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Hospitality and Tourism Marketing in an Artificially Intelligent World

Yapay Zekalı Dünyada Turizm Pazarlaması

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HOSPITALITY AND TOURISM MARKETING IN AN ARTIFICIALLY INTELLIGENT WORLD

ABSTRACT

Peter Drucker's statement that *"the purpose of any organization is to satisfy the customer"* is a well-known quote in marketing literature. In the hospitality industry, tourist satisfaction has traditionally been measured by the degree of overall pleasure or happiness experienced by the tourist, resulting from meeting their demands, expectations, and needs. With the development of robots, artificial intelligence (AI), and service automation (RAISA), and their use in travel, tourism, and hospitality, the conversation around customer satisfaction has shifted. The introduction of RAISA has allowed businesses, particularly in the hotel and tourism industries, to streamline their operations, reduce costs, increase productivity, and improve the efficiency and reliability of their services. Self-service technologies and service automation have long been used in airports, hotels, and other establishments to improve customer experience, reduce wait times, and lower operational costs. As a result, an increasing number of hospitality companies are investing in technology to enhance the efficiency and dependability of their services to meet these demands. Many companies in the travel and hospitality industries are increasingly relying on automation to improve productivity and provide services with minimal human intervention. Hotels and travel companies have round-the-clock customer support available to assist guests with their needs. Self-service tools have become available, making it easy to make reservations and perform other tasks without the need to speak to a live representative. Moreover, the economy will increasingly include AI, and this will diminish the need for humans as service providers. The hospitality and tourism industry will benefit greatly from the use of marketing automation. This paper provides detailed information on how AI affects future marketing efforts.

Keywords: Artificial Intelligence, Marketing Efforts, Hospitality, and Tourism Companies.

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YAPAY ZEKALI DÜNYADA TURİZM PAZARLAMASI

ÖZ

Peter Drucker'ın "her organizasyonun amacının müşteriyi memnun etmek olduğu" ifadesi, pazarlama literatüründe önemini korumaktadır. Konaklama sektöründe, turist memnuniyeti geleneksel olarak turistin yaşadığı genel tatmin veya mutluluk derecesiyle ölçülmüştür. Bu durum da turistlerin taleplerini, beklenti-

lerini ve ihtiyaçlarını karşılama sonucunda ortaya çıkmaktadır. Robotlar, yapay zeka ve hizmet otomasyonunun (RAISA) gelişimi ve seyahat, turizm ve konaklama sektörlerinde kullanılmaya başlanmasıyla, müşteri memnuniyetiyle ilgili geleneksel düşünceler değişiklik göstermiştir. RAISA'nın tanıtımı, özellikle otel ve turizm sektörlerinde, işletmelerin operasyonlarını düzenlemelerine, maliyetleri azaltmalarına, verimliliği artırmalarına, hizmetlerinin etkinliğini ve güvenilirliğini iyileştirmelerine olanak tanımıştır. Havaalanlarında, otellerde ve diğer kuruluşlarda uzun süredir müşteri deneyimini geliştirmek, bekleme sürelerini azaltmak ve operasyonel maliyetleri düşürmek için hizmet teknolojileri ve hizmet otomasyonu kullanılmaktadır. Bu nedenle, birçok konaklama şirketi, bu talepleri karşılamak için hizmetlerinin etkinliğini ve güvenilirliğini artırmak amacıyla teknolojiye yatırım yapmaktadır. Seyahat ve konaklama sektöründeki birçok şirket, üretkenliği artırmak ve insan müdahalesini minimumda tutarak hizmet sunmak için otomasyona daha fazla güvenmektedir. Oteller ve seyahat şirketleri, misafirlerin ihtiyaçlarına yardımcı olmak için 7/24 müşteri desteği sunmaktadır. Öz hizmet araçları kullanıma sunulmuş, rezervasyon yapmak ve diğer görevleri gerçek bir temsilciye başvurmadan gerçekleştirmek kolay hale gelmiştir. Dahası, ekonomi giderek daha fazla yapay zeka içerecek ve bu da insanları hizmet sağlayıcı olarak ihtiyaç azaltacaktır. Konaklama ve turizm endüstrisi, pazarlama otomasyonunun kullanımından büyük ölçüde faydalanacaktır. Bu makalenin amacı, yapay zekanın gelecekteki pazarlama çabalarını nasıl etkilediği konusunda detaylı bir içerik ve bilgi sağlamaktır.

Anahtar Kelimeler: Yapay Zeka, Pazarlama, Otelcilik, Turizm İşletmeleri.

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INTRODUCTION

Technologies from RAISA will alter how people view travel and hospitality services. Future travel, tourism, and hospitality businesses will be split into two primary broad groups: high-tech and high-touch businesses, with a variety of gray areas in between. While high-touch tourism businesses would rather hire people, high-tech ones would mostly rely on RAISA (Ivanov, 2019). By the year 2068, robots will have taken over many of the dangerous, dirty, and undesirable jobs currently performed by humans. It will enable businesses to develop successful campaigns through a variety of channels, employ sophisticated personalization of marketing collateral, and obtain thorough insights on customer characteristics and behaviors. Accurate information about the guests enables the sending of tailored and personalized communications at the most suitable moment (Pasternak, 2017).

