

Adoption of AI Trend in Journalism: Perspective of Diffusion and Innovation Theory

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ABSTRACT

The use of AI presents opportunities and challenges in the modern era. AI is used in several industries, including marketing, telecommunications, healthcare, banking, and education. In broadcasting media, in particular, the use of AI is growing because it generates interesting content. Several broadcasting stations use AI avatar news presenters to deliver the news. This research aims to understand the opportunities and challenges of using AI in journalism and the quality of information delivered to society. This study employs a descriptive qualitative approach to analyze the diffusion of innovation theory and describe the phenomena. Data collection involves literature study, observations, and documentation. The results show that these opportunities arise from adopting technology as a means of diffusion and innovation. It involves interesting information production, information gathering, data analysis, efficiency, and technological development. The challenges stem from data quality, ethical principles in journalism, cost, technological dependency, and production of information. However, journalists have to be aware of the ethical principles in journalism, intellectual property right and data privacy protection, hoax dissemination, keep the accuracy of information, possibility of losing job. Therefore, there is an urgency to limit the use of AI to avoid many violations because of AI.

Keywords: AI, Adoption, Broadcasting Media, Diffusion, Innovation

1. INTRODUCTION

Artificial Intelligence (AI) has been adopted in many fields, including education, business, healthcare, sustainability, marketing, digital services (*Data Pengguna AI Di Indonesia Update Terbaru*, 2024). Nowadays, AI also uses in the media industry. Many news organizations integrate AI in news content arrangement (Aurelya, 2024). This AI tool makes easier to produce various type of media content. In addition, it can analyze and extract data faster and more accurately than humans. Therefore, decision-making processes based on information can be improved.

The media is dynamic, so it will keep up with the developments in communication and information technology. The other major research topic, the impact of technology, is irrelevant until it is adopted. Two important areas of research on new communication technology are communication and the adoption and implementation of innovation (Rogers, 1986, p. 116). The most important elements of the diffusion of innovation theory are innovation communicated through specific channels over time among members of a social system (Rogers, 1986, p. 120).

Due to their interactive nature, the value of innovation increases with each successive adopter. In extreme cases, such as with electronic messaging system, the innovation is worthless to the initial adopter until there is at least one other adopter. Furthermore, the extent to which a new communication technology is used becomes an important variable, in addition to whether or not adoption has occurred (Rogers, 1986, p. 116). AI affects many aspects of pre-

production, production, analysis and marketing in sectors including film and television production, streaming services, video games, music, and journalism (Lachman, 2021, p. 1).

Table 1. The Use of AI in News Organization in Indonesia

A Snapshot of AI Use in News Organizations in Indonesia

MEDIA	Data Searching	Tren Analysis	Audience Analysis	Search/ Arrange Reportage Ideas	Information Filter	Source Editing	Verification	Arrange Report Construction	Data Analysis	Content Personalization	Report Dissemination
Babad.id	v	v		v		v					
IDN Times											
KBR Media	v			v	v	v	v				
Suara Surabaya	v								v	v	
Liputan6											
Katadata	v	v	v	v					v		
Tribun	v		v	v		v			v	v	
Berita Jatim	v					v					
Zona Utara	v			v	v	v			v	v	
Narasi	v	v	v	v	v	v		v	v	v	v
Suara	v	v	v		v				v		
INews	v	v	v	v	v	v		v	v	v	v
Kompas.com	v	v	v	v	v	v		v	v	v	v

Source: (Manan, 2024, p. 19)

The increasing use of AI is prompting media outlets to adopt innovations, such as more interesting content to attract the attention of the audiences, especially Gen Z. Innovation is defined as an idea, practice, or object that is introduced as something new by an individual or other entity. The use of AI is significant because it allows broadcasters to update information. Television broadcasting is giving the media a new look to broadcasting media by using avatar anchor AI. Young people prefer it because it provides much more interesting content.

Therefore, China presented the first virtual anchor four years ago. Some countries have introduced avatar AI news anchors. One example is India Today Group, which has an AI virtual news anchor named, Sana who presented at the India Today Conclave 2023. China's media outlet People's Daily, which is affiliated with Communist Party of China (CPC), also has an AI news anchor named Ren Xiaorong. Russia's Svoye TV station has an AI news anchor named Snezhana Tumanova, and Kuwait's news station has a virtual anchor named Fedha. South Korea's MBN also has an AI news reader named Kim Ju-ha.

