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Radio Broadcasting with Artificial Intelligence: A Case Study on Radio Mustang Jakarta

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ABSTRACT

This research analyses how the use of Artificial Intelligence (AI) in radio broadcasting by Radio Mustang Jakarta can change the landscape of the broadcasting industry. Through qualitative research, this case study examined radio broadcasting technology development and AI-based innovation in radio programmes. Data was collected through interviews, documentation, and literature studies with triangulation in the data processing. The results revealed that radio is strongly committed to keeping up with advances in information and communication technology. AI in the broadcasting industry can improve the quality and efficiency of broadcasts. In addition, AI technology can revolutionise the broadcasting industry by introducing an AI broadcaster named Aimee through an innovative production process.

Keywords: Radio Broadcasting, Artificial Intelligence, Technology Innovation, Radio Industry

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INTRODUCTION

Human working patterns and ways of life have been greatly influenced by advances in information and communication technology over several eras, from the creation of the first computer to the current information age. Therefore, radio broadcasting practitioners must respond to changes in the radio industry as both a challenge and an opportunity (Lientz, 2011). To use the sophistication of today's communication and information technologies, appropriate standards are required to help people communicate with each other. To use these technologies, one must change their perspective and understand the new needs. They must also become producers of information technology and not just consumers (Priestly, 2012). Various aspects of life have been affected by the development of information systems, such as ways of working, communication, and business activities. A more sophisticated and efficient information system will help users develop (Nagamalai et al., 2011).

Along with the sophistication of technology, radio broadcasting needs to make changes to adapt to the progress of this digital age (Zehir et al., 2015)Broadcasting programmes need to be innovated by updating broadcast content technologically and creatively. This innovation may not be popular yet, but it is required by conventional radio stations for digital creativity through unique broadcast programmes using robot or machine radio broadcasters with AI data-based technology (Cardon, 2018).

Currently, the development and utilisation of technology in Indonesia focuses on AI technology. Not least from the radio broadcasting sector, AI in Indonesia is expected to significantly impact the nation's life. In addition, the government has drafted a National Strategy on Artificial Intelligence for 2020-2045. This strategy aimed to ensure that the development and application of AI correspond to the prevailing laws and morals. In addition, the telecommunications industry is encouraged to increase AI technology, which can improve the service quality provided to the public (BPPT, 2020).

AI radio announcers are artificial intelligence technologies used to replace humans in radio programmes. They deliver messages with the right intonation and expression through text-to-speech technology. Radio broadcasting with AI has good and bad effects on the broadcasting industry. In general, it helps reduce the hesitation of human work, but it will not replace the role of humans in the radio broadcasting industry.

Due to competition from digital platforms and changing listener behaviour, the radio broadcasting industry today faces increasingly complex issues. Radio stations must constantly innovate and adopt the latest technologies to stay relevant. AI is one such technology that holds great promise. This case study explored how Radio Mustang Jakarta tackled the problem by launching the AI broadcaster called Aimee. This study also looked at how AI improved production

efficiency, customised content, and increased listener engagement. The research also identified the rising issues and opportunities when the broadcasting industry implements AI.

In the past few decades, AI has grown rapidly. With the development of new, faster hardware for deep learning and a growing number of initiatives towards a digital research data management infrastructure, as well as a culture that promotes open data, open source, and open science, AI-driven molecular informatics continues to grow (Brinkhaus et al., 2023). However, due to the advances in computing technology and algorithms, AI can do more complex things nowadays. For example, AI can make predictions or decisions without being explicitly programmed by learning from large amounts of data. AI has helped the radio media industry in many ways, such as content personalisation – AI can analyse listener preferences and provide appropriate music or show recommendations; automation of tasks – AI can automate everyday tasks such as creating playlists, editing audio, and scheduling broadcasts; and increased efficiency – automation allows radio stations to reduce operational costs and produce more efficiently. The development of radio information and communication technology, AI-based radio program innovations, AI use in radio programs, and the process of creating AI radio broadcasters are the main issues of the current study.

