليًا.

الكلمات المفتاحية: ذكاء اصطناعي ; تسويق رقمي ; قدرة تنافسية ; VMS Industry ; SHEIN.

تصنيف JEL: L86 ; M31 ; M15.

Introduction

Artificial intelligence (AI) will become an integral part of all business entities worldwide in the long term. The new trends in AI-driven automation reflect significant changes in the digital marketing landscape (Heimbach, Kostyra, & Hinz, 2015), such as automatically generated product recommendations based on a customer's previous buying behavior, which enhance engagement and conversion rates. Artificial intelligence is a buzzword that requires a contextualized definition. It involves the process of creating intelligent machines, and intelligence is the property that enables an object to perform correctly and predictably in its environment (Haenlein & Kaplan, 2019). Simply put, artificial intelligence is a process that integrates cloud technology, network equipment, robotics, and digital media generation, as well as various business procedures, technologies, and daily operations. This manifests as reconfigured ideas, interests, and investments in businesses' integration of AI.

In recent years, advancements in information and communication technologies have catalyzed the emergence of a dynamic new digital marketing ecosystem ((Stone, 2014). This ecosystem encompasses various platforms, channels, and tools that enable businesses to engage with consumers innovatively. Within this rapidly evolving landscape, integrating AI applications represents a transformative development. AI applications are pivotal game-changers, mainly when used for sales forecasting analysis. By leveraging AI algorithms to analyze vast datasets and identify patterns, businesses can gain invaluable insights into consumer behavior, market trends, and demand fluctuations (van Esch & Stewart Black, 2021). This predictive capability empowers organizations to optimize their inventory management processes, ensuring they maintain optimal stock levels while minimizing excess or obsolete inventory.

Moreover, AI-driven sales forecasting enables more effective promotion management strategies. By accurately predicting future demand for products and services, businesses can tailor their promotional efforts to target specific customer segments and capitalize on emerging market opportunities. This targeted approach enhances the effectiveness of digital marketing campaigns and maximizes return on investment by minimizing wasteful spending on irrelevant or poorly timed promotions. Furthermore, by optimizing resource allocation and improving decision-making accuracy, AI enables firms to operate more efficiently and competitively in today's fast-paced digital marketplace.

Digital marketing has evolved to deliver visually captivating customer experiences, using AI for advertising across popular social media and digital platforms like Facebook and Instagram. These platforms employ sophisticated algorithms to meticulously analyze user data, enabling personalized content delivery tailored to individual preferences and needs (Albinali & Hamdan, 2020). By intelligently assessing user behavior, demographics, and interactions, AI-driven marketing practices ensure that customers are presented with offers and advertisements that resonate with their interests and aspirations.

The proliferation of information technologies has led to an exponential increase in the volume and variety of data generated through online interactions. This variety of data gives marketers unprecedented insights into consumer behavior, enabling them to craft targeted campaigns that drive engagement and conversions (Kupec, Jakubíkova, & Kupec, 2021). Through AI-powered analytics, marketers can discern meaningful patterns and trends within this vast data, informing strategic decisions and refining digital marketing initiatives for optimal impact. Additionally, integrating AI into digital marketing extends beyond personalized advertising, encompassing a range of innovative applications. From predictive analytics and sentiment analysis to chatbots and virtual assistants, AI technologies empower marketers to deliver seamless, responsive experiences across the whole customer journey. By automating routine tasks, facilitating real-time communication, and

anticipating customer needs, AI enhances efficiency, fosters brand loyalty, and drives business growth in today's competitive marketplace (Ahmed & Ganapathy, 2021).

To our knowledge, integrating AI applications in digital marketing practices remains an underexploited area. In this context, this research paper aims to introduce AI and its role in marketing to explore specific uses of AI in several marketing practices, as it aspires to identify and discuss meaningful applications of AI for digital marketing. The remainder of this paper is structured as follows: in the first section, we discuss relevant literature review concerning AI and its tools. A presentation of the research methodology and data analysis method will follow this. Next, we discuss the findings, and finally, suggestions and conclusions will be drawn.