Apart from the conventional industrial automation and sophisticated robots, we are witnessing the emergence of more capable autonomous systems across va-

rious settings, such as autonomous vehicles on the road and automated checkout systems in grocery stores. A significant portion of this advancement can be attributed to enhancements in system components, including mechanics, sensors, and software. Notably, AI has made substantial progress in recent times, thanks to increasingly sophisticated machine-learning algorithms that leverage the significant growth in computing power and the exponential increase in available data for training these algorithms. These technologies are already delivering benefits across a range of products and services, and companies from various industries are employing them in diverse processes. They use these technologies to customize product recommendations, detect irregularities in production, spot fraudulent transactions, and more. The most recent advancements in AI, which encompass methods for tackling classification, estimation, and clustering challenges, hold the potential to bring even greater value (McKinsey Global Institute, 2018). Companies are increasingly embracing automation technologies to enhance efficiency, accelerate processes, reduce production or service delivery time, maintain consistent product quality, cut expenses, boost revenue, enhance competitiveness, and optimize economic efficiency. Automation technologies encompass a broad range of tools and systems employed to create goods and offer services in lieu of human workers (Ivanov, 2021). Automated economy has the potential to result in a "work-free society" enabling individuals to unleash their creative abilities, revive artistic and artisanal pursuits, attend to family matters, engage in volunteer work for the betterment of the community, and more time to travel (Constitutional Rights Foundation, 2018).

Product: Automated Company

Automated company streamlines all business processes, or their individual components, whenever feasible and practical, with a clear objective in mind. Automation can be applied to a wide range of processes within a company, including manufacturing, logistics, customer service, data analysis, and administrative tasks. Automated companies often leverage technologies such as robotics, artificial intelligence, machine learning, and software automation tools to achieve their goals. Examples of automated companies include advanced manufacturing facilities with robotic assembly lines, e-commerce businesses employing automated inventory management and order fulfillment systems, and financial institutions using AI-powered algorithms for trading and risk assessment. The degree of automation in a company can vary widely, from partial automation of specific tasks to full automation of entire processes, depending on the organization's needs and industry. There are four key foundations of a fully automated company (Bots & People, 2022):

1. It deploys automated robots to handle back-office tasks, allowing all personnel to concentrate on their core responsibilities.

2. Employees utilize bots as aides, enhancing their overall productivity and enabling them to dedicate more time to valuable tasks instead of expending it on repetitive duties.

3. The democratization of new automation tools and applications makes their development more efficient, with proficient users having the capability to create them effectively.

4. Leveraging AI in every facet of operations opens up the possibility of automating even more processes.

Cognitive automation may encompass autonomous digital workers capable of comprehending human speech, interpreting handwriting, analyzing images, recognizing data patterns, and generating forecasts based on data-driven insights. An automated travel system will compute all costs, discounts, and exclusive deals and facilitate the generation and processing of invoices with minimal human involvement. After the tourist confirms their booking, the software will autonomously generate and dispatch an invoice and voucher to them. Accelerating the quoting process while providing attractive personalized travel plans will enhance conversion rates. Specialized travel software will streamline the simultaneous distribution of multiple product proposals and the generation of coupon codes, early booking incentives, as well as special and last-minute deals. Booking engines can be configured to display search results in a preferred manner through the implementation of search rules. These rules determine which products from specific suppliers are displayed to particular users at specific prices. AI can play a role in forecasting which individuals might be willing to pay more in particular situations. Additionally, self-learning machine learning tools can forecast fluctuations, such as changes in hotel pricing and room availability, by analyzing historical data, seasonal patterns, current demand, competition, weather forecasts, airline promotions, and various other variables (Baidin, 2023; Kholin & Slesar, 2023; Tong, Yan, & Manta, 2022).

The travelers need more control and flexibility over their journeys and costs to have a better travel experience. Online and mobile booking, best-priced access to all travel-related items, personalized offers, and other automation-powered features encourages autonomy and control. Travel ERP (enterprise resource planning) systems may streamline any process, from reservations to annual accounting. High-volume, repetitive tasks can be completed by machines more rapidly and consistently than by humans. Machine-assisted searching, data collection, and interpretation reduce errors and inaccuracies while saving workers' time on early tasks. When invoices are generated and handled automatically, errors will be decreased. Hotels can create a customized marketing campaign using AI to watch and analyze booking habits, seasonal demand, and other guest behaviors to appeal to the target segments (Saul, 2022).