Previous research literature states that AI significantly improves the efficiency of broadcast content production. Through predictive analytics and deep learning, AI can identify topics that audiences are interested in, helping content producers respond to trending preferences and interests. This increases content relevance and media competitiveness (Madhini et al., 2024). AI enables more sophisticated recommendation systems, where algorithms can analyse user behaviour to serve content that matches individual preferences. It helps increase audience engagement and user satisfaction (Nisa & Suwaidi, 2023). Overall, past research shows that the application of AI in industries not only improves efficiency and productivity but also enables better-personalised content for listeners. However, issues such as ethical concerns and implementation costs should also be considered during the adoption process of this technology.

This research focuses on the pursuit of truth through science. Study, experiment, empirical, rational, general, cumulative, and experience are sources of knowledge systematically organized. This knowledge is conveyed in a complete explanation of real-world facts with simple and easy-to-understand terms. Communication scientists are a broad and interdisciplinary field of social science. Included in this is thinking about marketing communication for the sustainability of the radio company, which can survive by building communication relationships with consumers (Finne & Grönroos, 2009).

Radio station operators must understand that to run a radio station today,

they must ensure that radio broadcasters not only use humans transmitted through conventional radio channels but also additional services, such as internet access. To guarantee stable and good internet communication, a competent internet service is required. The larger the bandwidth used, the faster the information accessed from the internet (Utami, 2020). The communication process is developed through computer and internet technology, where various radio programs can be created. Experts argue that radio broadcasting is a way to build social and communication relationships. With the development of information and communication technology, it is highly possible to create AI radio broadcasters for creative adaptation in different types of broadcasts based on visibility and synchronicity within the community. Radio broadcasts information, education, entertainment, and advertisements. To do it well, radio stations can take advantage by creating AI radio announcers to replace humans in radio programs.

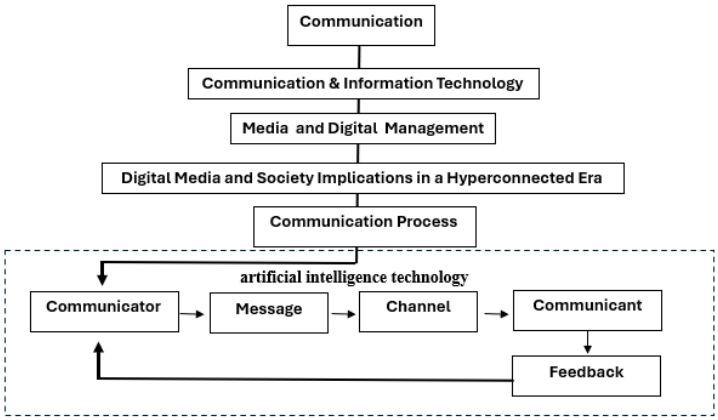

Figure 1: The framework used in the research
Source: Processed from various sources

This research employed a qualitative approach to examine the utilization of AI radio broadcasters by a traditional radio station. The study explored various perspectives, including information and communication technology development, innovation in radio broadcasting programs, the utilization and process of AI technology in radio, and the impact on the digital era radio business. The current case study emphasized the use of AI radio broadcasters. It gathered and analyzed data to understand the research case flexibly. The results of this research explain from the perspective of the development of information and communication technology, innovation in radio broadcasting programs, the utilization and process of AI technology in radio, as well as the impact on the radio business in the digital era. The current research was conducted in Mustang 88 FM Jakarta. Data was collected through interviews, observations, listening to and watching AI radio broadcasts, and searching for documentation data. This data analysis was

conducted qualitatively and referred to various sources using triangulation of data collection techniques. The collected data was analysed using data reduction, data visualization, and conclusion drawing.

