Examining the effect of Artificial Intelligence usage on the fourth estate of the realm in Nigeria

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Abstract

Adopting and integrating Artificial Intelligence (AI) into contemporary practice of journalism has brought a far-reaching and unimaginable implications in the contemporary society. This paper leaning on qualitative review of literature examined the effect of artificial intelligence usage on the fourth estate of the realm in Nigeria. The paper adopted the Technology Acceptance Model (TAM) as its theoretical framework specifying data-driven reporting, automated journalism and personalised news reporting as some of the obvious results of Artificial Intelligence usage in the fourth estate of the realm which have invariably brought a revolution to journalism practice of news generation and dissemination. These developments impact field work and newsroom thereby fostering a high-paced content creation and enhanced insights into data analysis. Nonetheless, Artificial Intelligence technologies equally pose some challenges for the media industry including misinformation and disinformation through algorithmic biases, potential job losses and ethical concerns that border on privacy invasion. This paper while highlighting some of these challenges and opportunities inherent in Artificial Intelligence use also recommended among others that there was the need to balance Artificial Intelligence's benefits with high ethical standards to maintain the media's penchant for objectivity, fairness and integrity.

Keywords: Artificial Intelligence, fourth estate, journalism, media ethics, AI, machine learning

Introduction

Artificial intelligence (AI) has made a significant incursion into several industries, including the fourth estate of the realm. The fourth estate refers to the media or the press. Artificial Intelligence adoption and use have impacted media's practice of news coverage, dissemination, and consumption. While this development holds great promise for the media, it has also raised serious concerns about the immediate and remote implications for the profession and practitioners alike.

Artificial Intelligence (AI) is described as a set technologies capable of interfacing and interacting with humans and their environments (Glickson & Woolley, 2020). Ferras-Hernandez (2018) cited in Glickson and Woolley (2020) posits that Artificial Intelligence is a technological innovation that has the ability to interact with the modern environment in information gathering across different computer networks, analysing such information, dishing out instructions, responding to questions, generating and assessing results, predicting events among others to attain defined objectives. Artificial Intelligence to Hansen et al (2017), refers to the assemblage of computer systems that can perform tasks which often require human intelligence. In other words, Artificial Intelligence is a suite of technologies with diverse and unique capabilities and limitations.

Arising from the deployment of AI tools rooted in such disciplines like engineering, computer science, and statistics, there is the increasing use of AI in media practice where AI and automation tools have transformed media production, distribution and audience engagement (Beckett & Mira, 2023; Hansen et al., 2017; Diakopoulos, 2019; Beckett, 2019). This development represents a paradigm shift in knowledge management, decision-making processes, and work structures between humans and technological advancement (Schwab, 2017; Murray et al., 2020). Several experts and researchers have expressed concern about the adoption and use of AI and other automation tools across diverse industries including the media (Issa, 2024; Diakopoulos, 2019; Carlson, 2018; Bakir & Andrew, 2018; Caswell & Dörr, 2017; Diakopoulos & Koliska, 2017).

Experts and researchers in AI and automation tools aver that these technologies have the capacity to create new professions. In media practice particularly, AI can mitigate the strain on overworked resources while preserving the unique talent of media practitioners. AI can support new product development and enhance new ways of engagement that may boost the consumption of media content (Beckett & Mira, 2023; Bennett, 2021; Carlson, 2021; Nwanyanwu & Nwanyanwu, 2021; Beckett, 2020; Diakopoulos 2020).

According to Nwanyanwu and Nwanyanwu (2021), AI tools will enable media practitioners such as journalists, editors and correspondents to become more effective and productive. AI has the capacity to streamline writing and content creation processes. AI, machine learning and natural language processing tools have often assisted media practitioners with article building, research, and locating reliable news sources. The duo believe that AI tools make content creation and dissemination simpler and more efficient.

AI is a fast-developing field with great potential for the media industry. It has the capacity of accelerating news reporting, improving data quality, reducing search time, enhancing customer interaction, forestalling the widespread of misinformation, and making it easier for media audience to select profitable and relevant options and initiatives. The quality and speed of video editing are enhanced with AI (WTI, 2020). Its adoption is predicated mainly on public trust in such technologies as media practice gravitates towards increased data-driven reporting, personalised news delivery and automation (Glickson & Woolley, 2020).