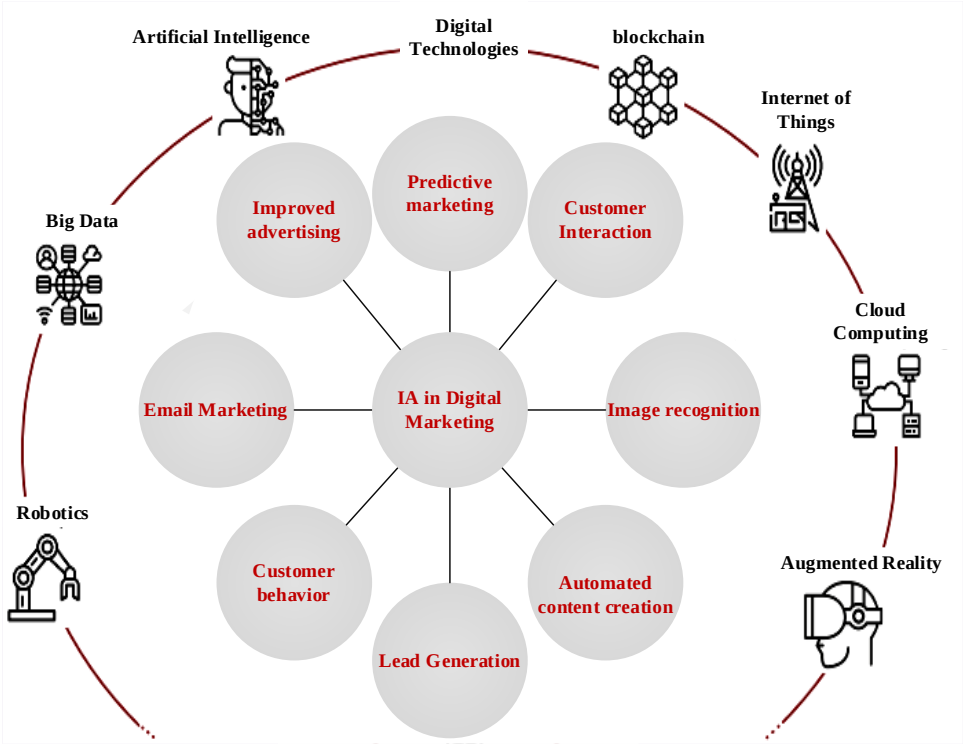
Literature Review

Artificial intelligence applied in digital marketing can analyze large amounts of online data to provide precise and essential information for businesses. It can determine which price will generate the most conversions, when is the best time to post, which subject will attract the most attention, etc. (van Esch & Stewart Black, 2021). Digital marketing professionals constantly stay informed of all trend developments. AI applications simplify tasks, allowing for more creativity and exploring unconventional avenues. They also add value for customers who benefit from them (Shovo, 2021). AI applications simplify the creation of customer profiles and the understanding of the customer journey process. They enable brands, among other things, to quickly and easily provide valuable personalized content for different customer profiles at each stage of the digital marketing funnel. Based on historical data, AI applications in digital marketing can determine which content will most likely attract customers to the site. Through these analyses, marketers can plan their future campaigns and implement practices encouraging customers to visit the site and, most importantly, stay (Marinchak, Forrest, & Hoanca, 2018).

The ability to use AI to predict the success of digital marketing initiatives and better tailor the user experience is a major technological trend that will persist for many years. In this perspective, AI is causing changes in all aspects of the digital marketing sphere. This will affect everything from how marketers conduct their campaigns to how they are calculated and managed accordingly. Now and in the future, sophisticated digital marketing will be guided by artificial intelligence. Following this logic, many industry leaders have been encouraged to transition to a more advanced and efficient field where AI has established itself as the most appropriate tool. Companies that integrate AI have more opportunities to differentiate themselves from their competitors. AI applications in the digital marketing sphere are illustrated in the following figure.

Figure N°1

AI Applications in Digital Marketing Practices



Source: Performed by authors based on the literature review

Various AI applications are exploited to perform different functions aimed at solving today's digital marketing problems, using several AI tools impacting marketing practices. Below, we present these digital marketing practices.

a. Marketing Prediction

Thanks to social media's ability to gather personal information about potential consumers, marketers are better prepared to interact with them meaningfully and instantly. New data is continuously provided and prepared for AI evaluation with every click, tracking the consumer's online presence. This abundance of information is critical for generating the most relevant and actionable statistics for marketers. By exploiting these insights, marketers can improve their strategies, create more personalized and effective campaigns, and enhance the whole customer engagement. This continuous data flow allows for real-time updates and optimizations, ensuring that marketing efforts remain highly targeted and efficient (Shovo, 2021).