RESULTS AND DISCUSSION

The development of radio broadcasting technology

The development of information and communication technology has transformed radio, one of the oldest mass media. Radio has evolved from a simple communication tool that could only transmit sound to a feature-rich and interactive multimedia platform. The invention of radio in the late 19th century made it possible to communicate wirelessly from one place to another. Subsequently, AM and FM dominated: AM (*Amplitude Modulation*) and FM (*Frequency Modulation*) radio broadcasts have been the standard for many years. Both offer relatively clear voice broadcasts and one-way content. The emergence of radio as a mass media facilitates access to information for its users. Radio has advantages that other mass media do not have. Radio has a wide enough range so that information conveyed through radio can be directed to all corners of the world, especially with its development now supported by the use of the Internet which makes it easier for users to access online radio. The history of radio was first developed by Guglielmo Marconi, an Italian expert. Until now there are many types of radios and various tools used in radio broadcasts in broadcast studios (Winda Kustiawan, et al., 2022).

The digital era saw a quality improvement: digital technology made the sound clearer and noise-free. In addition, digital radio has features such as RDS (*Radio Data System*), which displays text information and allows the broadcast of additional data such as text and images. Satellite technology also allows radio broadcasts to reach a wider area, including remote areas. The Radio Data System (RDS) provides a dedicated low-speed digital broadcast channel for radio stations selected by the FM receiver. RDS can be used to enable diverse new applications and enhance existing ones (Bârcă, 2022). The world of radio has changed dramatically as a result of advances in information and communication technology, which is all activities related to the processing, manipulation, management, and transfer of information between media (Roza et al., 2023). Radio has evolved into more than just a one-way communication tool; it is now a feature-packed and interactive multimedia platform. Despite this, analogue radio remains popular among listeners, especially those who like a more conventional radio listening experience. As one of the oldest mass media, radio has shaped and spread popular culture.

Since its inception, radio has been an effective tool to convey values, lifestyles, trends and music to the public. Radio is a communication medium that must be able to compete with the massively rising new media today (Damayanti

et al., 2024). It is a fact that radio has many major influences on popular culture, one of which is that it is the main medium for musicians to introduce their work to a wider audience (Ghafara, 2016). Many famous artists first rose to fame through radio. In addition, radio often sets trends in popular music. Additionally, the music format is considered a key source of engagement between stations, advertisers, and listeners, at the intersection of relationships with the music industry (Homan, 2007). Radio can influence listeners' musical tastes by playing certain songs repeatedly. The creation and spread of new music is also aided by radio. Last but not least, radio can influence public attention by highlighting certain issues. It can spread certain values to the public through talkshows and news (Shehata & Strömbäck, 2021). Political propaganda can use radio to influence public opinion and impact language and lifestyle. Slang often appears on the radio, and then spreads to the wider public. Radio can influence people's lifestyles, such as fashion, food, and hobbies. It has also been used in social movements for organising movements and disseminating information. It can accelerate social change by spreading new ideas.

Radio has been and will continue to be a very important medium in shaping popular culture. This will not change even though technology is rapidly advancing and new media are emerging (Richard Campbell, 2016). Radio is still relevant today as it can create emotional connections with listeners and disseminate information quickly. Although advancements in information technology do not negatively impact radio broadcasting, radio still has loyal fans and features that cannot be replicated by visual media. Radio will also become stronger by adapting and using multiple platforms such as podcasts and social media. Additionally, it has audio-based features that allow listeners to enjoy it while engaging in activities, which other media do not have.

As one of the leading private radio stations in Indonesia, Radio Mustang Jakarta has shown a strong commitment to keeping up with advancements in information and communication technology. Mustang has utilized various new technologies to enhance broadcast quality and listener experience.