There is a need for caution while employing AI tools across industries especially media as proclivity towards abuse and misuse are possible. Similarly, Issa (2024) posits that AI use can lead to unethical practices which are damaging to the larger society. As AI and automated tools continue to make great inroads in media practice, advanced and innovative means of AI integration into the industry are needed (Kuo & Li, 2023). Aside from upscaling and enhancing their skillset, ethical and professional problems that will inevitably affect AI's usage need to be addressed (Horska, 2020; Sukhodolov, et al. 2019).

Through a qualitative literature review, this paper therefore examines the effect of Artificial Intelligence usage on the fourth estate of the realm in Nigeria with a focus on the prospects and challenges inherent in its use while making some recommendations for its appropriation and maximization.

Statement of the Problem

Many in different quarters are enthused while some are very sceptical about the rapid integration of Artificial Intelligence into media practice. Although AI tools holds the promise of enhanced content production and personalised news delivery across diverse platforms in diverse formats, the widespread adoption and use of Artificial Intelligence technologies equally present challenges that can threaten the cherished values of media practice.

There are still communication and knowledge gaps between technologists who designed Artificial Intelligence and other automated technologies and media practitioners using such tools in their profession (Hansen et al, 2017). Thus, the implications of the future use of Artificial Intelligence remain unpredictable coupled with the high cost of some of the Artificial Intelligence tools used in the media industry despite the widespread adoption and constant use across the industry.

The questions that rack discerning minds are: how does one safeguard the principles of objectivity, accuracy and fairness? Are media practitioners going to be displaced and replaced by Artificial Intelligence and automated tools? This paper aims to assess the impact of Artificial Intelligence tools usage on contemporary media practice; unveiling both the challenges and opportunities their use poses to the media practitioner. There is, therefore, the need to urgently explore how Artificial Intelligence and automated tools can be properly and ethically harnessed to avoid eroding public trust and media credibility.

Theoretical Framework

The Technology Acceptance Model (TAM) is a theoretical framework designed to predict and explain user acceptance of innovative technology (Davis, 1989). Technology Acceptance Model is hinged on two core variables or constructs that determine the acceptance of any new technology or innovation. The variables are perceived usefulness (PU) and perceived ease of use (PEOU). Perceived usefulness (PU) refers to the prospective users' subjective belief that deploying a given system or technology would enhance their job performance in the context of their organization whereas perceived ease of use (PEOU) indicates the extent to which an individual believes that using a particular technology will be free of much stress or effort. Technology acceptance is noted aside from approval, as the favourable and steady utilisation of innovative technology (Umrani & Ghadially, 2008). Technology Acceptance Model has been significantly modified to enhance its applicability across different contexts with PU also seen from the context of a system adding to a user's task performance (Davis et al., 1989; Davis, 1989). Both PU and PEOU influence a user's Attitude Toward Using (ATU) and Behavioural Intention to Use (BI), which are critical predictors of actual system use. Technology Acceptance Model has been extended to include additional factors such as social influence and facilitating conditions; thus, further enhancing TAM's predictive power (Venkatesh, Thong, & Xu, 2016).

Technology Acceptance Model (TAM) in relation to the topic 'assessing the impact of AI in media practice in contemporary times: prospects and challenges,' provides a framework for understanding how and why media houses adopt and use Artificial Intelligence and automated technologies in their media practice. The constructs of Perceived Usefulness and Perceived Ease of Use helps to explain why media practitioners deploy Artificial Intelligence tools for coverage and content dissemination.

Literature Review

The fourth estate of the realm: according to old English tradition, society was divided into three estates:

1. First Estate (The clergy)
2. Second Estate (The nobility)
3. Third Estate (The commoners)

The press came to be regraded as the Fourth Estate because of its powerful role in shaping public opinion, holding government and institutions accountable, and influencing social and political affairs. Thus, the media or press becomes a crucial pillar of democracy and public accountability. The role which the Fourth Estate performs include:

Watchdog: the press holds leaders and institutions accountable.

Agenda setter: the press shapes what issues people discuss by choosing what to cover.

Bridge: it connects citizens with those in the corridors of power among other roles

The emergence and growth of Artificial Intelligence (AI) have significantly transformed media practice worldwide, with extensive research now investigating AI's influence on news production, distribution, and audience engagement. Diakopoulos (2019), for instance, conducted a comprehensive study on the integration of algorithms within newsrooms, using a mixed-methods approach to examine how media giants such as *The Washington Post* and *Associated Press* implemented AI tools like Heliograf and Wordsmith. His findings revealed that these systems expedite the generation of routine news, enabling media practitioners to dedicate more time to in-

depth, investigative reporting. However, Diakopoulos raised concerns about over-relying on AI for content creation, warning of potential job displacement among journalists.

