Role of Technology in Marketing: AI, AR and VR

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Abstract: *Artificial intelligence, augmented reality, and Virtual reality have fundamentally transformed customer-brand relationships. These technologies have the potential to allow companies to customize their product or service, and messages to their target audiences the specific preferences and needs. These emerging technologies have gotten a lot of attention in the marketing world as a new way to attract customers and improve their brand experiences. The goal of this study is to identify the most important aspects of AI, AR, and VR for the successful adoption of business in the marketing sector. This research work is aimed to analyze the impact of AI, AR, and VR on marketing.*

INTRODUCTION

In order to capture the attention of the targeted audience, the marketing industry has been constantly changing and adapting to their needs. As a result, marketing tools are the most important in terms of running a successful business (Bolton et al., 2018). Emerging technologies help customers' product and service offerings, giving them a competitive advantage (Balaji et al, 2017). The current business environment has changed the way businesses operate due to fierce competition and technological disruptions. Globally, a customer-centric approach focused on the needs of customers is critical to organizational growth (Vetterli and stermann, 2016).

Companies can use rising technology to connect to their customers, increase logo awareness, have an effect on purchaser attitudes, gather feedback, enhance cutting-edge merchandise and services, and boom sales (2020, Lal et al). By presenting new advertising tools, new technologies have often been correctly deployed to enhance corporation-purchaser interactions. For example, AI may be used to update human corporation representatives with system agents, facilitating corporation-purchaser interactions through "machine word" (Longoni and Cian, 2022). AR is utilized in retail to facilitate firm-client interactions, and it's miles particularly powerful as a "strive earlier than you buy" era while clients are uncertain approximately products (Tan and Reddy, 2022). Marketers can use VR to attain out to clients in new ways (Williams et al, 2017). A business enterprise that makes use of digital fact era can see widespread enhancements of their advertising and marketing communications in addition to their clients' know-how of the goods on offer. (Van Kerrabroeck et al, 2017). Furthermore, consumers derive value from VR, which improves their lives, and businesses and marketers must reach out to them through these channels in order to identify new ways to provide consumers with even more value. (Chung et al, 2016).

This study brings together the perspectives of several leading experts to discuss the

important role of AI, AR, and VR in marketing, as well as the research agenda for the future.

LITERATURE REVIEW

Conceptualization of Artificial Intelligence:

Alan Turing discussed the concept of AI in his paper in 1950 "Computing Machinery and Intelligence," wherein he taken into consideration the question "Can machines think?" (Zhuo et al, 2021). With recent advancements in AI technologies, every human activity is being impacted. (Haeniein & Kaplan., 2019). Similarly, AI has recently transformed business activities (Haeniein et al, 2019).

The definition of AI, on the other hand, is still a bit hazy. Scholars, authors, and experts have offered numerous definitions. Each expert has framed it in his or her own way, based on his or her own thoughts and experiences. Lewis et al (Lewis et al., 2018).For example, Kaplan (2019) described AI as "a system's ability to correctly interpret external data, to learn from that data, and to apply those leanings to achieve specific goals and tasks through flexible adaptation." Similarly, Saravanam et al. (2017) defined AI as the study of how to get computers to perform tasks that humans can't.

Companies and industries that use AI packages becomes greater diverse, as they may have the ability to research records throughout more than one functionalities, locate fraud, and offer world-magnificence consumer dating management. They can be capable of benefit a aggressive benefit due to this (Stewart et al, 2020). AI aids within side the discovery of human-like answers to complicated commercial enterprise problems. (Rose et al, 2020).This is similar to converting them into computer-friendly algorithms (Wang, 2019).

Conceptualization of Augmented Reality (AR)

The term "augmented reality" relates to a technology that combines virtual objects with the real world and allows them to interact with one another (Klossa et a, 2015). The most general definition, according to Milgram and Kishino (1994), "it is a really environment where digital media products are used instead of real world objects." AR creates an environment where the virtual and real worlds interact. AR technology has appeared in a variety of fields, including construction and food, and it combines the virtual and real worlds (Erbas et al, 2015).