Field research findings indicate that the digitization of broadcasts through online streaming is the latest technological innovation at Mustang 88 FM radio. Listeners can enjoy broadcasts anywhere and anytime through the online streaming service of Radio Mustang via the website and mobile application. Mustang Radio also creates various podcasts on diverse topics, reaching a wider audience and providing listeners with the flexibility to listen to music according to their schedule. Additionally, it collaborates with digital music platforms like Spotify to expand its music reach and offer listeners more personalized music recommendations. Radio Mustang also uses social media to interact with listeners. Radio Mustang is active on various social media platforms such as Instagram, Twitter, and Facebook to interact with listeners in real-time. Besides, it has a social

media application, WhatsApp, which allows listeners to receive messages and request songs. Radio Mustang still provides SMS services to communicate with older listeners, even though SMS technology is becoming increasingly rare.

In addition, the manager of Mustang Radio explained that the impact of using technology is an increase in its reach. Digital technology allows Mustang Radio to reach a wider audience in Jakarta, Indonesia, and even around the world. A better listening experience is also available, as various interactive and personalisation features allow listeners to feel more connected to the radio station and have a more enjoyable listening experience. In addition, the use of technology can enhance operational efficiency, such as data management and content production. Technology also enables Mustang Radio to create more innovative and creative content, such as podcasts, videos, and other interactive content.

From the results of the survey to the location, Mustang Jakarta radio broadcasts can be enjoyed not only through analogue broadcasting technology at a frequency of 88 MHz but also through internet streaming with various applications as a single station and collaborative station applications. Here are some collaborative websites collaborated with Mustang Jakarta radio.

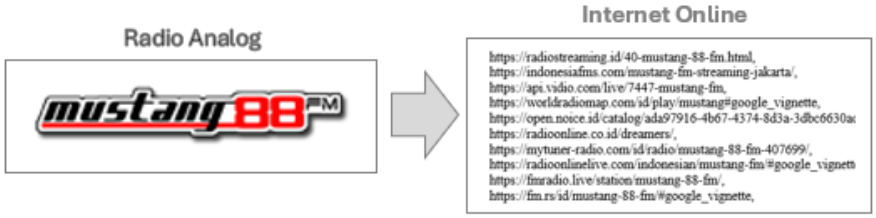

Figure 2: Mustang Radio Online Media

Source: Processed from various sources

In addition, the research findings also revealed various collaborations with international platforms available for listening to online radio, including PCRADIO, which offers hundreds of radio stations in various genres and supports high-quality streaming even with a slow internet connection. This can be accessed through a headset and is available on Google Play. Then there's Live365, a platform that allows you to create online radio stations and discover thousands of stations across various music genres and talk shows. It also offers monetization programs to generate revenue and reduce streaming costs. Then, in addition to broadcasting live on CNN, FOX News Radio, and MSNBC, TuneIn offers podcasts, news, sports, music, audiobooks, and free internet radio. It also has more than 100,000 AM/FM radio stations. Additionally, iHeart provides access to favourite music, podcasts, and radio stations for free. It offers live radio stations

from across the country and custom radio stations based on favourite artists. So, with the growing development of online radio, it is not surprising that many analogue radio stations that are still operating now complement and anticipate the dynamic developments in information and communication technology by integrating analogue with online (Ismandianto et al., 2022). Radio Mustang 88 FM Jakarta consciously keeps up with this technological development well.

One of the challenges and opportunities in the future, according to the managers of Mustang 88 FM, is the competition with music streaming platforms. Mustang Radio must continue to innovate to remain relevant amidst the competition with music streaming platforms like Spotify and Apple Music. Moreover, it is important to understand changes in listener behaviour. Radio Mustang continues to observe changes in listener behaviour and adjusts its strategy to remain relevant. Next, Mustang Radio must wisely utilize listener data to improve service quality, maintain data privacy, and collaborate with influencers on social media platforms.

Innovation of AI-based radio programs

AI in the broadcasting industry can enhance the quality and efficiency of broadcasts, but we must consider the dangers and challenges. With careful planning and strong ethics, we can utilize AI responsibly and maximize its benefits for society. AI has great potential to fundamentally change the radio industry. Radio stations can make the listening experience more engaging and personal by utilizing advanced AI features. However, it is important to consider the challenges and risks associated with the use of AI and to develop appropriate policies and regulations to ensure that this technology is used safely. AI has emerged from the realm of science fiction and has become a very real tool that can help society tackle many problems, including the challenges of news industry (de-Lima-Santos & Ceron, 2022).