Linden (2022) conducted a qualitative study on AI's effects on editorial decision-making and public discourse, involving media practitioners and technologists from major media outlets. His research demonstrated that Artificial Intelligence improves content production speed and efficiency, though it often introduces biases due to its reliance on algorithmically processed data, which may reflect underlying skewed datasets. Linden sued for the diversification of data to reduce bias, stressing the need for accountability and transparency in AI development and deployment within the media environment.

McCosker and Wilken (2021) examined the role of AI in the propagation of misinformation through technologies like deepfakes, which pose significant threats to news credibility. They found that while AI tools can detect and combat misinformation, some media organizations are slow to adopt these technologies due to high costs. They suggested government and industry collaboration to develop affordable AI tools to counteract misinformation and disinformation in the media landscape.

Beckett (2020) analysed AI integration across European and American media organizations, using quantitative methods to reveal that AI is primarily utilized for content personalization, data analytics, and social media monitoring. However, his findings highlighted ethical concerns and the need for regulatory guidelines to prevent AI misuse in newsrooms.

In a meta-analysis of 45 peer-reviewed studies, Zhang and Dafoe (2020) explored the ethical challenges of AI in journalism, identifying algorithmic bias and misinformation as prominent issues. They emphasized that the opacity of AI systems risks journalistic standards and recommended that media organizations invest in ethical training, ensure human oversight, and uphold objectivity and integrity in AI-assisted journalism.

A 2017 policy forum organised by the Tow Centre for Digital Journalism and the Brown Institute for Media Innovation gathered journalists and technologists to discuss AI's impact on journalism. Key issues explored included AI's potential to assist in reporting, areas where media organizations have yet to leverage AI and the specific newsroom roles AI might replace. The forum's findings highlighted that AI could enable journalists to cover stories previously hindered by resource

constraints. However, the unpredictable nature of AI underscores the need for continuous oversight by journalists and technologists to prevent misuse. The forum also identified a significant knowledge and communication gap between AI developers and journalists, which could lead to ethical breaches. Recommendations from the event called for enhanced journalist training and partnerships with academic institutions to facilitate access to high-cost, customized AI tools (Hansen et al., 2017).

Deployment of AI in the fourth estate of the realm

Media practice in contemporary times has undergone significant transformation necessitated by the adoption and use of innovative technologies like Artificial Intelligence (AI), data analytics and algorithmic tools. According to WTI (2020), the impact of Artificial Intelligence tools in media practice is expected to increase as machine learning and natural language generation technologies develop. The trending issues in the contemporary media include some of the following:

Data-driven journalism

This is the use of AI tools to analyse several Thousands of datasets for investigation. Through the deployment of natural language processing and machine learning AI can unveil patterns in large amounts of data that will be almost impossible for manual processing and analysis. This enables media outlets to deliver news stories based on data that reveals serious and significant trends in society (Chua & Westlund, 2019). Datamining, visualisations and statistical techniques can be used to uncover crime and election results. Growth in data-driven media practice is significantly impacted by government open portals and transparency initiatives (Lewis & Westlund, 2015).

This AI data-driven media practice is very essential as it enables the media to hold the government and corporate organisations to account through in-depth investigative journalism. The massive fraud involving private individuals and high government officials as discovered by the Panama Papers remains a pointer to the importance of data-driven media practice (Wright, 2016). Through data-driven journalism, practitioners are poised to decipher patterns and trends in datasets that could have remained hidden (Coddington, 2015).

Automated Journalism

A major area that AI has impacted is automation which has revolutionised media practice. Some experts in media practice are of the view that AI by automating basic routine tasks, offers practitioners the freedom to focus more on strategic and investigative reporting (Team EMB, 2023; Marconi, 2020; Beckett, 2019). Artificial Intelligence tools can help practitioners with content production by handling tasks such as new media ideation, that is, coming up with ideas for social media posts, thumbnail photos and titles. AI algorithms help to generate news stories from structured data. Reuters, The Associated Press, The Washington Post and Bloomberg have adopted such automation in their media practice. This robot journalism delivers news content at a speed and scale that humans cannot attain thereby enhancing efficiency (Graefe, 2016; Dörr, 2016).