Using augmented reality, many brands have begun to prioritize providing a more realistic and embodied experience to their customers. AR is being used by brands to identify target audiences, track them, and use technology in brand awareness and long-term marketing (M. Danson et al., 2017). Companies in both the public and private sectors invest in advanced technology in order to better promote or market their services and products, and they require skilled individuals and firms in this field (Cetin et al, 2020). AR applications provide these services to businesses with technology support in this context.

Conceptualization of Virtual Reality

According to Eichenberg (2012), "VR is a technology that allows a user to interact with a computer-simulated environment, whether that environment is a stimulation of the real world or an imaginary world," It's the important thing to seeing, and feeling the past, present, and future. It is the method with the aid of using which we are able to create our very own world, our own personalized reality (Sunder et al, 2010). Virtual reality has progressed through various stages of the business world. The use of virtual reality in car design, robot design, education, construction, and marketing has already been investigated (Lipresso et al, 2016). Every enterprise has the possibility to reconsider how they present themselves to and engage with their client's way to digital reality. VR opens up new opportunities for showcasing services and products as an advertising and customer support tool (Minderer et al, 2016). It's probable to grow to be a one-of-

a-type supply of data on consumer behavior as time is going on.

RESULT AND DISCUSSION

Artificial Intelligence in Marketing

AI also can be used for standardization, personalization, and relationalization, both one after the other or in combination. It enables marketers to employ AI in their marketing efforts. Payment and shipping, for example, can gain from standardization via the usage of mechanical AI, inclusive of computerized charge and shipping tracking. Using wondering AI, inclusive of numerous advice systems, virtual advertising and marketing can gain from personalization. Using feeling AI, inclusive of social robots greeting clients and conversational AI offering customer support, customer support and frontline purchaser interplay can gain from relationalization. To stability each the marketer and purchaser sides, the dialogue of the strategic use of AI in advertising and marketing movement is prepared across the advertising and marketing 4Ps and 4Cs (Ming-Hui et al., 2020).

By learning, adapting, and reacting to market trends, AI can assist in addressing these issues. Artificial Intelligence will personalize your marketing in various ways, and each customer will receive a personalized invitation on their mobile phones, establishing a sense of trust and credibility in the eyes of customers. AI can collect and track real-time data, allowing marketers to make the best decision possible before a campaign ends (Barnes et al., 2018).

Companies can benefit from AI in sales forecasting because they will be able to predict what to do next and how to meet customer expectations in a given time frame, as well as learn about past customer data and activity. This sense of business intelligence can assist you in managing inventory levels as well as the growth and expansion of your business through cross-selling initiatives (Priyam Verma, 2021).

Marketers can use AI to gain a deeper understanding of their customers' behaviour, as well as their actions and signals. As a result, they can more effectively and efficiently target the right strategy to the right person (Danavo, 2022). Gmail and Google Docs use AI in Smart Compose to study what you are typing, recognize it, and advise what to kind next, as an instance of AI in marketing (eMarketer, 2017). Artificial intelligence (AI) advertising makes computerized selections primarily based totally on records collection, analysis, and further observations of target market or monetary developments that could impact advertising efforts (Almanos et al, 2017). AI is often utilized in advertising campaigns wherein velocity is critical. AI equipment discover ways to excellent talk with clients primarily based totally on records and purchaser profiles, then serve them tailor-made messages on the proper time without the want for advertising crew intervention, making sure most efficiency.(chan,2021). Artificial intelligence is undeniably crucial in supporting entrepreneurs in connecting with clients.

Augmented Reality in Marketing

Vallio, (1998) defines AR as a mixture of digital items and the actual international wherein customers can have interaction with those items in actual time. Augmented truth is a captivating era that makes use of laptop imaginative and prescient to enhance sound, video, graphics, and different sensors primarily based totally on visible and actual-international items. AR additionally gives an interactive experience, however rather than developing a wholly synthetic environment; it seeks to complement the actual world. The backdrop and target items for computer-generated annotations turn out to be physical items within side the individual's environment (Tobias & Steven, 2004). AR has a huge variety of programs for a number of organizations in a number of industries (Irshad et al, 2016). In fact, the benefits of augmented fact

in advertising and marketing are limitless, especially for progressive manufacturers that use this present-day generation to draw and interact with their goal audiences (Nugraha et al, 2021).