AI has entered many industries, including the broadcasting industry. The application of AI in radio programs is one of the interesting innovations. It enables radio to provide a more personal, interactive, and innovative listening experience by processing information, learning from data, and creating creative content. The application of AI has a significant positive impact on the creative industry in Indonesia. It has enriched the creative process, increased production efficiency, and expanded the market (Hanifa, Ahmad Sholihin, 2023). AI can function as a virtual host and present news, music, and other information with a natural voice and distinctive style. Its algorithms can learn listener preferences and offer more accurate and relevant music recommendations. This helps listeners discover new music they enjoy. AI can create dynamic radio content, such as news summaries, weather reports, and even short stories. Content can be tailored to the interests of the audience, time, and place. Through voice commands or text messages, listeners can interact with radio programs in real time. AI can

understand and respond to listeners' questions or requests quickly and accurately. It enables radio to present highly personalized content for each listener. For example, radio programs can adjust the selection of music, news, and advertisements according to the profile of their listeners.

AI enables radio to innovate in many ways, but it also caters several challenges, such as the need to enhance AI voices to sound more emotional and natural. Though AI can generate creative content, it is difficult to fully match human creativity. Additionally, the use of AI in radio raises ethical questions, such as data privacy and public opinion manipulation. AI has great potential to transform the face of radio in the future. With the ability to process information, learn from data, and generate creative content, AI can make radio more engaging, interactive, and relevant to listeners. AI has great potential to change the way we listen to the radio, especially for the younger generation who are more accustomed to digital technology. Some ways AI can help people listen to the radio better is by looking at their music preferences based on their listening history then suggesting suitable songs or playlists. AI can customize news content, shows, or podcasts according to a person's interests, so listeners don't have to search for relevant information (de-Lima-Santos & Ceron, 2022).

In addition, it is very interactive, allowing listeners to control the radio through voice commands. They can request a specific song, ask about the latest news, or adjust the volume. The use of AI-based chatbots can also interact in real-time with listeners, answer questions, or even start conversations. In addition, it can produce interesting and unique music visualizations and create more realistic sound effects, as if the sound is coming from various directions. This enhances the music-listening experience. AI can automatically create podcasts, such as news summaries or fictional stories, and can create new music or remixes of existing music. Through comments on social media or streaming platforms, AI can analyze listeners' feelings towards radio programs.

From the literacy study through comments on social media or streaming platforms, AI can analyze listeners' feelings towards radio programs. Algorithms such as Naïve Bayes or lexicon-based methods are used to classify comments into sentiment categories (positive, negative, or neutral) based on context and meaning (Oktavia & Isnain, 2024). AI has great potential to revolutionize the radio industry and make radio more appealing to the younger generation. With the ability for personalization, interactivity, and creativity, AI can make the radio listening experience more enjoyable and meaningful. The radio industry is expected to become more innovative in creating high-quality products favoured by either the national or international markets. In facing challenges such as the television, the internet, and the digitalization era, radio is referred to as a resilient industry platform. Digitalization in broadcasting media is taking on a new form as there is speculation that more broadcasting stations will switch to using AI presenters in

their journalistic operations to become more efficient in their social responsibilities (Oyedokun, 2023).