Price: Automated Pricing

Automated pricing is based on a variety of factors, including the product's specificity, variations in demand, quantity, quality over time, cyclicity, the environment, etc. The goal of automated pricing is to raise the average price and increase revenue. Dynamic pricing strategies are given particular consideration. Utilization of cutting-edge tools and programs to provide a focused and highly efficient distribution that functionally covers all routes of distribution Real-time advertising and sales promotion that is very flexible and distinct from conventional forms. Consumer participation and trust in the campaigns' methods and guiding principles will increase as a result of the automation of marketing procedures related to sales promotion. Automation of customer relationship management operations would improve the accuracy, credibility, and usability of data about businesses and their customers (Tonkova, 2016). Dynamic pricing which can be defined as *"the study of determining optimal selling prices of products and services, in a setting where prices can easily and frequently be adjusted"* (den Boer, 2015, p. 2) g is a strategic revenue management tool to maximize profit by continuously adjusting prices in response to fluctuations in demand and to manipulate demand, attract specific market segments, drive bookings and build market share (Gibbs et al, 2018). It is also used for personalized pricing strategies. Hotels, airlines, and sharing economy companies have been using dynamic pricing for a while (Abrate, Nicolau, & Viglia, 2019). With the help of AI and ML, the hospitality companies will be able to monitor the demand forecasts to predict future demand, price elasticity to identify high variability in price, to increase their prices and profits when the competitors' stocks are running low, and to anticipate unintended consequences. There will be no need for historical data of a new product, because AI and ML will use long-tail model algorithms to maintain dynamic pricing optimization (Gupta & Pathak, 2014). Dynamic pricing will be used by the restaurants and cafes to increase the revenue. The prices of food and drinks will change as the day progresses. For example, the diner prepares affordable pre-made sandwiches in advance during the early part of the day, along with pricier sandwiches that are custom-made to order, requiring additional time and staff resources. Dynamic pricing will also be used in the parking lots, toll roads, and transportation to reduce congestion, keep the destinations solvent and efficient (Marin, 2019; Shartsis, 2019; Ruesch, 2022).

PLACE

AI-to-AI Marketing

In the realm of marketing, AI will advance to the extent where it can deliver exceptionally tailored experiences. AI algorithms will possess real-time insights into individual preferences, behaviors, and emotions, enabling marketers to finely

customize messages and products with an unprecedented level of precision. The creation of content will be greatly enhanced by AI, encompassing the generation of high-quality, contextually relevant content across various mediums, including written articles, videos, and advertisements. Collaboration between humans and AI will become the standard in content production. Emotion-recognition AI will assume a central role in marketing endeavors, as AI systems will evaluate facial expressions, vocal tones, and even biometric data to gauge customers' emotional responses. This capability will be instrumental in crafting emotionally resonant marketing campaigns. AI tools will assist marketers in their creative processes, offering suggestions for innovative ideas, designs, and strategies. AI-driven creativity will act as a catalyst for crafting novel and captivating marketing campaigns. AI will reshape the landscape of market research by rapidly analyzing extensive datasets and delivering actionable insights. This will empower companies to remain at the forefront of trends and respond swiftly to shifting consumer behaviors. AI-powered chatbots and virtual assistants will provide highly personalized and efficient customer support, adeptly handling complex inquiries and elevating overall customer satisfaction. Advanced AI models will possess predictive capabilities, aiding in tasks like demand forecasting, inventory management, and optimizing pricing strategies. This will lead to more streamlined supply chain operations and pricing strategies. AI will take the reins in managing advertising campaigns, autonomously fine-tuning elements such as ad spend, targeting, and creative content to maximize return on investment. As AI assumes a pivotal role in marketing, there will be an amplified focus on ethical considerations and regulations governing AI-driven marketing practices. Stringent guidelines and oversight may be introduced to ensure fairness, transparency, and privacy. Virtual influencers, animated by AI, will emerge as a prominent facet of marketing, engaging with audiences and promoting products in distinctive ways. In the event that quantum computing becomes viable and accessible, it has the potential to revolutionize AI capabilities. Tasks currently beyond the reach of classical computers, such as highly advanced simulations and optimization problems, could become routine for AI systems. AI will seamlessly integrate with augmented and virtual reality experiences, delivering users highly interactive and customized content, unlocking new dimensions for immersive marketing. As AI becomes more deeply ingrained in marketing, there may be heightened scrutiny of AI-driven decision-making and accountability. Regulations may be enacted to ensure fairness and prevent discriminatory practices in the field (Ameen et al., 2022; Basha, 2023; Chen et al, 2022; Liu-Thompkins, Okazaki, & Li, 2022; Mariani, Perez-Vega, & Wirtz, 2021; Peltier, Dahl, & Schibrowsky, 2023). Ivanov (2022) suggests that AI-to-AI marketing, which involves artificial autonomous agents (Aas) selling to other artificial autonomous agents, may lead to more rational decision-making and less emotional influence compared to human-to-human marketing. Although humans will still be the primary users of most products, the involvement of autonomous agents in recommending or directly making purchase

decisions on behalf of humans could require companies to restructure their marketing strategies to focus on the (AA) customers.

Metaverse Marketing

The metaverse represents a virtual environment where individuals can engage socially, employing digital avatars to create value and jointly craft experiences. Through the utilization of mixed reality (MR) technology, the metaverse integrates various technologies using ambient intelligence, bridging the gap between the digital and physical realms. This allows users to merge resources and complete experiences that span both dimensions. The metaverse offers immersive three-dimensional (3D) encounters and places a significant emphasis on social interaction, ultimately paving the way for a harmonious fusion of digital and real-life living (Buhalis, Lin, & Leung, 2023; Kim, 2021). As the Metaverse is still in its early stages, business models related to marketing are undergoing a trial period. Common marketing practices within the Metaverse Ie the creation of sales and promotional packages (Seok, 2021). In the realm of 3D digital worlds, technology has evolved to offer live coverage of the Metaverse environment. Metaverse platforms are now used to capture live events and broadcast them on the digital networks within this virtual space. Unlike conventional online shopping experiences, marketers have the capability to provide an immersive encounter where customers can truly connect with products in real time. The Metaverse holds significant importance for marketers because it allows them to engage with customers in a unique and creative manner, capturing their attention in a real-time, immersive environment. It presents an opportunity to expand brand awareness into new dimensions of traditional marketing (Khatri, 2022).