On April 21, 2023, the Indonesian national television station officially presented an AI artificial avatar of a news presenter that resembles some of the tvOne presenters, Karni Ilyas, Nadira, Sasha, and Bhoomi. This popular television station has adopted the use of AI avatars for its news anchors. Using AI gives the station the chance to expand and enrich the way news is presented in the digital age. After tvOne launched its AI avatar, Kompas TV followed suit. tvOne AI presenter was launched alongside the media outlet tvOne AI, the first AI based media outlet in Indonesia. The birth of the AI news presenter impacted Indonesian broadcasting media (Aliffudin, 2024, pp. 1–2).

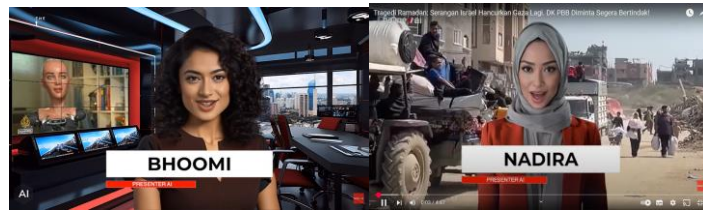


Figure 1. TVOne AI Presenter

Source: (tvOne, 2023)

However, the arrival of AI raises several questions about its consequences. The objective of this research is to identify the opportunities and challenges of using AI in journalism and to evaluate the quality of information delivered by media regarding the ethical principles of journalism. Meanwhile, the use of AI in journalism also creates a paradox. In the context of journalism, the use of AI raises several questions about the integrity of news and ethical principles in reporting such as news accuracy, the importance of verification, and information circulation. Because of its likely or actual impact on audiences, objectivity is ultimately important.

There seems to be scope for audience research on several of the discussed issues. Much attention has been paid to the general issue of credibility, which is related to accuracy as well as to the perceived independence and neutrality of the news. Based on the above description, two questions arise (1) What are the opportunities and challenges of AI in journalism? (2) and, how is the quality of the information received?

2. METHODS

A descriptive qualitative method was used to answer the research questions. Qualitative Method describe the results of research using description. Descriptive qualitative research attempts to create a systematic, accurate, and factual general description of the facts, characteristics, and relationships between the phenomena being studied (Furidha, 2023, p. 2). The descriptive method of research is fact-finding with interpretation. The descriptive method, as a method of science, aims at an understanding or generalization concerning the behavior of the object studied so that stable beliefs can be imposed on the flux of change in which the objects generally exist.

Descriptive reviews involve systematic and transparent procedures, including searching, screening, and classifying the research (Pare et al in Furidha, 2023, p. 3). Descriptive reviews can take many different forms, including qualifying the data, summarizing or resuming the data into more fascinating and useful details, and drawing accessible and applicable conclusions (Furidha, 2023, p. 3). This research collect data using literature study, observation, and documentation.

Technique of data analysis used Miles and Huberman model; data reduction, data presentation, and conclusion. Data reduction was used to focus on data selection, data grouping, and data summarizing to get the relevant data according to the objective of research. Data presentation used description to interpret data easily to understand collected and analyze data.

Conclusion step is the last step in data analysis technique. This step explain data after being analyzed.

In this case, AI reveals the social impacts on society due to innovation and diffusion, such as its effects on communication workers, products, structures, and society. The use of AI gives a change in the way journalists gather, produce, and distribute information. This research tries to find the use of AI in journalism by describing the opportunities and challenges and the credibility of information.

3. RESULTS AND DISCUSSION

3.1. The Opportunities and Challenges of AI in Journalism

An innovation is novel idea, practice, or object that has been provided by an individual or group. Innovations are perceived as novel by individuals or other units of adoption and are accepted by members of the social system. The main elements of the diffusion of new ideas are: (1) an innovation that is, (2) communicated through specific channels, (3) over time, (4) among the members of a social system. An innovation is an idea, practice, or object that is perceived as new by an individual or other unit of adoption. The characteristics of an innovation, as perceived by the members of a social system, determine its rate of adoption. Five characteristics of innovations are: (1) relative advantage, (2) compatibility, (3) complexity, (4) reliability, and (5) observability (Rogers, 1986, p. 117).

Mass media adopt the development of communication technology in their industry as a form of adaptation and innovation. This adoption and innovation create some opportunities and also challenges to the system, organization, and people who work in this industry. The rapid growth of technology can affect the people's behavior. The influence of AI causes the significant role in journalism. However, as two sides of coins, the adoption and innovation also give the positive and negative impacts.

Time is involved in the diffusion of innovations through (1) the innovation-decision process, (2) innovativeness (the degree to which an individual or other unit adopts new ideas relatively earlier than others members of a social system, and (3) the rate at which an innovation is adopted. The innovation-decision process is the mental process through which an individual or other decision-making unit learns about an innovation, forms an attitude towards it, decides to adopt or reject it, implements the new idea, and confirms the decision (Rogers, 1986, p. 118).