The use of augmented reality (AR) in advertising and income techniques is turning into extra popular. It allows manufacturers to offer clients' one-of-a-type stories thru using their cell devices (Adrianto et al, 2016) Companies can use VR advertising to bridge the distance among revel in and action. You can use digital fact to offer a virtual revel in preference to a bodily one, which allows you to sell merchandise and services (Castro et al, 2018).

Within the help of VR we show off improvement in addition to sell present products. Customers can be greater invested in what you are creating, and you may have a source of feedback due to this (Quisimalin et al, 2018).

Consumers who are offered an AR experience show increased retention and consideration, in addition to interest among a considerable wide variety of purchasers in the usage of AR at the same time as shopping, according to studies. Marketers trying to have interaction clients in deeply customized and applicable methods that are not feasible thru different channels at the same time as additionally assembly key KPIs will locate new possibilities with Augmented Reality. (Idzikowski et al, 2016).

Augmented Reality lends itself to those marketer needs within side the following approaches at the right:

Categorize	Role
Personalized	Augmented reality is personalized due to the user creates and shares content that is unique to them.
Memorable	Using their real-international environment to create a right away and sensory revel in this is each shareable and emotional. According to a study conducted by IPG Media Lab and MAGMA, this results in a nearly 4x increase in retention.
Awareness-rising	Exciting events that generate buzz. AR is a dynamic and interactive experience, capturing the user's attention and encouraging them to interact repeatedly.
Localized	AR generates localized content, navigation, and offers using GPS data collected from mobile devices.

Moreover, AR can assist will increase within side the following:

Brand Recognition	Companies must locate revolutionary methods to advantage brand visibility, set up trust, and set up authenticity as era adjustments the manner customers locate, interact with, and buy products. AR gives a one-of-a-type possibility to hook up with clients in methods that conventional print, radio, and tv in reality can't.
	Brands can attain a massive quantity of clients fast in logo-secure environments, permitting them to hook up with capacity clients and extra effortlessly motivating them to have interaction with their manufacturers on an everyday basis.
Brand Engagement	AR is unique, substantial, and therefore, social and viral. Augmented Reality allows advertisers to have interaction with purchasers to a much deeper degree than ever before. Instead of passively viewing a static advert or looking at a video, humans can

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	now have interaction without delay with brands. From whimsical face masks (e.g. unload a bucket of Gatorade over your head at some stage in the Super bowl) to alien environments (e.g. shipping yourself into the Upside Down in Stranger Things), AR offers a wholly new medium for advertising. • Drive playtime and advocacy with customers (portal AR, gamified AR) • Educate on merchandise or features
Conversion and sales	As people move away from in-store shopping and toward online shopping, there may be a developing want to assist clients sense greater assured approximately their purchases. Today, there may be no manner to inform whether or not an photo appropriately depicts the product you may in the end purchase. Filling that gap and increasing purchase confidence is possible with augmented reality. An agency can now effortlessly create augmented truth belongings to symbolize their bodily goods, making an allowance for a digital product trial experience. Allowing clients to attempt merchandise digitally earlier than shopping for them need to boom income even as additionally decreasing go back costs and normal consumer churn/thrash.
Product Information and Try On	AR may be used to offer clients with greater product information, pricing, and availability, in addition to the capacity to genuinely attempt products, together with seeing how glasses appearance to your face, how a rug seems on your residing room with current furniture, and the way footwear appearance to your feet, amongst different things.

Virtual Reality in Marketing

From a marketing standpoint, the rapid advancement of virtual reality technology has created both opportunities and challenges. (Raymond R, 2018). Most importantly, the relationship between brands and customers is changing as a result of virtual reality. Instead of using ad blockers or clicking out of ads as quickly as possible, people seek out virtual reality brand experiences (Butkiewicz , 2016). Virtual reality marketing can help brand owners bring their image closer to the eyes of their customers. Users can have an immersive experience with VR, which allows them to connect with a product in a new way, and it provides value through new business models. (Keng C, 2018).