b. Customer Interaction

In a connected environment, AI applications increasingly communicate with consumers directly and intensively. Marketers show growing interest in these interaction initiatives as social media usage shifts towards private messaging platforms like WhatsApp and Facebook Messenger. This represents a significant interaction opportunity that should not be overlooked. While most experienced marketers view chatbots primarily as tools for providing personalized customer service at scale, they are not consistently recognized as valid marketing tools. However, "visit bots" can also guide customers throughout the customer journey, potentially triggering a sale. By applying AI for direct communication, marketers can create more personalized and engaging interactions, ultimately driving higher customer satisfaction and conversion rates (Marinchak, Forrest, & Hoanca, 2018).

c. Advertising Improvement

AI refined Advertisements and their delivery by optimizing advertising campaigns, enhancing ad relevance, and automating complex processes. AI plays a vital role in targeting ads based on user characteristics and behaviors, thereby increasing their relevance on an individualized level. Furthermore, AI algorithms continuously analyze real-time advertising campaign performance, automatically adjusting parameters to achieve optimal results. To further enhance advertising effectiveness, AI enables the development of chatbots and virtual assistants to respond to customer inquiries and provide round-the-clock support. By using AI technologies, marketers can improve the efficiency and effectiveness of their advertising efforts, ultimately driving higher engagement and conversion rates (Kupec, Jakubíkova, & Kupec, 2021).

d. Email Marketing

With AI, email marketing has become even more effective for marketers and their clients. The goal of every digital marketer is to achieve large-scale personalization, and AI makes this entirely possible. Based on previous experiences with the brand, AI can generate personalized emails for each company's customers. Content consumption, wish list items, and visited sites can all be considered when personalizing the experience. For example, AI can adapt email content based on each client's habits. If someone regularly opens links to the company's products in emails, AI can include more details related to those products, while someone who never does will receive different content (Micu, Capatina, & Micu, 2018).

e. Increasingly Customer Behavior-Oriented Marketing

Much of the AI application involves integrating data from multiple and varied sources. Customers who access a system or platform leave fragmented personal data traces that remain recorded. This data is collected regardless of how they shop, post, or browse. AI applications now process large amounts of data and learn about customers' online activities and digital identities. Highly scrutinized customer behavior patterns are analyzed and stored by platforms to develop robotic structures and customer profiles that focus on specific markets. Eventually, machines can perform more profound analyses of customer profiles and behaviors, allowing them to design content more aligned with customers observed online preferences (Albinali & Hamdan, 2020).

f. Lead generation

With its access to data and assigned tools, AI conducts exhaustive analyses of vast datasets to identify optimal solutions for consumers, clients, and collaborators. Furthermore, AI can predict or evaluate generated leads, allowing companies to streamline their resources, automate processes, enhance efficiency, and more effectively target high-quality prospects. This AI-driven lead generation approach contributes to higher conversion rates and improved profitability of marketing activities. Consequently, digital marketing managers can allocate more time to strategic endeavors such as defining marketing goals, analyzing target markets, and devising innovative strategies to stay ahead in the competitive landscape (Verma, Sharma, & Deb, 2021)

g. Image Recognition

In AI, image recognition is among the most exciting and likely significant advancements. Image recognition, without needing descriptions, assists digital marketing managers in identifying images on social media platforms (Wang, Luo, & Huang, 2020). For example, search engines and e-commerce platforms allow users to search for products using images instead of keywords. AI analyzes the image submitted by the user and identifies similar products, making search and purchase more accessible and improving the customer experience. Additionally, advertisers use image recognition to target ads based on visual elements present in the images users share or view. For instance, an image of a user wearing sneakers can trigger ads for sports shoes.

h. Automated Content Creation

Several companies use AI to automate the creation of various content types. This technological evolution has made content creation faster and easier. AI generates textual and visual content, personalizes recommendations, summarizes information, facilitates localization and translation of content, adapts it to the linguistic and cultural specifics of the target region, optimizes SEO by suggesting improvements and relevant keywords, and provides automated responses via chatbots and virtual assistants, offering real-time customer support (Ahmed & Ganapathy, 2021).

In the era of big data, most of the data exploited in the automated content creation process are determined by five fundamental characteristics. First, the large volume of data comes from various sources, such as social media and Internet of Things platforms, and different groups of people, including users and potential customers. Second, these data are generated in real-time at high speed. Third, the diversity of data is manifested in different forms, such as text, images, audio, sensor results, etc., as explained later in this section. Fourth, the accuracy and reliability of data are crucial, requiring the processing of unstructured data and the elimination of irrelevant data. Finally, the high value of data allows for improved customer relationship management (Geru, Capatina, & Micu, 2018).

Regarding the types and diversity of data, AI applications generally allow the collection of two categories of data. First, structured data follow a predefined standardized schema, such as social media ratings, customer demographic information, and transaction data. Second, unstructured data do not follow a predefined standardized schema, such as customer experiences and reviews shared in blogs and feedback collected from online forms.

