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Application of Artificial Intelligence in Advertising & Public Relations and Emerging Ethical Issues in the Ecosystem

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Abstract

Advertising and Public Relations (PR) remain important elementsin the marketing communication and business activities. The application of artificial intelligence (AI), of late, in advertising and PR has changed the ecosystem of marketingof the present time. Still in its infancy, it has the potential to trigger unfathomable changes in future. The insufficiency in control and uncertainty of its impact pose some pertinent questions of business ethics. This paper reviews the present applications of AI in advertising and PR and the ethical challenges it throwsto business activities.

Keywords:*Technology; Society; Business Communication; Artificial Intelligence; Machine; Advertising; Public Relations; Ethics*

1.Introduction

The impact of technology cannot be isolated from society. It could be positive or negative or a mixture of both. The use of technology has created a space of digital culture that has transformed the society. However, it has thrown an epistemological obstacle at the same time (Guy, 2019; Hill, Betts & Gardner, 2015). The digital technologies have been instrumental in enhancing the skills of professionals worldwide (van Laar, van Deursen, van Dijk & van Dijk, 2020). Along with industries, the field of academic is also influenced by technological innovations (Rippa&Secundo, 2019).

With the changing times and formats, advertising as a form of marketing communication has been very effective on mobiles (Trivedi, 2015). In the age of cut-throat competition, marketing communications managers cannot pay the price to ignore mobile advertisements while strategizing their media plans.Trivedi (2019) explores that in the digitally driven society, banks offer chatbots to enhance customer services. Chatbots, a new technology platform, provide an information system to strengthen the required amount of consumer–brand relationship. Broadening the dimensions of using of technologies for e-commerce in his study, Trivedi (2016) establishes that the perceived ease of use and perceived usefulness as the factors influencing the acceptance of e-wallet

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services in India. In light of business perspectives, Ghosh (2017) finds the importance of big data in digitally driven commerce in India for business potentials and possibilities.

Since technology has been instrumental in intensifying marketing communication, understanding the importance of online reviews in the domain of brand communication cannot be underestimated. People are keen focusing on online hotel reviews to take online hotel booking decisions (Chakraborty & Biswal, 2020; Chakraborty & Bhat, 2018).

With massive use of technologies, the field of journalism has changed by leaps and bounds. Moreover, the news media will witness significant amount of changes with the utilization of AI. The robot reporter and automated journalism can be brought for further discussion in this context (Biswal & Gouda, 2020). However, such type of machine-driven journalism had advantages and disadvantages and it has thrown challenges to the industry.

So far as business communication is concerned, Public Relations (PR) is no far behind in being influenced by Machine Learning (ML) and AI. These technological advancements have strengthened the PR persons in managing the reputation, strengthening the community relations, promoting brand values, and overall enhancing the online presence of their clients. However, it is difficult to say that the machine will replace the man in the industry (Biswal, 2020).

Going beyond the business perspectives, Kusuma (2018) asserts that technology in the form of social communication has become an alternative tool of protest. Technology, a part of important part of daily lives, has fostered social movements.Social media has been used as an alternative media for the success of several social movements in India. Several studies have established the importance and impact oftechnologies in society. In similar lines, a study has investigated the discourse of health and fitness contents in Facebook pages, a form of social media which is driven by technology (Jaggi, Prakash &Patankar, 2017).

The emergence of artificial intelligence can be contextualized in the light of technological improvements. Artificial Intelligence has its roots in the post-World War II yearswhen scientists conceptualizedof creating an "artificial neural network," a type of algorithm modelling on the human brain, AI has come a long way. “Artificial Intelligence”,the termwas agreed upon at Dartmouth College conference of 1956. Though in existence for long, its exponential growth came in the early 2010s which witnessed the rise of big data giving AI hundreds of data points it requires to be smarter and the ability of computer enabling AI to process immenseness. Referred as the beginning to the phase three of digital revolutions arethe next to web and mobile and social media technologies (Cision, 2019) by 2016 advances as it had led to numerous technological inventions.

A Fortune story gives data that venture capitalcompanies injected $5 billion in 658 AI firms in 2016, which is a 61 percent rise from the previous year. By the end of 2017, over 60 percent of enterprises had introduced AI into their functioning--an increase of 38 percent fromthe year before (Cision, 2019).Many developing countries including India are trying their best at digital-based development strategies. China isleading the world in AI, robotics, big data applications, and industrial usage(Sachs, 2019).Indiais using digital platforms for important sectors of economy. Digital connectivity, e-payments, online biometric ID system Aadhaar used in rendering various services to the public both

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commercial and otherwisehas seen certainly a boost. Estonia has championed in e-governance. E-voting, e-health, e-finance, and e-payments are a few significant areas of its application(Sachs, 2019).Research reveals that AI is considered more important than other new technologies e.g. the Internet of Things (IoT) and Virtual Reality (VR) or Augmented Reality (AR)(Waugh, 2018).