The immersive capabilities of the Metaverse enable brands to deliver extraordinary customer experiences that greatly surpass traditional methods. This extends not only to promoting products or services but also includes providing experiential marketing encounters that can incorporate virtual reality, augmented reality, and digital components. The Metaverse facilitates a higher degree of personalization. Utilizing data-driven insights, marketers have the capacity to craft tailored experiences that align with the preferences and behaviors of individual users. This not only enhances the user experience but also significantly boosts the effectiveness of targeted marketing endeavors. The Metaverse transcends geographical and physical boundaries, allowing brands to engage with a global audience simultaneously. This elimination of geographical barriers opens up the potential for marketing campaigns to achieve a broader impact and reach audiences that would be inaccessible in a traditional marketing landscape. Moreover, the Metaverse fosters a new level of community engagement, enabling consumers to interact not only with brands but also with one another. This creates opportunities for crowd-sourced innovation, organic brand advocacy, and the development of brand-related commu-

nities. The interactivity offered by the Metaverse transforms marketing into a conversational process rather than a one-way flow of information. The digital nature of the Metaverse enables real-time adjustments to marketing tactics based on user interactions and feedback, ensuring that campaigns remain relevant and appealing to the target audience. Brands can establish a continuous presence in the digital realm, not confined to a physical store or an e-commerce website. They can create interactive virtual spaces, establishing an always-accessible digital environment. This omnipresence significantly enhances visibility, accessibility, and customer engagement. Metaverse marketing can incorporate gamification, incorporating game design elements into non-game contexts to increase user interaction and make brand experiences more engaging and captivating. Understanding these intricacies is essential for implementing effective Metaverse marketing strategies. As a continually evolving field, Metaverse marketing will continue to present businesses with both challenges and opportunities (Barrera & Shah, 2023; Hollansen, Kotler, & Opresnik, 2023; Ramadan, 2023; Dwivedi et al., 2022; Rathore, 2018).

Marketing in the Metaverse is likely to focus on creating highly immersive experiences. Brands may offer virtual showrooms where customers can interact with products in 3D, try them out virtually, and even simulate real-world scenarios to see how the products fit into their lives. This could significantly enhance the buying process. It will provide an abundance of data about users' behaviors, preferences, and interactions. Marketers will be able to use this data to deliver hyper-personalized content and recommendations, making marketing messages more relevant and effective. We might see the rise of virtual influencers or brand ambassadors within the Metaverse. These could be AI-powered characters or avatars that represent brands and interact with users in virtual spaces. Marketing campaigns in the Metaverse may rely heavily on interactive storytelling. Brands could create immersive narratives where users actively participate in the storyline, making them feel like co-creators of the brand's story. Social interactions and commerce will be tightly integrated in the Metaverse. Users will be able to shop, share, and recommend products seamlessly within virtual environments. This could lead to a new era of social commerce where peer recommendations play a central role. Marketing events and product launches might primarily take place in virtual spaces. These events can be accessible to a global audience without the need for physical travel, potentially increasing the reach and impact of such events. Gamification elements could be integrated into marketing strategies to engage users and incentivize participation. Rewards, challenges, and competitions within the Metaverse could drive brand engagement. With the extensive data collection and personalization in the Metaverse, concerns about data privacy and security will be paramount. Regulations and safeguards will likely evolve to protect user data. Traditional forms of advertising might diminish in importance, with digital advertising within the Metaverse taking precedence. Brands may lease virtual billboards or spaces for advertising within virtual environments. Companies will need to establish a strong

and consistent presence in the Metaverse, not only to reach customers but also to maintain brand integrity and trust in this digital space. AI will play a crucial role in managing and analyzing the vast amounts of data generated within the Metaverse. Automated systems may handle routine marketing tasks, allowing marketers to focus on strategy and creativity. Metaverse could become a vital platform for educating customers about products and services. Interactive tutorials and training programs could become a standard part of marketing strategies (Chaudhary, 2022; Clark, 2022; Hazan et al., 2022; Hetler, 2022).

