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An Exploration into the Fusion of Artificial Intelligence and Broadcasting in the 21st Century

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ABSTRACT

This paper delves into the fusion of artificial intelligence and broadcasting, by looking at the positive and negative impacts of the fusion on broadcasting. The researcher identified that AI has transformed the landscape of broadcast media positively by aiding content generation and curation, enhancing speeding dissemination of broadcast contents, aiding speedy media files retrieval, permitting real-time content moderation, as well as enabling personalized recommendation, audience targeting, and automated content tagging and metadata management. Furthermore, the negative impact of the fusion includes the spread of fake news, the overreliance of broadcasters on the use of AI, the rise of deepfake contents, as well as the loss of jobs amongst others. The researcher thus recommended that the broadcast industry should adopt responsible practices that would help mitigate the negative impacts of AI fusion with broadcasting.

KEY WORDS: *Artificial intelligence, Broadcasting, Fusion.*

INTRODUCTION

The 21st century has experienced a rapid rate of technological advancements, and these advancements include the integration of Artificial Intelligence (AI) in all sectors, the proliferation of smart phones, and the advent of block chain technology, which have transformed communication and revolutionalized industries in the society (Ramaila and Molwele, 2022). In other words, the 21st century has been widely recognized for advancements like the emergence of artificial intelligence that have changed what Marshall McLuhan referred to as a global village to a global street.

Ajibulu and Asemah (2021) argued that advancements in technology influences changes in cultural practices, human communication, and other aspects of any given society, just like the technological determinism theory posit. Thus, the emergence of AI and its fusion with the broadcast media have been acclaimed to have changed the way broadcasting works globally, by transforming the way content is produced, distributed, and consumed.

This paper is therefore aimed at exploring the various aspects of AI fusion with broadcasting, especially its positive and negative impact on broadcasting.

THE FUSION OF AI AND BROADCASTING

Nwaoboli and Ajibulu (2023) noted that the broadcast media is a tool for informing and educating the public about happenings in the society through the electronic transmission of radio and television signals. Okhakhu and Omoera (2010) also describe broadcasting as the

electromagnetic transmission of radio or television signals to a diversified audience, in order to provide them with congenial templates to discuss and reflect on issues of socio-economic advancements and socio-political developments of nations in contemporary times.

Artificial intelligence on the other hand refers to the science of making machines think like humans, and the simulation of human intelligence processes by machines, particularly computer systems (Russell and Norvig, 2010). Furthermore, IBM (2024) describes artificial intelligence as the technology that enables computers and digital devices to write, read, see, learn, create, analyze, play, make recommendations, and perform other things humans do. This depict that AI are computer systems that have the ability to perform tasks that are commonly associated with human cognitive function.Artificial intelligence fusion with broadcasting is therefore described as the incorporation of AI tools into the pre-production, production, and post production processes of broadcasting.

The fusion of artificial intelligence (AI) and broadcasting in the 21st century has brought about a significant evolution in the media industry, and provided possibilities for the future development of the broadcast media. In support of this, Hu., Xiang and Li (2021) noted that the fusion of AI voice technology in broadcasting has helped to improve the quality and efficiency of audio sounds, optimized the broadcasting system, and aided in the production of better services to the public. The use of AI tools like voice recognition to translate audio recordings to texts, and the use of facial recognition to automatically identify guests are being incorporated into the pre-production, production, and post-production stages of broadcasting.

THE POSITIVE IMPACTS OF AL FUSION WITH BROADCASTING

1. **Aids content generation and curation**: AI algorithms helps to generate and curate content for broadcasting, and this includes writing news articles and generating programme scripts for radio, television or podcasts. AI does this by analyzing vast amounts of data in order to identify trends or audience preferences, and to help broadcasters tailor their content to specific audience (Xuan and Yang, 2023). AI technologies such as natural language processing (NLP), speech recognition technology, and generative models have also aided the automatic creation of news articles, scripts, and other content in the broadcast media industry (Hu, Xiang and Li, 2021). For example, the use of AI speech recognition can make broadcasters to automatically develop news or programme script from spoken words like studio interviews, within a space of minutes, rather than using the manual method of transcribing spoken speech to written form that usually takes a longer period of time. The NLP is also an AI technology behind virtual assistants like siri and alexa, which enables computers to comprehend, manipulate, or generate human language, in order to develop broadcast contents.
2. **Enhances speedy dissemination of broadcast news and programmes**: The use of AI helps to drastically shorten production time, prevent transmission delay, and aid the broadcast of real time news or programs in order to satisfy the growing desire of audience for fast information (Xuan and Yang, 2023). This depicts that AI-driven technologies streamline content production and post-production processes, from video editing and color correction to special effects and animation, and this enables broadcasters to create high-quality content more speedily, efficiently and cost-effectively.