Today's VR-based campaigns show that providing a unique experience is more important than ever in innovative marketing strategies (Alaimo et al, 2018). Virtual reality (VR) technology improves marketing by allowing customers to interact with products or services in a more personalized way (Al-Obaidi et al, 2019). Instead of simply sending out marketing literature, VR allows brands to show their customers what makes their products or services great, allowing them to connect with their customers more effectively. This assists brands in providing a memorable customer experience while also reducing costly returns (Ashley et al, 2017).

VR (virtual reality) has advanced a one-of-a-kind marketing and marketing logic, and its extension and revel in within side the subject of advertising integration absolutely combine the immersion, three-dimensionality, and unique offerings of VR (digital reality) into the sector of marketing and marketing, demonstrating its wonderful patron attributes, which can be launched as a patron characteristic of communication (Cheng, 2020). VR is a brand new medium within

side the age of sensible media that has a brand new manner out within side the marketing and marketing industry, permitting clients to have a greater practical and customized marketing and marketing revel in with the aid of using changing conventional media-primarily based totally marketing and marketing techniques greater effortlessly and quickly (N.spielmann, 2021). In the future, the mainstream media and private view leaders should be aware of their very own ideas and begin selling chance attention amongst their target audiences.

Future research direction:

AI, VR, and AR have a bright future ahead of them. The way these technologies evolve, as well as consumer demand, will determine how they are used in marketing. Several research questions emerge from the information presented in this chapter: (i) How can AI, AR, and VR be used to enhance the belief of Presence? (ii) Which include smell and taste, enhance the belief of presence? , (iii) How can VR and AR be used to educate students? (iv) Can Artificial Intelligence be used to improve virtual reality and augmented reality**?**

CONCLUSION

The retail industry was most influenced by AI, AR, and VR. Its presence has compelled retailers to think about how they can compete with early adopters. It's now no longer tough to assume an organization that totally operates thru augmented reality applications, without an online or offline channel. However, obstacles within side the technology's application, inclusive of battery life, connectivity, and privateness concerns, are stopping AR's complete capacity effect and could surely be the focal point of destiny iterations. However, as era will become greater streamlined its ability to expand into new sectors and influence consumer purchasing behaviour will continue to grow.

REFERENCES

Conick, H. (2017). The past, present and future of AI in marketing. Marketing News, 51(1), 26-35.

Verma, S., Sharma, R., Deb, S., & Maitra, D. (2021). Artificial intelligence in marketing: Systematic review and future research direction. International Journal of Information Management Data Insights, 1(1), 100002.

Vlačić, B., Corbo, L., e Silva, S. C., & Dabić, M. (2021). The evolving role of artificial intelligence in marketing: A review and research agenda. Journal of Business Research, 128, 187-203.

Ozdemir, M. A. (2021). Virtual Reality (VR) and Augmented Reality (AR) technologies for accessibility and marketing in the tourism industry. In ICT Tools and Applications for Accessible Tourism (pp. 277-301). IGI Global.

Rauschnabel, P. A., Babin, B. J., tom Dieck, M. C., Krey, N., & Jung, T. (2022). What is augmented reality marketing? Its definition, complexity, and future. Journal of Business Research, 142, 1140-1150.

Renu, N. (2021). Applications of AR and VR Technologies in Healthcare Marketing. Journal of Marketing Management, 9(2), 35-39., N. (2021). Applications of AR and VR Technologies in Healthcare Marketing. Journal of Marketing Management, 9(2), 35-39.

Wang, C. L. (2021). New frontiers and future directions in interactive marketing: inaugural Editorial. Journal of Research in Interactive Marketing.

Ionuț, S. C., Maria, I. A., Ionica, O., Marian-Ernuț, L., & Steliana, R. (2021). AR & VR Marketing: when and where?. In Proceedings of the International Conference on Business Excellence (Vol. 15, No. 1, pp. 664-671). Sciendo.