The metaverse offers a potent platform for promoting goods and services through immersive interactions. It enables organizations to enhance their understanding of potential customers' desires, needs, and preferences. Consumers also have the opportunity to collaborate with businesses in crafting products, services, and experiences within the virtual realm. The Metaverse facilitates continuous, digital, and physical service provision, thereby enhancing the overall tourist experience. Destinations can recreate digital replicas of themselves and their attractions in the virtual world, supplementing information about their historical significance and appeal. The utilization of photorealistic rendering to construct immersive virtual experiences can pique the interest of prospective travelers, enticing them to explore real-world destinations and invest in tourism products and services. Immersive storytelling drives engagement and offers educational and entertaining content. In the metaverse, hotel companies can engage in meta-advertising and rent out digital billboards on their metaverse properties to other businesses for digital advertising placements. This enables hotel firms to promote their brands and boost brand recognition within the virtual space while also offering virtual tours and personalization. Furthermore, the metaverse can be harnessed for the development of facility and service prototypes. Creating virtual facilities, attractions, activities, and destinations is quicker, more cost-effective, and more adaptable than constructing physical counterparts (Buhalis, Leung, & Lin, 2023; Tsai, 2022).

PROMOTION

Marketing Automation and AI in Marketing

Marketing automation refers to the use of software and technologies to automate marketing tasks and workflows. The goal of marketing automation is to streamline tasks and workflows, allowing marketers to focus on higher-level strategic planning and analysis. Marketing automation involves the use of software and technological tools to automate repetitive tasks. The aim is to simplify and enhance marketing strategies by using a single platform to manage all aspects of campaigns, including managing advertisements, social media, email marketing, and mobile messaging (Heimbach, Kostyra, & Hinz, 2015; Sales Force, 2022). Marketing

automation encompasses the full range of marketing tactics and platforms, from telemarketing and email marketing to content marketing and initiatives that take advantage of social media. Systems for customer relationship management, sales lead management, and other analytical tools for tracking and evaluating marketing efforts are all included in marketing automation platforms (Swieczak, 2013). Even small firms can offer those sought personalized experiences with the aid of marketing automation. It enables them to target and respond to user behaviors without placing a burden on their sales or marketing employees. Greater customer happiness and deeper insights are the outcomes (Nicastro, 2022).

AI-powered tools can analyze customer data to identify patterns and trends, allowing marketers to better understand customer behavior and preferences. This can help to improve the accuracy of lead scoring and lead nurturing, as well as increase customer engagement and loyalty through more personalized messaging. In marketing automation, IoT can be used to collect data on customer behavior and preferences, allowing marketers to create more personalized and targeted marketing experiences. In contrast to today's world, the devices of the future will communicate in both directions, and the user experience will include robust, secure data processing, tailored differentiation, and adequate decision management (Zsarnoczky, 2018). More and more, scalable and intelligent algorithms are being used to support various marketing strategies (Ma & Sun, 2020). AI's role in marketing is expanding and this approach improves market forecasting and automation and enhances customer connection across all marketing channels (Vlacic et al., 2021).

AI in marketing involves a collaboration between humans and machines, and there are four ways to achieve this synergy. The first approach is where AI completely replaces humans, such as using real-time AI recommendations for advertising. The second approach, known as AI-human, involves AI monitoring, gathering, and analyzing data to provide valuable insights to humans for decision-making, such as improving customer relationships through smarter hiring practices. The third approach, human-AI, involves humans monitoring and gathering data to feed into AI systems for decision-making, such as monitoring an individual's health condition. The fourth approach, aggregated humans and AI, allows both humans and AI to contribute to different stages of the decision-making process. While the first approach replaces human intelligence with machine intelligence, the other three approaches combine human intelligence with the advanced capabilities of machines. These capabilities include high computational power and storage capacity, allowing them to handle vast amounts of accurate and comprehensive data. This collaboration between humans and machines leads to higher-quality decision-making and reasoning processes in marketing (Yau, Saad, & Chong, 2021).

There is a huge amount of structured and mostly unstructured data generated in the hospitality and tourism industry. Online reviews, online posts and photos,

geo-locations, location-based tags, mobile device data, online searches, online bookings and purchases are some examples for unstructured data. With the help of AI and ML, it is be possible to predict demand, forecast arrivals, understand tourist behavior, develop personalized service and intelligent recommendations, analyze the effectiveness of marketing strategies, and improve organizational performance (Leung, 2020; Lv, Shi, & Gursoy, 2021). Beyond basic AI implementations like chatbots, more advanced AI forms and applications are progressively reliant on big data to initiate learning processes that machines can leverage to understand past and current customer behaviors. This enables them to anticipate and discern future tourist requirements and interact effectively with travelers (Mariani, 2020). Advertisements are also customized based on the current geographical whereabouts of users and their upcoming destinations, as well as their online browsing interests. This data, in combination with predictive models driven by AI, enables companies to anticipate tourists' intentions and their proximity to purchasing a good or service (Palos-Sanchez, Saura, & Martin-Felicia, 2019).

Marketing in the Future in an Artificially Intelligent World

In the future, AI can support hospitality marketers in the process of segmentation, targeting, and positioning (STP), as well as in envisioning a company's strategic orientation. It can also help reduce the number of targeted tourists through the use of ML, causal forests, and data optimization techniques. Additionally, an AI-powered marketing analytics tool can evaluate how well a product meets tourists' needs and measure their satisfaction. Deep learning can tailor point-of-interest suggestions and encourage travel. Bayesian inference in a ML system can swiftly alter the price points to match the competitor's price in a frequently changing pricing scenario like an e-commerce platform (Verma et al., 2021). Predictions will aid the hospitality and tourism industry in formulating strategic business choices and enable individuals to decide on their travel plans. It will be possible to demonstrate efficient user interfaces for aviation weather information to reduce the time and complexity associated with procedures. The utilization of big data analytics and AI tools will create additional avenues for capturing consumer preferences and discerning market trends. Recommender systems are poised to become indispensable tools in marketing strategies and e-commerce, as they deliver a personalized experience to web-based applications, adding significant value (Samara, Magnisalis, & Peristeras, 2020).