Regarding media types, individuals perceive their environment through their senses (such as sight, hearing, smell, taste, and touch). In contrast, AI applications utilize input devices and sensors to gather structured and unstructured data from various media sources. This diversity is exemplified by concrete examples and real-life cases, as outlined in Table 1. Furthermore, despite its intricacies, delving deeper into video usage as an input medium offers valuable insights (Rekha, Abdulla, & Asharaf, 2016).

Table N°1

Types of media used by AI in digital marketing

Media Type	Description	Examples of Media Usage
Text	Recognize handwritten or typed text, then provide assistance and recommendations.	• IBM Watson and Alpine AI provide virtual text assistance.
Image	Recognize images, then provide assistance or recommendations.	• KFC recognizes faces to approve payments. • Shiseido and Estée Lauder recognize facial skin conditions and suggest cosmetic products. • Fashion AI recognizes body images and suggests clothing.
Audio	Recognize voice, then provide assistance or recommendations.	• Google Assistant provides virtual audio assistance. • Amazon Alexa handles voice purchase requests.
Sensor Results	Collect real-time data gathered by sensors or sensory devices and use them as guides to provide assistance and recommendations.	• StretchSense uses sensors to take customer measurements when ordering custom clothing.

Source: Performed by authors based on the literature review

Research Methodology

This section will outline the research methodology mobilized to understand how companies can enhance their digital marketing strategies by adopting AI applications. To accomplish this, we

analyzed two illustrative case studies. The first case study delves into the operations of the Chinese e-commerce platform SHEIN. In contrast, the second examines the practices of VMS Industry, an Algerian company specializing in motorcycle production.

The selection of these two cases was deliberate and guided by a specific purpose. By examining SHEIN as a model, we aim to derive insights from a company that has effectively implemented AI within its digital marketing strategies. These insights will then be extrapolated to VMS Industry, which is in the nascent stages of integrating AI applications. This comparative approach is designed to identify optimal practices the VMS Industry could adopt to enhance its AI initiatives within digital marketing.

We employed a qualitative research methodology using an interview guide to conduct this dual case study. Consistency was maintained by using the same interview guide for both companies. The WeChat social network application facilitated interviews with the digital marketing manager of SHEIN, given the company's location in China. Similarly, interviews with the marketing manager of VMS Industry were conducted at the company's headquarters in Bejaia.

The interview questions were structured around three primary axes. The first axis explored the company's adoption of AI in marketing, the second axis focused on the performance metrics utilized to evaluate the impact of AI adoption, and the final axis examined the contributions of AI applications to digital marketing practices.

Results & Discussion

SHEIN, a significant e-commerce enterprise, uses AI applications to boost its digital marketing, enhance customer experience, and optimize advertising campaigns. Since January 2023, SHEIN has adopted Hugging Face to improve the efficiency of its digital marketing operations. Hugging Face represents a company specializing in natural language processing (NLP) and is renowned for its pre-trained language models and open-source platform. Before integrating these technologies, SHEIN ensured compliance with privacy and data regulations and addressed ethical concerns related to AI usage in marketing. Additionally, close collaboration with the IT team and adequate staff training were essential to ensure the success of these initiatives. The adoption roadmap of Hugging Face applications can be comprehensively outlined.

a. Sentiment Analysis for Social Media

By exploiting the power of NLP models developed by Hugging Face, SHEIN aims to conduct in-depth sentiment analysis on mentions of its brand across various social media platforms. This strategic initiative goes beyond surface-level analysis to uncover customers' nuanced perceptions and emotions in their interactions with the brand.

The primary goal of this approach is to gain a comprehensive understanding of customer sentiment across different social media channels, including both positive and negative feedback. By analyzing the tone, context, and language used in customer mentions, SHEIN can identify patterns, trends, and insights that provide valuable guidance for refining its digital marketing strategies.

One key aspect of this strategy is the integration of sentiment analysis insights into SHEIN's digital marketing framework. By incorporating these visions into campaign planning, content creation, and messaging, SHEIN can adapt its marketing efforts to better resonate with customer sentiments. For example, suppose sentiment analysis reveals a widespread positive sentiment towards a particular product line. In that case, SHEIN can leverage this insight to amplify related digital marketing campaigns and promotions, thereby maximizing engagement and sales opportunities.

b. Enhanced Chatbots

The integration of language models developed by Hugging Face into SHEIN's website chatbots represents a significant leap forward in enhancing customer interaction quality. This strategic move has revolutionized how SHEIN communicates with its clientele, resulting in conversations that feel more natural, intuitive, and contextually aligned with customer inquiries and needs.