Automated journalism often described as robot or robotic journalism is a media practice that uses AI and a set of rules that have been programmed (algorithms) to automatically raise news with little or no human assistance. This is especially advantageous when it comes to sports news, weather forecasts and financial reports. Lindén (2022), posits that automated media practice is advancing so fast because of its usefulness in news coverage especially of repetitive and routine tasks. Automated journalism entails taking structured data as input and using natural language processing (NLP) techniques to convert such heavy data into news (Thurman et al., 2017).

Personalised news distribution

AI enables content consumers and diverse media audiences to consume contents that are tailored to their particular interests (Thakkar et al., 2020; Wang, 2020). Through AI tools, media organisations can deliver news based on a user's preferences. This is done through programmed instructions that focus on an individual's online behaviour and activities across diverse sites including social media platforms. The algorithms analyses the individual's acts and recommend content that is in tandem with their interests (Fletcher & Nielsen, 2018). Personalised news feeds, according to Dörr (2016) are rejigging how media audiences consume content; thus, enhancing audience engagement by making media practice more accessible and user-centric.

Facebook, Google News and other media platforms leveraging AI tools gather data in real-time from content consumers as they interface with the platforms. Their queries via clicks, and other online activities are documented for personalised attention whenever such sites and platforms are

subsequently visited. This gives rise to echo chambers, a situation where users are exposed to only content that appeals to them (Pariser, 2011).

Specific Use of AI in the Newsroom

Adopting and integrating AI and automated technologies into the media profession has been noted to boost productivity, and personalisation and enhance accuracy while at the same time creating opportunities for media practitioners to concentrate more on tasks that require more human judgement and interface. This is in line with Hansen et al (2017) that AI tools are making a significant impact in the media because of their increasing use in the newsroom. Some of the areas AI and automated technologies are holding sway include:

Fact-Checking: AI tools can check the accuracy of information by scanning and verifying databases from which such content was generated. Certain AI algorithms can cross-check statistics, and flag suspicious news items and quotes to mitigate falsehood and misinformation (Graves, 2018).

Writing Assistance and Grammar Check: certain applications and AI tools such as Grammarly and ProWritingAid often help media practitioners with real-time grammar checks, offering suggestions for improved writing to ensure conciseness and precision of language. ChatGPT, Meta AI and others equally assist in the writing of media content. A user can generate outlines and ideas, research certain topics of interest and enhance the quality of news items by using these tools. Thus, ensuring efficiency and proper time management which could have been lost on exasperating long hours of writing, proofreading and editing (Bradshaw, 2018).

Translation and Summarisation: AI-driven translation and summarisation tools are particularly useful for breaking news and time-sensitive content. AI can condense lengthy articles into concise summaries for quick review by editors, making it easier to distribute information across multiple platforms. AI tools can also translate content into various languages, expanding the reach to global audiences. These tools can be customised to reflect local cultural sensitivities, as Montalvo and Núñez (2021) note, further supporting media organizations in reaching diverse populations.

SEO and Headline Crafting: To optimise content for search engines, AI tools analyse keywords and audience engagement patterns to create compelling headlines and improve SEO. This ensures that content ranks well in search results, driving visibility and audience reach (Dick, 2020). AI-

generated headlines are crafted to capture attention while maintaining alignment with the article's content.

Customisation and Personalisation of Content: AI enables personalised content recommendations by analysing user behaviour and browsing history. This customization allows editors and journalists to tailor content to specific audience preferences, enhancing user engagement. Research by Thurman and Schiffers (2019) supports the idea that personalized content can improve audience retention and satisfaction by aligning with individual interests.

Content Editing: Beyond text editing, AI tools assist with image and video editing by automating tasks like light adjustment, cropping, transcription, and captioning. AI-powered systems can summarize video content and generate captions, enabling editors to focus on more intricate aspects of media production. This automation streamlines the workflow, allowing for faster and more efficient content delivery.

Apart from the good side of AI adoption in the fourth estate of the realm, there are a number of challenges and misgivings some of which includes;

Misinformation and Disinformation

Disinformation, which is the intentional spreading of false news to deceive, has increased with digital tools, especially AI. Misinformation, however, is the unintentional sharing of wrong or misleading content, often due to human errors and biases. One major tool used for disinformation is deepfake technology. Deepfakes, created through AI, can make people appear to say or do things they never did by mimicking their voices and faces (Diakopoulos, 2019). As this technology becomes more accessible, realistic, and convincing, it raises serious issues for trust, fairness, and media integrity (Pawelec, 2022).