Programmatic Advertisement

Programmatic advertising is an automated large-scale data-driven system that enables organizations to compete for the opportunity to display tailored online advertisements in the optimal location, to the most relevant audience, precisely when it is most opportune (Samuel et al., 2021). Programmatic advertising provides tou-

rism marketers with the capability to precisely target specific audiences according to demographics, interests, behaviors, and location. It enables real-time bidding on ad inventory, allowing marketers to adapt their bidding tactics in response to current market dynamics. Moreover, it facilitates the creation of tailored advertisements that can be adjusted based on the location, weather conditions, and other relevant data points. On the other hand, geofencing will serve as a valuable tool for tourism marketing by establishing a virtual perimeter around specific locations, such as tourist destinations. When individuals enter this designated area, they can be exposed to advertising materials related to local attractions and activities (Thumbvista, 2023).

AI Applications

Chatbots and other AI applications can automate the delivery of that information and guide potential customers to websites, online papers, or forms that can increase sales or determine a potential customer's interest in a company's products or services now or in the future. Additionally, tourist satisfaction and product surveys can be administered by marketing automation technologies, and the answer data can then be gathered, assessed, and segmented. With the use of marketing automation, companies can target certain tourist segments with promotions for, instance, flash sales in order to meet revenue targets for a given region or demographic. Predictive models can generate even more money with fewer tourists contacted every campaign thanks to AI and analytics tools, which are already capable of doing so or soon will be (Fluckinger, 2022). Campaigns will become more successful with marketing automation. Delivered on the appropriate channel and at the appropriate time is personalized content. Given the intricacy of modern multichannel digital marketing efforts, doing that manually would be nearly impossible. It will be feasible to launch more successful marketing efforts thanks to marketing automation. It also will get rid of annoying, tedious daily duties that feel like chores (Oracle, 2022).

AI Influencers

AI influencers are rising stars in marketing. AI influencers are virtual personas generated by computers, possessing a significant following and influence on social media. These AI-generated characters often resemble humans in both their physical attributes and personality traits. They have the ability to think and complete tasks in a manner similar to humans, thanks to the implementation of software and algorithms (Zhang & Wei, 2021). AI influencers have the potential to attract a significant number of followers and establish themselves as a reliable authority in one or multiple areas of interest (Alboqami, 2023). AI influencers, much like their human counterparts, possess the capability to resemble and behave like human

influencers. This suggests that AI influencers could potentially yield comparable effects to conventional celebrity endorsers (Sands et al., 2022). AI influencers possess the ability to reach a vast target audience, thereby enhancing the effectiveness of marketing campaigns. Companies can leverage AI to improve customer interactions, leading to increased customer loyalty. Additionally, utilizing AI influencers in marketing campaigns proves to be cost-effective, allowing companies to significantly reduce their budgets as compared to hiring human experts. Furthermore, AI influencers enable swift content creation due to their ability to operate 24/7. Ultimately, AI influencers exhibit great flexibility and versatility. They can convey content and messages through various mediums such as videos, images, and text, while also adapting and representing the brand with specificity and efficacy (Arnold, 2023). Based on the survey findings conducted by Influencer Marketing Hub, an impressive 59.8% of participants have actively incorporated AI influencers into their marketing campaigns, underscoring the tangible reality and influence of this groundbreaking strategy. This statistic serves as a significant endorsement of the effectiveness and practicality of AI influencers, solidifying their position as an integral component of the modern marketing arsenal (Geyser, 2023). AI influencers, on average, achieve three times higher engagement rates compared to human influencers with an equivalent follower count. Being artificial entities, they possess versatile capabilities, enabling them to generate a significantly larger volume of content and operate across diverse domains, unrestricted by a specific field of expertise. This versatility positions AI influencers to collaborate effectively with brands in the tourism and hospitality industry (Schaffler, 2021; Xie-Carson et al., 2023).

Digital Twins

There is a great potential of digital twins, which are virtual replicas of physical objects or processes (Degraeye et al., 2021; Jiang et al., 2021; Rahmanzadeh, Pishvaee, & Govindan, 2021; Parmar, Leiponen, & Thomas, 2020), to improve marketing effectiveness and personalization. Digital twins have the potential to revolutionize marketing in the future by providing deeper insights, enhancing personalization, and improving customer experiences. Digital twins can create virtual replicas or representations of individual customers or customer segments. These replicas can include demographic data, preferences, behaviors, and even physiological characteristics (Cooke, 2021; Guo & Lv, 2022). Marketers can leverage these digital twins to gain a deeper understanding of their customers, their needs, and their decision-making processes. This understanding enables marketers to create highly targeted and personalized marketing campaigns. Digital twins may also be used to simulate and test new products or services before they are launched in the market. Marketers can assess customer reactions, evaluate product performance, and gather feedback in a virtual environment. This allows for faster iterations and improvements, reducing the time and cost associated with physical prototypes. They can help marketers visualize and understand the customer journey from