The arrival of intelligent systems and their communication in various spheres of human life as active members poses the fundamental questions as what it means to be a human as suggested by Aristotle (Papadimitriou, 2016).

2. Research methodology

Research through literature review lays the foundation for knowledge furtherance, development of new andexisting theories along with finding the gaps for future research (Webster & Watson, 2002). Such type of review as a research practice obtains its results from available literature (Jesson& Lacey, 2006). Academic publications, online articles among others have been reviewed with academic rigour.

3.Theoretical perspectives

As ethical standpoints, Hunt and Vitell (1986) have stated that marketers need to apply both deontological and utilitarian perspectives of normative ethics theories when determining whether their behaviour is ethical. While analysing, deontological and rule utilitarianism perspectives have been considered to find out whether an action is ethical or not.Deontology emphasises on if an action is ethical or not while rule utilitarianism, out of all consequentialism theories, puts a premium on good over evil in the long run through pre-existing rules that best fits with application of new technologies and controlling its future developments.

4. Research objectives

The research paper has the following research objectives:

- To review various applications of AI in advertising and Public Relations
- To find out the ethical challenges the application of AI throws to business activities

5. AI anddata dehumanization in marketing communication

With the arrival of artificial intelligence, machine learning and natural language processing along with new technological platforms, it is possible to dehumanizetheexisting amount of data(Marcel Salathe, 2013).The revolution is a continuous process. Neural networks can be used to assist the work of analysts, as it gives them with a basis for taking correct decisions on the improvement of ICT systems in a quick manner and bring a host of other benefits such as normalization of: standards for maintenance of ICT systems for ensuring higher availability of such systems and problem management in various locations of an enterprise(Gosciniak & Wodarski, 2019).

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5.1.Better view about consumers' behaviour in social media

Social media sites ingest a lot data every day. The social media giant*Facebook*deals with approximately 500 times and micro-blogging site *Twitter* stores at least 12 times more data than the New York Stock Exchange (Smith, 2014). Using AI,it is possible to offer a clearer view to business communicators about consumers' behaviour in the social media leading to product/brand preferences(Papadimitriou, 2016). A researchby 'MarketingSherpa' has found that the share of consumers' following products/brands via social media is a significant amount of about58%(Wallace, 2018). A few latest technologies can be summed up as:

5.1.1.Image recognition: To establish the associations of the users with a product/brand by their interactions with company visual elements like logos is an advanced step for developing their marketing strategies (Papadimitriou, 2016).

5.1.2.Understanding consumer needs: Consumers' needs can be quickly understood by using tools like Kissmetrics and Google Analytics that study social posts and conversations between consumers and businesses(Clickatell, 2019).

5.1.3.Monitoring tool: Marketing in social media needs constant monitoring to see if the objective of marketing communication--toraise brand awareness or increase traffic to the website, is being achieved or todefeat any misleading strategies by groups of vested interests(Luke & Suharjito, 2015). For monitoring of feedback on brand, probably, AI in social media provides a very quick option. Course correction measures can be taken before it is too late (Clickatell, 2019).Brand terms, customer needs, sentiments and performance of competitors are some of the important points to be monitored(Hasan, Moin, Karim, & Shamshirband, 2018). By adding data mining to business intelligence, new datalike class and pattern can be found to forecast something else (Aziz, 2013).

5.1.4.Automation tools: Several interactions in social media can be automated using AI enabled tools e.g. SocialDrift (now shut down), Social Network Eliteleading the consumers to company websites to complete certain tasks and later on being engaged by company's machine learning algorithms by their follow-ups likes, and comments (Parama Fadli Kurnia, 2018).

5.1.5.Sales forecasting: The AI backed analysis by machines may predict the probability of purchase by a customer providing the company insights on its turnover (Mohanty, 2018).Online shopping giant Amazon has started"Anticipatory Shipping" to its various delivery centres where it may relocate products where the demand of the products can go up in near future studying customer's behaviour online(Forbes, 2014).

5.1.6.Recommending sales: AI can make retail purchase suggestions along with specialized recommendations like tax consulting and expert suggestions to optimize the likelihood of sealing a deal e.g.the features of Adobe Target canexplore a better personalized marketing offer.