With deepfake technology, anyone can create fake content, like a video showing a well-known political figure saying things they never said, which poses serious ethical challenges (McCosker & Wilken, 2021; Hansen et al., 2020; Birnbaum, n.d.). This fake media goes against journalism principles and makes it harder for practitioners to distinguish real news from AI-generated fakes, especially in political reporting. This confusion can lead to defamation cases against journalists and their organizations if they report these fake statements. Deepfake-based hate speech and disinformation are becoming more common, adding to the problem (Pawelec, 2022).

Ethical Concerns

AI also raises ethical concerns, particularly around personalized news. With AI, questions of transparency, bias, and "filter bubbles" (where people see only certain types of information) are on the rise (Pariser, 2011). The risk of isolating certain news items and diverse voices remains a significant threat engendered by personalised news delivery as one of the democratic functions of media practice which is to inform the public or media audience from a broad and balanced perspective becomes compromised (Bodo et al., 2019). Data privacy is another issue, as some third parties access media audiences' data without consent, which compromises journalistic integrity. According to Curry and Hammonds (2021), journalists face ethical challenges when AI infringes on privacy, especially in investigative reporting.

Algorithm Bias

Algorithm refers to a precise rule or set of rules specifying how a particular problem will be solved. This of course is done through programming via a language described as algorithmic language. AI tools are often trained on massive datasets, and if this data includes biases, the AI can reflect and even increase these biases. This can lead to biased news recommendations and favour certain narratives or groups over others (Binns, 2018). In an algorithm-driven media environment, there is always a risk of manipulation and misinformation if the data isn't reliable (Dörr, 2016). Some AI systems also lack transparency, which goes against good journalism principles (Zhang & Dafoe, 2020).

Job Displacement

Automation in the media industry could lead to job displacement, as tasks traditionally handled by journalists are now automated. This fear of job losses is rife these days with the prevalent integration of AI in journalism across the globe. Many worry that AI might replace some roles, especially entry-level ones, by automating tasks (Carlson, 2021). While AI does make certain tasks more efficient, it cannot completely replace human media practitioners, as it still needs human oversight. Instead, AI can support journalists by simplifying tasks, making the work more efficient and rewarding (McGregor, 2020; Hansen et al., 2017).

Conclusion

AI is revolutionising the contemporary media landscape across the globe. Its use is promoting efficiency, contributing to data-driven reportage, ensuring personalised news delivery and enhanced audience engagement. AI has enabled media practitioners to overcome energy-sapping and time-wasting journalistic tasks that hitherto required several days or weeks to accomplish. Nonetheless, these advantages have their corresponding challenges including disinformation and misinformation, ethical concerns, and algorithmic bias among others.

The fear of massive job loss in the media industry is still rife. There is a need, therefore, for practitioners to enhance their technological knowledge and skills; and be conversant with AI tools and automated technologies to remain relevant in an ever-evolving technological media landscape. Since AI is an evolving innovative technology, both developers and users in the media industry must exercise a high level of caution to preserve the highly cherished objectivity, accuracy, integrity, trustworthiness and credibility of media practice in this contemporary time.

Recommendations

Based on the reviewed literature regarding the transformative and revolutionary impact of AI on media practice, the authors made the following recommendations:

1. There should be a balance between AI's benefits and high ethical standards to maintain the media's penchant for objectivity, fairness and integrity.

2. Media practitioners should be encouraged to learn more about AI in order to handle the challenges that come with its use.

3. Contemporary media practitioners should enhance their technological knowledge and develop new skills to remain relevant in a highly automated media environment where there is a constant fear of job displacement.

4. There is a need for partnership between technology experts and the media industry to ensure a mutually beneficial relationship in an evolving media landscape.

5. AI models should be trained and retrained by tech experts to reduce bias and ensure that diverse voices are accommodated.

6. There should be rigorous verification process in place across the media industry to mitigate the incidence of fake news and enhance news credibility.

7. Even in the face of massive automation and AI use, there should be constant interface and collaboration between AI technology experts and the media to ensure that media practice is such that has a human-face.

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