start to finish. By simulating various touchpoints and interactions, marketers can identify pain points, bottlenecks, and areas for improvement in the customer experience. Digital twins enable marketers to optimize customer journeys, enhance customer satisfaction, and deliver seamless experiences across multiple channels and touchpoints (Borden & Herlt, 2022; Mulchany, 2019). Digital twins can automate marketing activities and improve customer experiences. Digital twins have a strong connection with the service-centered marketing model, as they provide intangible assets such as product information and the ability for customers to interact and connect through analyzed and connected data. This leads to ongoing relationships with customers, which can have a positive impact on their behavior and loyalty. By utilizing the IoT, advanced data analysis, and AI, digital twins can cater to customer demands and create a customer-driven service (Blaschke, Biewendt, & Böhnert, 2021).

Digital twins offer the tourism industry a pathway to enhanced sustainability through several avenues. They furnish comprehensive data regarding a destination, empowering tour operators, travel planners, and hospitality providers to make more informed decisions in their operations. This data can be instrumental in strategizing and executing sustainable tourism practices, encompassing reductions in energy and water usage, waste minimization, and the safeguarding of natural resources. Additionally, digital twins provide real-time insights into traveler behavior and preferences, benefiting tour operators and travel planners. This data aids in making decisions related to pricing, marketing, and operations, with the goal of creating a more streamlined and sustainable experience for travelers. Furthermore, digital twins serve as a means to simulate and assess the potential environmental impacts of various tourism activities. By simulating and analyzing these impacts in advance, the industry can proactively identify and address potential issues, thereby mitigating the adverse environmental consequences of tourism. This approach allows operators to optimize the positive economic, social, and cultural benefits of tourism while minimizing its negative ecological effects (Frackiewicz, 2023).

Autonomous Vehicle-Based Marketing

Should autonomous vehicles become prevalent, it prompts the inquiry of how individuals will occupy their time while in transit. It is anticipated that these vehicles will incorporate built-in screens and devices that advertisers can utilize, establishing a novel avenue for advertising. This innovative approach to advertising will encompass both auditory and visual promotions, introducing a fresh and efficient method for advertisers to connect with and target consumers (Outsourcetous, 2023). Restauranteurs and destination marketing organizations can leverage vehicle-based marketing for promotional activities.

Smart Destination Marketing

The level of intelligence in destinations hinges on the presence and sophistication of three key technological elements: the Internet of Things (IoT), Cloud Services, and end-user Internet services. IoT represents a network of physical objects, including interactions between people, people and devices, and devices with other devices, all facilitated through the Internet. This network includes devices like sensors and wearables. Smart destinations require Cloud Services that can handle the vast amount of data generated by IoT platforms, ensuring easy access to applications, software, and data. Additionally, end-user Internet services are another pivotal component in smart destinations. Connectivity plays a crucial role in the operation of smart tourism systems, encompassing all the applications and equipment needed to provide customers and organizational stakeholders with access to Cloud Computing Services and IoT platforms (Sorokina et al., 2022). In the future, real-time data will drive significant progress in achieving more personalized marketing in smart destinations and it will further enhance the growth of location-based marketing through innovative strategies like proximity marketing, instant marketing, and cross-selling tactics. Smart systems will amalgamate various technologies like recommender and context-aware systems, as well as deep learning, among others. These technologies will render smart systems indispensable tools for aiding decision-making and the creation of fresh tourist experiences. The implementation of intelligent solutions will stimulate innovation, entrepreneurial endeavors, and knowledge-centric approaches to tourism management. The evolution of these solutions encourages collaboration and information sharing among stakeholders, will foster a form of knowledge-driven management associated with the concepts of a learning destination or an innovation-driven learning economy (Gretzel, 2022; Ivars-Baidal et al., 2019).

Marketing in Virtual Worlds

Virtual worlds are enduring digital realms where individuals perceive the presence of others and engage with them interactively. Unlike virtual reality or virtual environments, which are broader terms, virtual worlds specifically refer to persistent online social spaces. These are digital environments that people perceive as continuously existing over time, often populated by large communities who collectively experience it as a world for social interaction. Consequently, virtual worlds differ from online gaming and Massively Multiplayer Online Role-Playing Games (MMORPGs) as they serve as third spaces, serving as online venues primarily for socializing (Schroeder, 2008). Even though, certain products may not be suitable for a 3D virtual environment because specific sensory characteristics, encompassing the five senses (vision, hearing, taste, smell, and touch), cannot be replicated digitally, companies can use different strategies (Lui, Piccoli, & Ives, 2007). Promo-

ting products in virtual worlds can involve reaching a target audience discreetly, avoiding the advertisement being recognized as such or linked to its context (Roy & Chattopadhyay, 2010). Stealth marketing takes place when prospective customers are unaware that they are the target of a marketing effort and it impacts its customers covertly, with them potentially remaining oblivious to the presence of any concealed marketing campaign targeting them (Mahmood Alkhafagi & Hussein Alsiede, 2022). Hospitality and tourism companies can promote their products in virtual worlds and games with the help of stealth marketing.