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5.1.7.Query solving and content optimization: An intelligent AI enabledcustomer relations managementsystem can evaluate user needs, send personalized answerswithin no timeand attend a large number of queries. AI-powered tools can help optimizing the content contributed resulting in more success in deals (Avinaash, 2018).

6.Application of AI inadvertising

After image recognition of company logos by AI; as timepasses by, consumer advertising becomes more upgraded and personalised with the use of 'deep learning' machines by social networking sites (Avinaash, 2018). Peloton- the home spin bike, to cite an example,took the help of Lightning AI to quickly increase the chances of success of their ads in much less time (Martin, 2019).

AI is also being used by advertisers toimprove their email marketing many different ways, from automation to testing. For example, Phrasee uses AI to penbetter email subjects. It is even capable ofwriting within a specific voice with illustriousbrands like Domino's and Virgin Airlines in its kitty (Martin, 2019); Instaply is a customer service tool delivers quicker replies to customers byusing the Microsoft Bot Framework by coupling artificial intelligence and human personalization (Martin, 2019).

The World Wide Web generates approximately 2.5 billion gigabytes unstructured data per day. Subsequently, AI makes computations, or building blocks. The results of these computations can benefit the advertisers vastly.The combined usage of the below givencomputations permits advertisers to widen their understanding of consumer behaviour:

6.1.Natural language processing (NLP): Itlets AI machines to study the finer points of human language to infersense from their online interactions like posts, reviews, updates, comments, daily tweets among others.

6.2.Image recognition: Already discussed,even selfies posted online reveal brands used and users' personal details.

6.3.Speech recognition: It lets AI to examine the sense of spoken words.

6.4.Problem solving: Advertisers want to solve a particular problem by using user-generated content, they use the 'reasoning' of AI to solve it. Say for the knowing the personality traits of users for better marketing decisions.

6.5.Machine learning

After pattern detection from data and reasoning the machine memorizes everything it has computed earlier. Coupled with the use of machine learning toknow from its previous problems solving understanding, the more unstructured data an AI system processes, more insightful information it extracts for the advertisers making targeting easier. When the choice-list of brands is narrowed down, advertising targets toinstil trust and persuadethem that they are making the buying decision.These tasks are supported by predictive lead scoring i.e., machine learning letsadvertisers to make pin-pointforecasts about

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consumers'buyingdecision; machine learning and image, speech, and natural language generation make it possible for marketersto take care of the content while getting cues from consumer interactions in real time; andadvertisers use emotion AI to know how consumers feel about their brands publicly and what they are saying in their online interactions giving valuables cues for decision making(Batra & Keller, 2016).

6.6.Persuade to purchase

While consumers decide ontheir preferred brand worth and budget, advertising aims to take them into a scenario by reinforcing the brand value vis-à-vis its competitors(Batra & Keller, 2016).

Companies like Google and Facebook have massive AI drives and tools providinghuge quantity of information that marketers use. Google Analytics, Android, YouTube, and Chrome are used by Google to collect data. Along with Google and Facebook, Amazon, Microsoft, and IBM are all also making long strides with AI.AI can help marketers with Google Ads based on a pyramid with three layers: bidding, targeting and messaging(Stelzner, 2018). Bidding on sites like Google and Facebook ads is a numbers exercise. The marketermaylike to know how much to offer Google if someone clicks itsadvertisement. Systemshave excelled at making bids. Targeting,needsone to examine demographics and content, and decide on the location of appearance of an advertisement.Advertisers canask Google to show an advertisement when a consumerlooks for a particular keyword.Messaging,is of the top priority. The AI has become better over a period of time at understanding meaning and the context of a page(Stelzner, 2018).Though AI has its usage in many sectors, the departments that have shown sustained use are marketing and sales (eMarketers, 2017).Itoffers the marketers an avenue to connect better with its buyers that too in a more intelligent way (Avinaash, 2018).

7. Application of AI in public relations

MajorPR agencies have already put into practice various AI tools in their routine functions.Some of the important functions involving AI are:

7.1.PR campaigns: AI helps PR professionals make fact based creative decisions. It can reason the decision-making processsuch as the right time to start a campaign, content copy, effective channel selection to carry the campaign message, selection of opinion leaders such as bloggers, journalists among others (Cision, 2019).

7.2.Automatingroutine tasks: The routine and rules-based processes can be automated to save time of PR professionals for more creative engagements (Cision, 2019).

7.3.Sentiment analysis and crisis management: Sentiment analysis differentiates vocabulary use, tone and language context by using natural language processing. The technology can provide the real-time data with speedfor PR firms to effectively reactto crises(Cision, 2019).