By incorporating these advanced language models, SHEIN has empowered its chatbots to provide tailored and relevant responses to customer queries, issues, and feedback. This personalized approach addresses customer concerns more effectively and creates a more engaging and satisfying experience for users navigating the website. As a result, customers feel more understood and valued by the brand, leading to stronger emotional connections and heightened loyalty over time.

Additionally, this initiative has streamlined the user experience by facilitating more efficient interactions between customers and the SHEIN platform. With chatbots equipped to understand and respond to inquiries with greater accuracy and nuance, customers can find the information they need more quickly and effortlessly, enhancing their overall satisfaction and enjoyment of the shopping experience.

Besides, integrating Hugging Face's language models into SHEIN's chatbots has had a ripple effect across the brand's customer engagement efforts. SHEIN can foster deeper relationships with its customers by providing personalized assistance and guidance at every touchpoint, building trust and loyalty. Customers appreciate the brand's commitment to understanding their needs and preferences, leading to increased satisfaction, repeat purchases, and positive word-of-mouth recommendations.

c. Personalization of Customer Experience

Incorporating models developed by Hugging Face to analyze customer preferences from their interactions and feedback stands as a cornerstone for SHEIN's digital marketing strategies. This forward-thinking approach captures and deciphers the intricacies of customer preferences, enabling the brand to offer highly personalized product recommendations and tailored special offers. By gaining deep insights into each customer's unique needs and desires, SHEIN can curate experiences that resonate personally, fostering a sense of connection and loyalty among its customer base.

Furthermore, including these insights allows SHEIN to go beyond superficial transactional relationships and cultivate meaningful customer engagements. By understanding their preferences, SHEIN can anticipate their needs, offer relevant suggestions, and provide solutions that align with their own tastes and preferences. This personalized approach enhances customer satisfaction and strengthens brand loyalty, as customers feel valued and understood by the brand.

Moreover, implementing Hugging Face models enables SHEIN to stay ahead of evolving trends and customer preferences in the dynamic e-commerce landscape. By continuously analyzing interactions and feedback, SHEIN can quickly adapt its offerings and digital marketing strategies, ensuring relevance and resonance with its target audience. This agility in responding to customer needs enhances the overall shopping experience and positions SHEIN as a leader in delivering personalized and customer-centric solutions in the digital marketplace.

d. Fashion Trends and Feedback Analysis

SHEIN strategically positions itself as a frontrunner in the fashion industry by exploiting the power of NLP models to analyze emerging fashion trends across various platforms like social media, blogs, and reviews. This proactive approach enables the company to stay abreast of the latest trends and anticipate and capitalize on evolving consumer preferences. Through in-depth analysis, SHEIN gains valuable insights into emerging styles and popular aesthetics, allowing it to swiftly adapt its product offerings and marketing strategies to remain relevant and appealing to its target audience.

Furthermore, this trend analysis empowers SHEIN to anticipate market demands, solidifying its reputation as a trendsetter and fashion authority. By integrating NLP models into trend analysis, SHEIN maintains its leadership position in the fashion retail sector, demonstrating its agility and responsiveness to the ever-changing landscape of consumer preferences and market trends.

e. Optimization of Marketing Content

Employing text generation models from Hugging Face to optimize digital marketing content creation represents a strategic approach with significant potential. This strategy is precious when crafting various types of content, such as product descriptions, advertising copy, and promotional materials. By integrating these advanced models into the content creation process, companies can benefit from automated writing capabilities that streamline the production process while maintaining consistency and quality. Moreover, these models ensure that the language used remains authentic and spontaneous, resonating effectively with the target audience. As a result, marketing messages are impactful and closely aligned with the company's overall communication strategy, enhancing brand messaging and engagement. Overall, leveraging text generation models for content creation allows companies to produce compelling and relevant content at scale, driving customer interest and loyalty while optimizing marketing efforts for maximum effectiveness.

f. Brand Monitoring and Reputation Management

Integrating a brand monitoring system that employs text analysis capabilities from Hugging Face signifies a strategic move for SHEIN. This initiative enables the company to proactively identify and address potential brand reputation issues by scrutinizing textual data from diverse channels, including social media platforms, online reviews, and customer feedback. Leveraging the advanced text analysis features offered by Hugging Face empowers SHEIN to conduct comprehensive brand monitoring, allowing for the early detection of any emerging concerns or negative sentiment surrounding the brand. By staying vigilant and responsive to textual cues across various digital platforms, SHEIN can swiftly mitigate risks, safeguard its reputation, and maintain a positive brand image in the eyes of consumers. This proactive approach enhances brand trust and credibility and reinforces customer loyalty and advocacy in the long run.