Privacy Issues

In the future, the issue of data harvesting, surveillance society, and personal privacy have become increasingly relevant. With the widespread use of digital technologies, including smartphones, social media, and smart home devices, individuals are generating vast amounts of personal data that can be collected, analyzed, and used by various organizations. Data harvesting refers to the process of collecting large amounts of personal data, often without the knowledge or consent of the individual. This data can include everything from browsing history and location data to social media posts and online purchases. Having access to increased and improved information can significantly enhance the effectiveness of marketing (Skiera, 2016). The concept of a surveillance society refers to a society where individuals are constantly monitored and tracked through various forms of surveillance, including CCTV cameras, facial recognition software, and online tracking. While some argue that this type of surveillance can help prevent crime and improve public safety, others argue that it infringes on individuals' rights to privacy and can lead to a culture of fear and mistrust. When we visit foreign countries, our identity, itinerary, and belongings are subject to scrutiny and surveillance, and this information is recorded. Passports have evolved to include computer chips that store personal information, and there are discussions of introducing biometric passports that function similarly to ID cards (Fuchs, 2010; Hintz, Dencik, & Wahl-Jorgensen, 2017; Wood & Ball, 2006). On the other hand, personal privacy is a fundamental human right. Individuals have the capacity to amass vast quantities of information in a variety of formats, including photos, videos, electronic files, and digital traces of internet activity. With the advent of easily accessible modern technologies and tools such as search engines, social networks, hacking software, and particularly data mining and machine learning tools, privacy has become a significant concern in the era of big data (Yu, 2016). Various laws and regulations, including the General Data Protection Regulation (GDPR) in the European Union and the California Consumer Privacy Act (CCPA) in the United States aim to give individuals more control over their personal data and to ensure that organizations are transparent about how they collect, use, and store this data.

CONCLUSION

AI algorithms would enable the creation of highly personalized marketing campaigns. They would analyze vast amounts of data about individual preferences, behaviors, and past interactions to deliver tailored messages, products, and offers to each consumer. Marketing content would feel uniquely relevant to each recipient. AI-driven analytics would provide marketers with real-time insights into consumer trends, preferences, and sentiment. AI-powered content generators would assist in creating a wide range of marketing materials, from written content to videos and graphics. AI-driven chatbots and virtual assistants would handle customer inquiries and support around the clock. AI models would forecast future customer behavior, allowing marketers to anticipate needs and preferences. AI would be able to gauge customer emotions and sentiment through text and voice analysis. AI tools would offer creative suggestions and insights, aiding marketers in crafting innovative campaigns and designs. Human-AI collaboration would become the norm in creative processes. AI algorithms would manage and optimize advertising campaigns across various platforms, adjusting budgets, targeting, and creatives for maximum ROI. Programmatic advertising would be prevalent. AI-generated virtual influencers and brand ambassadors would engage with consumers on social media platforms, representing brands and products in unique and entertaining ways. AI would expedite market research by analyzing vast datasets to identify trends and customer insights. It would be integrated into augmented and virtual reality experiences, offering immersive marketing opportunities. Consumers could virtually try products or explore destinations before making purchase decisions (Haleem et al., 2022; Marr, 2022; Wong, 2023).

The swift progress in technology implies that by 2050, novel tools and tactics will emerge for enhanced and more efficient customer engagement. Furthermore, the increasing significance of artificial intelligence (AI) in the realm of digital marketing will be evident. In the future, AI-driven marketing initiatives will excel in delivering customized messages to the appropriate audience precisely when needed. With the ascendance of the Internet of Things (IoT), enterprises will have access to vast troves of data, which can be harnessed to further refine and optimize their digital marketing approaches. As global connectivity deepens, businesses will possess the capability to monitor customer behaviors, preferences, and interests with greater precision, enabling them to convey exceptionally personalized messages to their clientele (GO Connected, 2023). In addition, the concept of phones, tablets, or computers as separate devices will disappear. Instead, computing will seamlessly integrate into people's lives, both physically and symbolically, augmenting current cognitive capacities. Since these computers will become intrinsic to our beings, traditional keyboards and screens on devices will become obsolete. Information input will be a product of thought, and data display will occur dire-

ctly through our visual perception (Frith, 2023). On the other hand, organizations are engaged in the development of brain-computer interface initiatives with the objective of narrowing the divide between humans and machines. Their aim is to empower individuals with paralysis, address medical conditions, and facilitate the use of thought-controlled devices. Moreover, the merging of AI and brain-computer interfaces presents significant prospects in the realm of marketing. This fusion could enable marketers to decipher user preferences through brain signals, allowing for the delivery of highly personalized content and products. Brands could assess immediate customer responses to their campaigns, fine-tuning strategies for emotional connection. Brain-computer interfaces have the potential to craft entirely immersive brand interactions, elevating engagement levels and fostering brand loyalty (Marr, 2023).

Author Contribution Rates

Design of Study: SD(%50), SBB(%50)

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Data Analysis: SD(%50) SBB(%50)

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