The use of AI in journalism gives a choice to people and their organization whether they will adopt or reject it. If they choose to adopt, it means that they will integrate AI in their industry. However, if they choose to reject, they won't use it. Adoption of AI can help the journalistic works more effective and efficient. Event though it can also cause the consequences in the near future. Adoption of technology is possible to innovate to information and communication technology by following trend and development or imitate whoever adopt it first.

Mass media channels are more effective at creating knowledge about innovations. In contrast, interpersonal channels are more effective at forming, and in changing attitudes towards new ideas and directly influencing decisions to adopt or reject them. Most people evaluate innovations they are considering adopting, not based on scientific research by experts

but on the subjective evaluations of near-peers who have already adopted the innovation. Thus, these near-peers serve as social models whose behavior tends to be imitated by others in their network. (Rogers, 1986, p. 118).

Several conventional and digital media use AI to help them to do their journalistic duties. AI has an important role to gather, produce, and distribute information. Journalistic works that used rely on human can now use AI to simplify and speed up the work, as well as reduce the human power involved. AI use to data searching, trend analysis, audience analysis, searching and arranging ideas, information filter, source editing, verification, arrange report construction, data analysis, content personalization, and report dissemination.

AI has been used in journalism to create simple automated content, collect data, identify patterns, and predict trends. These applications have proven to be immensely useful for investigative journalism. AI has been used to analyze trends and public opinion on social media, as well as for content personalization. News organizations began using AI algorithms on their platforms to adjust content distribution according to individual user preferences, boosting engagement, and content relevance. Machine recommendation were implemented to offer article and content recommendations based on the user behavior and preferences (Jerbi in Manan, 2024, pp. 9–10).

In the following years, AI was used for deep learning and contributed to enhancing journalist's skills. AI enabled cutting-edge sentiment analysis, real-time reporting assistance, and the production of complex articles. At the same time, the technology became more widely used for fact-checking and helping to combat misinformation and deepfakes. AI also has a significant advantage in news production and provides a strong editorial process. Global news organizations use AI for news gathering, content production, and news distribution and audience engagement (Manan, 2024, pp. 9–10)

The extraordinary ability of AI to process and analyze large data sets makes it a valuable asset for reporting on elections, financial markets, and sports events. AI algorithms can quickly interpret large and complex datasets to reveal trends and patterns invisible or difficult for humans to detect. Modern reporters can now unveil stories hidden between the layers of data and offer insights and perspectives to their audience with the support of strong analysis of this information (Manan, 2024, p. 24).

Using AI, allows journalists to focus on complex reporting, expand news coverage, reduce spelling errors, gather data and initial information, generates story ideas, edit material, assist with data analysis, and personalize content (Manan, 2024, p. 18). Integrating AI into journalism not only simplifies processes, but enriches the content and context of news reporting (Manan, 2024, p. 25). Using AI avatar anchors innovates the presentation of news, making it more interactive and more interesting for audiences.

On the other hand, technological changes in new media have consequences for communication workers, including greater efficiency and flexibility, lower costs, and increased production speed. However, technological change will also lead to an increasing loss of privacy and the inability of social institutions to keep pace with it (Pavlik, 1996, p. 5). Nowadays, many people are concerned that they will lose their jobs because of AI. As AI systems become capable of executing complex tasks, some experts are wondering if these systems could replace human journalists in certain areas such as routine reporting and data analysis. Nevertheless, sooner or

later, employees would be replaced by AI, which will lead to higher unemployment rates and changes in the news production and distribution process.

AI can present challenges to society. Several ethical issues have emerged because of the use of AI. Some media use to help journalists gather information and extract data. However, it will cause some problem with credibility, objectivity and accuracy of information. Therefore, journalists also have to understand how to use AI to support their journalistic works. They cannot avoid the ethical principles of journalism when they do their duties.

When tvOne avatar AI broke the rules of journalism, especially those set in Law No. 40 of 1999, Chapter 1, Verse 4, "A journalist is a person who regularly performs journalistic duties". Therefore, journalist should be a person and not a machine or artificial intelligence. However, there is a simplicity if this avatar is used as a tool and the journalist performs the production activity, and the avatar is only used to present the results of the reportage.

In addition, Chapter 12 of the Ethical Code of Journalism states "An Indonesian journalist does not plagiarize or quote journalistic works without citing the source". However, several news items on tvOne.ai do not mention the sources. This raises concerns that it undermines the integrity of the news received by the audience and poses a risk to intellectual property rights and the dissemination of personal data. Nevertheless, it is caused that tvOne has also information data had gotten by their journalists. Therefore, it is still allowed by journalistic rules.