g. Customer Segmentation

The use of semantic analysis for customer segmentation not only enhances the precision of targeted marketing efforts but also deepens customer engagement and loyalty. By delving into the nuanced preferences and behaviors of different segments, companies can tailor their messaging and offers to resonate more effectively with each group, increasing the likelihood of conversion and retention. This approach optimizes campaign performance and fosters a stronger emotional connection between the brand and its customers, leading to enhanced brand advocacy and long-term customer relationships. Moreover, by proactively addressing the evolving needs of the customer base through semantic analysis, companies can stay ahead of the curve and maintain a competitive edge in the market. Thus, semantic analysis is a multifaceted tool that drives both short-term results and long-term sustainability in digital marketing strategy.

h. Employee Training

Integrating Hugging Face's NLP solutions into SHEIN's digital marketing staff training process aims to empower employees with advanced skills and foster a culture of innovation and adaptability within the organization. By providing marketing staff with comprehensive training on NLP tools and techniques, SHEIN can cultivate a workforce well-equipped to navigate the complexities of the digital marketing landscape. Furthermore, this initiative facilitates continuous learning and professional development as employees gain valuable insights into customer preferences, market dynamics, and emerging trends. As a result, marketing initiatives become more targeted, personalized, and practical, driving customer engagement and loyalty. Additionally, incorporating NLP solutions encourages collaboration and cross-functional teamwork, as employees leverage data-driven insights to inform

decision-making and strategy development across various departments. Overall, this holistic approach to employee training and development enables SHEIN to stay ahead of the curve in a rapidly evolving market, positioning the company for long-term success and growth.

The application of AI in SHEIN's digital marketing landscape yields multifaceted enhancements. The company's discernible improvements in visibility and profitability are discerned through the dynamic evolution of key performance indicators (KPIs). These metrics serve as direct indicators of SHEIN's targeted business goals. SHEIN has identified ten primary KPIs instrumental in refining strategies and operational approaches in real-time, amplifying the advantages derived from Hugging Face solutions. These KPIs encompass diverse dimensions of performance evaluation, including personalization of the customer experience, optimization of advertising campaigns, efficient marketing content generation, precise customer segmentation, brand monitoring and reputation management, stock optimization, operational cost reduction, rapid response to market trends, enhancement of customer satisfaction, and continuous adaptation. This comprehensive framework underscores SHEIN's commitment to leveraging AI to drive growth, improve operational efficiency, and foster stronger customer relationships, demonstrating a strategic alignment with contemporary digital marketing imperatives.

1. **Personalization of the customer experience**

This indicator allows for better customization of the customer experience using Hugging Face recommendation models, which can lead to increased sales. Customers are more likely to purchase when they receive relevant product recommendations based on their preferences. The KPI used to evaluate this is the Custom Conversion Rate, measured by comparing the conversion rate of customers who received personalized recommendations with those who did not.

2. **Optimization of advertising campaigns**

This indicator allows for the use of predictive analysis models to optimize advertising campaigns, which can reduce unnecessary advertising costs while improving overall campaign performance. This can increase advertising Return on Investment (ROI). The KPI used to evaluate this is Advertising ROI, measured by calculating the ratio between profits generated by an advertising campaign and associated costs.

3. **Marketing content generation**

This indicator allows for the automated generation of appealing marketing content, enabling faster and more efficient production of advertising campaigns, thus reducing content creation costs while maintaining quality. The KPI used to evaluate this is Content Engagement, measured by the number of interactions (likes, shares, comments) on automatically generated content.

4. **Customer segmentation**

This indicator allows for more precise customer segmentation, leading to more targeted marketing strategies. This means marketing efforts are directed towards specific segments that are more likely to convert, thus improving the conversion rate. The KPI used to evaluate this is the Conversion Rate per Segment, measured by comparing conversion rates between different targeted customer segments.

5. **Brand Monitoring and Reputation Management**

This indicator allows for automated brand reputation monitoring, enabling SHEIN to quickly respond to negative comments, thus mitigating risks to brand reputation and preserving customer trust. The KPI used to evaluate this is the Online Reputation Index, measured using social media analytics tools to track brand mentions and assign a rating to online reputation.