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8. Application of AI in advertising & public relations and ethical challenges

In this paper, normative ethics perspective has been adopted to determine the ethical application of AI in advertising as it is in sync with the research aim of differentiating which actions are good or bad. Normative ethics is one of three subject areas, the other two being Metaethics and Applied ethics (Norman, 1998; Ekvall et al., 2005).

Cut throat competition in on-line shopping has led to continuous innovation from marketers for better advertising techniques (Nill&Aalberts, 2014).Personalized content provide better click-through rates to marketers might be harmful to users in the below mentioned areas (Apostolov, 2020):

8.1.Privacy: Advertisers try to collect as much data as possible about users for profiling and providing personalization. Marketers may sophisticate the art of persuasion to behaviour control (Jercinovic, 2017) of consumers.

8.2.Filter bubbles: Filter bubbles narrow down the users' contents. The biggest threat of it is to force users into patterns which could possibly snatch the sense of autonomy.

8.3.Workforce redundancy: With the substitution of human labour by AI, unemployment may rise posing a great burden to society. With the arrival of new technology, this has happened in the past i.e. making the low-skilled and responsibility workforce unemployed.

A consumer should be considered more of a partner in the marketeer's marketing rather than a mere target. For this, three primary aspects are of great importance: data, algorithms and consumer choice. AI is run by data, which is used to train algorithms and If the data is inaccurate, AI led decisions may be unethical. There is a question mark on the explainability of the 'algorithmic transparency' as agencies are not always ready to share the most valuable intellectual property in an AI system i.e. Algorithm Codes. Before making an informed choice, consumers should be aware of the techniques being used to market to them (Jercinovic, 2017).

Some of the ethical issues involving AI is worth discussing. Having ethical AI is key to sustainable business enterprises and decision-making. It is also essential to make sure that technological interactions improve the working condition and environment.

8.4.Sharing accountability: The R&D team should enter into a full-fledged consultation with experts of various domains before building a particular AI technology to fix a degree of accountability and explainability it wants to achieve.Once it is done, regular quality checking and bias detection testing is recommended.

8.5.Trust in corporate AI: Industry needs to communicate AI's rewards and make sure those rewards are shared with users in full to generate human trust in AI developed by corporates. People should know with whom they are interacting- a human or an AI powered machine.

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8.6.Welcoming AI and reskilling: In an AI- and automated technology-driven workplace, employees need to be reskilled. Industry needs to focus commitment to retraining the existing employees to embark upon new challenges ahead. Meanwhile, companies should reach out to educational institutions to persuade people to make their careers involving AI.

9. Discussion &conclusion

Since firms keep their AI innovations secret, it is a difficult and continuous task to track any unethical practices. The dynamism involved in the subject needs continuous research to counter new problems arising out of innovations by marketers.

Artificial intelligence (AI) applications are discriminatory in nature especially against specific populations. Some groups are over-represented. Study showsmore than 45% of ImageNet data, is derived from the United States that houses only 4% of the world populace. Whereas, the People's Republic of China and India jointlyaccount foronly 3% of its data representing 36% of world population (Mehling, 2018).

Incorrect algorithms can aggravate biases through feedback mechanisms. For instance, statistically-trained toolslike Google Translate making errors to the masculine pronoun. To make matters worse, with each error relative frequency of the masculine pronoun on the world wide webfurther increases defeating the hard-earned progresses towards equity (Mehling, 2018). The automatic sentiment analysis needs advanced recognition and modelling. The present approach hasshortcomings of the existing knowledge base and experience that pose a threat for correct analysis(Marecha & Mikołajewski, 2019).

AI can be and is being used for theft and non-corporate fraud. Social media bots are magic multipliers. Theycan be used to target billions of users simultaneously at a low cost. Criminal intent can take benefit ofthis capacity to create posts, befriend with people and get access to personal information that can be misused later. Conversational social bots can also be used for social manipulation(Alazab & Broadhurst, 2016). This happens when AI tries to manipulate behaviour by creating relationship with a victim and subsequentlymisusing the data obtained from the emerging relationship (Chantler & Broadhurst, 2006).

The use of AI in marketing communication is not free from threats. In his own words, Professor Stephen Hawking, one of the greatest scientists ever, had once said, "The development of full artificial intelligence could spell the end of the human race…."

The key is how responsibly we use a powerful technology in the greater services of the mankind and beyond. Hawking's another quote sums it up, "Perhaps we should all stop for a moment and focus not only on making our AI better and more successful but also on the benefit of humanity."

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