3.2. The Quality of the Information Is Received

AI makes journalistic tasks easier by automating processes such as data analysis and verification. In addition, many news companies are using AI to organize news content. AI integration can be used to arrange articles, collect data, and make content recommendations quickly and efficiently. AI is transforming the way news is reported, analyzed, and delivered to audiences. According to Knight Foundation research, AI can increase reporting capacity. Journalists can quickly select information using a machine learning system (Aurelya, 2024).

Using AI algorithms to select and prioritize news has raised critical concerns about bias and transparency issues. In addition, credibility has become a prominent issue as audience unwittingly consume AI-generated content, sparking debates about trust and originality in journalism. AI systems may misinterpret sarcasm, cultural context, or complex sociopolitical nuances, resulting in inaccurate reporting, misinterpretation, and the risk of the widespread dissemination of misinformation (Manan, 2024, p. 27).

AI is convenient, but it cannot yet change the role of journalists. Journalists can now dig deeper into complex stories by leveraging their humanistic insights, empathy, and investigative skills in ways that were previously impossible. This is especially true in rapidly evolving environments, such as breaking news and live coverage (Manan, 2024, p. 24). Journalists bring opinions, empathy, critical thinking, and interpretation of situation that could not be imitated by artificial intelligence. In news production, ethical opinions and editorial assassination need a human role to deliver an acceptable narrative to the audience.

The media measure their performance through several elements (1) Factuality, which can be seen in the main point, information value, readability, and verifiability, (2) Accuracy, which can be seen in the verification of facts, the relevance of the news source, and the accuracy of

presentation, (3) Completeness, which is comprehensive information (4) Relevance, which is whether or not there is news value, and (5) Balance, which is a balance in reporting or impartiality.

McQuail distinguishes balance from neutrality. Balance relates to news selection and substance, whereas neutrality relates to news presentation, (6) Neutrality is often equated with balance, meaning impartiality, but the difference is that neutrality relates to the presentation aspect. Neutrality consists of sensationalisms, stereotypes, juxtapositions, and linkages (McQuail, 1992, pp. 205–224).

Based on the quality of information, the most important element is objectivity because it ensures that news is trustworthy and honest. Objectivity involves a neutral attitude toward the process of gathering, processing, and disseminating information. In addition, credibility is also important to give guarantee of the information's quality. It is impartial, means does not take sides in disputes or show bias, and it is accurate. Additionally, information should consist of the five W^s and one H; what, who, where, when, why, and how. If news includes these elements, the quality of the information improves.

In the context of news reporting, journalists verify information first because journalism requires the discipline of verification due to the potential bias caused by AI. Without verification, public trust in journalism will continue to erode. Information read by AI anchors comes from journalists in other departments who find news directly on the ground and subscribe to media agency. Then, AI anchors only read the report. AI facilitates the news delivery process.

4. CONCLUSION

The existence of AI demonstrates the diffusion of the innovation and the adoption of new ideas in the decision-making process. The rapid development of AI is enabling significant progress in journalism. AI is easy to use because it can produce different types of media content, analyzes large amount of data, and extracts information more quickly and efficiently than humans. Therefore, decision-making processes based on information can be more effective and efficient. However, using AI in journalism also creates challenges for journalists, who must deliver information accurately, objectively, factually, and quickly.

As a journalistic product, the information provided by the journalist must fulfill news requirements and have newsworthy values. Furthermore, it should consist of five Ws and one H; what, who, where, when, why, and how. Several broadcasting media use AI to create more interesting content. However, there is some discussion about ethical principles of journalism.

According to Law No. 40 of 1999, a journalist is defined as someone who regularly performs journalistic duties. Therefore, a person who performs journalistic duties must be human, but AI is permitted as a tool for these duties.

The AI avatar anchor is a tool is used to read the journalistic reports and facilitate press companies. In addition, it was mentioned that an Indonesian journalist does not plagiarize or quote journalistic works without mentioning the source. Journalistic works should fulfill the elements of journalism and news requirements, such as verification to maintain objectivity and accuracy. The use of AI can be applied with the human power because human has different advantages that can not be changed by machine.

The strength of human in deep thinking analysis, empathy, and social and psychological contextual understanding enhance by AI will be a new source of strength. The journalists must be equipped with the ability to use AI and understand the rules to use. Moreover, there should be restriction on the use of AI in certain situation. The dicipline of verification is important to keep the accurate and objective information.

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