6. Stock Optimization

This indicator allows for analysis of emerging trends in the fashion industry, which can help SHEIN adjust its stocks based on market preferences, thus reducing costs related to unsold items and improving inventory management. The KPI used to evaluate this is Stock Turnover, measured by calculating the number of times stock is replenished over a given period to avoid unsold items.

7. Operational Cost Reduction

This indicator allows for the automation of specific marketing tasks, such as content generation, data analysis, and customer interactions via enhanced chatbots, which can reduce operational costs related to personnel. The KPI used to evaluate this is Cost per Conversion, measured by calculating the average cost needed to generate a conversion (purchase, registration, etc.).

8. Rapid Response to Market Trends

This indicator allows for quick analysis of emerging trends, enabling SHEIN to react promptly by launching new products or adjusting marketing strategies to capitalize on new market opportunities. The KPI used to evaluate this is the Time to React to New Trends, measured by the time elapsed between identifying an emerging trend and adjusting marketing strategies accordingly.

9. Improvement in Customer Satisfaction

This indicator allows for personalization of the customer experience, quick response to feedback, and provision of relevant content, which can improve customer satisfaction, leading to increased loyalty and positive word-of-mouth. The KPI used to evaluate this is the Customer Satisfaction Rate (CSR), measured by gathering customer feedback through surveys to assess their satisfaction level.

10. Continuous Adaptation

This indicator allows for constant evaluation of Hugging Face models' performance and adjustment based on feedback, ensuring that SHEIN's AI-based initiatives remain aligned with ever-evolving business objectives. The KPI used to evaluate this is AI Model Performance, measured by evaluating the accuracy, consistency, and relevance of results produced by AI models over time. SHEIN's adoption of Hugging Face demonstrates how companies can leverage AI, especially in NLP, to improve profitability, operational efficiency, and customer relationships.

The lessons learned from SHEIN's experience transcend industry boundaries, underscoring the critical significance of adaptability, personalization, and proactive online reputation management in contemporary business landscapes. These principles resonate across diverse sectors, emphasizing the universal relevance of agile strategies that cater to evolving market dynamics and consumer preferences. Leveraging SHEIN's successful integration of AI-driven solutions, particularly in NLP, serves as a blueprint for organizations like the VMS Industry in Algeria seeking to optimize their digital marketing endeavors. VMS Industry can effectively develop profitability, operational efficiency, and customer engagement by embracing similar approaches tailored to its specific context. Thus, SHEIN's experience offers valuable insights that can guide VMS Industry and other firms in achieving sustained growth and competitive advantage in the digital age.

VMS Industry has made the strategic decision to selectively adopt AI, focusing on specific aspects of its operations. One of the priorities has been to enhance the customer experience by personalizing interactions. The company has been able to understand individual customer preferences through advanced AI systems, thereby offering more tailored services and recommendations. Another key area of AI application in VMS Industry is visual and textual content creation. Using automated text generation, image processing, and recommendation algorithms has significantly strengthened the creation of impactful marketing content. This has not only streamlined creative processes but has also led to a significant increase in operational efficiency.

VMS Industry expertly combines AI, search engine optimization (SEO), and its presence on social media platforms (Facebook, Instagram, and TikTok) to deliver highly personalized customer experiences. Through these three pillars, the company can enhance its online visibility and engage with customers relevantly. AI analyzes SEO data to understand trends and user behaviors, while social media provides a channel to interact directly with customers. This combined approach allows VMS Industry to recommend specific products, content and offers to each customer based on their preferences and current trends. For example, by using TikTok to promote new motorcycle models and leveraging AI to target users interested in these products, VMS Industry can create a personalized and engaging experience. Social media thus becomes a key interaction channel to strengthen customer loyalty by delivering content tailored to their interests.

VMS Industry makes strides in content creation, both visual and textual, by combining AI with design tools such as Microsoft Designer, Canva, or ChatGPT for text. This synergy enables the company to produce content quickly, covering its marketing strategy's visual and textual aspects. Advanced design tools and AI facilitate the work of VMS Industry's creative teams. These tools allow for the rapid creation of eye-catching visuals, image editing, and layout design while consistently and effectively generating written content. VMS Industry can maintain a comprehensive online presence through this integrated approach, providing a steady stream of relevant visual and textual content. This approach saves time and ensures content that aligns with audience expectations and interests, enhancing customer engagement and loyalty.