3. **Aids media files retrieval**: WTI (2020) stated that AI makes it easier or broadcasters to search their content management systems, in order to get a media file clip. For instance, AI can be used to get a particular part or clip of a guest interview within a few seconds.
4. **Permits real-time content moderation**: AI algorithms are employed for real-time content moderation in detecting and filtering out inappropriate or offensive material in broadcast content, live streams, or comments sections, in order to help maintain the integrity and safety of broadcasting platforms. This means that AI helps in assisting broadcasters to detect prohibited contents in their audio and videos contents in order to edit it out. For example, the New York time make use of perspective API, an AI tool to determine the comments that can be seen as inflammatory or objectionable (WTI, 2020).
5. **Enables personalized recommendations**: AI algorithms helps to provide personalized content recommendations to the audience by analyzing their viewing habits, preferences, and demographic information. AI also helps to suggest relevant programs, movies, or series to audience, and as well enhance audience engagement and satisfaction (Zhang, 2023).
6. **Enables audience analysis and targeting:** AI-powered analytics tools allow broadcasters to better understand their audience by analyzing their viewers' demographics and viewing patterns, in order to help broadcasters to tailour their programming and advertising to specific audience segments, thereby maximizing its reach and impact (Duan, Wang and Qin, 2020).
7. **Enables automated content tagging and metadata management:** Lan and Zhou (2023) noted that AI technologies automate the process of tagging and managing metadata for broadcast contents, and this helps to improve content discoverability and makes it easier for audience to find relevant broadcast contents across platforms.
8. **Supports virtual assistants and chat bots:** Broadcasting companies integrate virtual assistants and chat bots into their platforms to help provide customer support to their audience, and deliver personalized content recommendations that enhance their engagement and satisfaction, while reducing operational costs (Zhang, 2023).
9. **Permits predictive Analytics for Audience Engagement**: AI-powered predictive analytics tools helps to forecast audience engagement and viewership trends, and this helps broadcasters to optimize their scheduling and content placement strategies for maximum impact ((Duan, Wang and Qin, 2020).

The negative impacts of AI fusion with broadcasting according to Akothphanice (2023) and Oraby (2023) includes:

1. **The spread of fake news and misinformation**: AI algorithms can develop and broadcast false information to the public, making it difficult for the audience to distinguish between the false or true information, and thereby aiding the speedy spread of misinformation in the society.
2. **Over reliance of broadcasters on the use of AI**: Broadcasters sometimes become over reliant on Ai to perform their tasks, and this leads to lack of human oversight in the content creation processes, lead to a decline in journalistic standards, and as well reduce public trust in the broadcast media.

3. **The rise of deepfake contents**: Deepfakes refer to manipulated audio and visual contents that appear real, but are entirely fabricated. Ai powers the deepfake technology, and it is sometimes exploited to defame individuals, challenge media credibility, and manipulate public perception.
4. **Triggers job losses**: the use of AI to perform roles that were previously done by humans can lead to the loss of their jobs.
5. **Lack of creativity and empathy**: Al-generated broadcast content lacks empathy, which is crucial to reporting sensitive news stories, and it cannot have the creativity that human journalists are capable of.

CONCLUSION

In conclusion, the fusion of AI and broadcasting in this century has ushered in an era of unmatched innovation and efficiency in the broadcast industry, despite the fact that AI cannot be used to replace human creativity, intelligence and judgment. I therefore, recommend that broadcasters should adopt its use for their tasks while keeping in mind that the human factor is also important. I also recommend that the broadcast industry should adopt responsible practices that would help mitigate the negative impacts of AI fusion with broadcasting.

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