Despite these advancements, the marketing domain in VMS Industry remains in the phase of in-depth exploration of artificial intelligence. While aware of the revolutionary potential of this technology, the company acknowledges the need for deeper integration into its overall marketing strategy. Studies are underway to assess how AI can be more extensively leveraged to target audiences, personalize advertising campaigns, and improve market segmentation. However, the company recognizes that full integration of AI into its entire marketing strategy could offer even more significant potential, particularly in advanced automation, real-time data analysis, and AI-assisted decision-making. In this regard, the lessons learned from implementing AI in SHEIN's digital marketing can serve as a guide for VMS Industry. The resulting roadmap is outlined below.

The successful integration of AI into VMS Industry's marketing strategy should begin with a thorough assessment of its staff training needs. This preliminary assessment will identify specific areas where AI skills are required. To implement this initiative, VMS Industry may consider organizing in-house training sessions, mobilizing internal experts, or engaging external consultants specializing in AI. These training sessions could cover fundamental AI concepts, best practices in data analysis, and the use of specific tools. An essential aspect of this approach would be establishing a continuous training program that recognizes the dynamic nature of the AI field. Thus, VMS Industry would ensure that its staff remains constantly informed about the latest technological advancements in AI, enhancing their expertise for practical implementation in the company's marketing activities.

The integration of chatbots represents a strategic solution for optimizing customer communication within VMS Industry using AI. This approach includes personalizing chatbots based on customer preferences through data analysis, multichannel integration across various platforms, efficient handling of basic queries, continuous evolution based on data collected from customer interactions, and 24/7 availability to ensure instant assistance. This promising solution can be enhanced by exploring advanced tools such as Chat Compose, which leverages artificial intelligence to understand user intentions and significantly improve the customer experience.

Implementing a tracking and evaluation system for AI performance in VMS Industry's marketing strategy is essential and requires a methodical approach. Firstly, the company should define specific key performance indicators (KPIs) related to AI usage, such as increased conversion rates, reduced advertising costs, and improved customer engagement. Then, to ensure rigorous evaluation, VMS Industry can invest in advanced analytics tools that will enable the collection of relevant data,

generation of detailed reports, and provision of actionable insights. These tools will be crucial in accurately measuring AI performance facilitating continuous optimization of the company's marketing strategies.

In summary, the application of AI in digital marketing offers significant benefits to businesses across industries, including personalized user interactions, automation of repetitive tasks, predictive analysis for more precise segmentation, improved efficiency of customer interactions through chatbots, etc. These advantages lead to more effective marketing campaigns, a better understanding of user behaviors, and more efficient use of marketing resources.

Conclusion

Artificial intelligence will continue to grow in importance for organizations over the next decade, focusing on understanding how these organizations can effectively prepare for such disruption. In this regard, this communication aims to draw lessons from case study approaches to explore the contributions of AI applications to digital marketing. The study examined two case studies from SHEIN and VMS Industry.

This dual study offers significant insights for businesses seeking to improve their visibility, operational efficiency, and customer relations. The lessons learned from the successful application of AI at SHEIN, particularly with the use of Hugging Face, highlight the tangible benefits of this technology in critical areas such as personalized customer experience, optimization of advertising campaigns, content generation, and online reputation management.

Transferring this knowledge to VMS Industry, which is still in the phase of in-depth exploration of AI, holds promise. Based on SHEIN's successes, the proposed roadmap underscores the importance of a thorough assessment of staff training needs, the integration of personalized chatbots, and a tracking and evaluation system for AI performance. These elements, combined with a progressive and adaptive approach, will enable VMS Industry to maximize the benefits of AI in its digital marketing.

Ultimately, it is crucial to emphasize that AI should not be seen as a standalone solution but as a strategic complement to human skills. Personalization, operational efficiency, and customer satisfaction, as demonstrated in the case of SHEIN, are achievable goals for VMS Industry as it thoughtfully and progressively integrates AI into its overall marketing strategy.

However, it is essential to recognize the inherent limitations of this research. Firstly, the case studies of SHEIN and VMS Industry represent only a limited sample of companies, which may restrict the generalization of conclusions. The effect of size, sector, and organizational culture on AI adoption has not been fully explored. Additionally, while rich in detail, the methodology based on qualitative interviews may present potential biases related to the subjectivity of marketing managers' responses. A complementary approach using quantitative data could strengthen the robustness of the results. Furthermore, technologies are evolving rapidly, and although the study examined practices up to the date of its completion, new advancements may have occurred since then. Ongoing research and updating of best practices are necessary to stay abreast of recent developments.

Despite these limitations, this research provides a solid foundation for understanding how businesses can improve their marketing practices through AI and offers valuable guidance for companies looking to pursue this innovative path. Future research could delve deeper into these aspects, broaden the sample of companies studied, and further explore the ethical implications of AI use in digital marketing.

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