The research results in this digital era also complement its broadcast distribution to social media platforms such as Instagram, TikTok, Twitter, and YouTube with various radio content creativity that suits each medium, as shown in Figure 3 below:

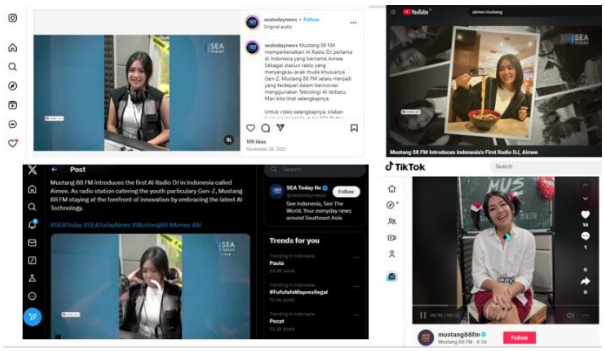

Figure 3: Social Media of Radio Mustang 88 FM Jakarta

Source: https://www.instagram.com/mustang88fm/p/C0Q7zSirA6c/
https://www.youtube.com/watch?v=kNv1Mn93vYY,
https://x.com/seatodaynews/status/1726465393680863373, https://www.tiktok.com/@mustang88fm

Because the rapid development of information technology does not make radio broadcasts disappear, radio broadcasts will not disappear as long as radio can adjust to the digital era (Ajisafe, Ibikunle Olayiwola and Dada, 2023). Radio has an enjoyable sound quality on the move, which other media do not provide. The results showed that Radio Mustang Jakarta continues to innovate in broadcasting to get closer to changes in broadcast programmes for the listeners. Artistic radio programmes include any show whose production process emphasises artistic elements and aesthetic values rather than facts. In the press industry, such as radio, AI has been used to reduce human errors, such as gathering information and organising information flow. However, AI is not used entirely on its own; a human team helps to organise and control information, as Radio Mustang 88 FM does to reduce hesitation and improve the radio company's business processes.

The manager of Mustang 88 FM radio said that some of the challenges in the future development of AI broadcasters are natural voice quality, which includes emotional expression, intonation variation, and context adjustment. Furthermore, a deep understanding of language includes language nuances, cultural context, and language ambiguity. Furthermore, creativity and improvisation, which includes original thinking and adaptation to situations,

ensure that AI broadcasters do not reinforce existing biases in the data. In addition, the managers of Mustang 88 FM realise that to address these issues, continuous research and development in the field of AI is required, especially in the areas of natural language processing, speech synthesis and machine learning.

The manager of Mustang 88 FM also said that the development of AI broadcasters for social media is an exciting and potential move. With the development of AI technology, AI broadcasters will not only be able to broadcast radio programmes but also interact directly with audiences through social media platforms. However, this development also presents unique challenges that need to be overcome. The development of AI broadcasting social media presents challenges and considerations such as personal branding, consistency, creative content, communication ethics, and regulations. It has the potential to increase audience engagement and reach a wider audience, including those who are hard to reach through traditional media. Social media development for AI broadcasters can be an innovative and engaging platform for users if done with careful planning and the right technology.

AI technology in Radio Mustang Jakarta

The use of AI as a radio host is an exciting and promising innovation. We can now see a paradigm shift in broadcasting due to advances in AI technology. With a natural voice and the ability to interact, AI hosts offer new opportunities to deliver more interactive and personalised radio content (Harliantara, 2024). The use of AI as a radio host has the advantage that radio broadcasts can be on air for 24 hours without interruption. AI can learn listener preferences and present content that better suits individual interests. It can automatically perform routine tasks such as reading the news or playing music, giving human labour more time to do more creative things. It can interact with listeners in real-time, answer questions, and make suggestions. Compared to human hosts, the voice quality and delivery style of AI hosts are more consistent.

Although AI can mimic human emotions, creating a deep emotional connection like a human host is difficult. AI still lacks creativity and improvisation, which are essential for creating engaging radio content. Ethical questions regarding the use of AI in radio broadcasting include the possible manipulation of public opinion and data privacy. However, using AI as a radio host is the beginning of a smarter and more personalised future for broadcasting. AI has enormous potential to change the way we listen to radio.

In addition, creative radio programmes use AI to help listeners interact and provide fun songs. Radio broadcasting practitioners can more easily communicate with the public with AI. Listeners can fill in data for online quizzes using QR codes. Currently, private radio station Mustang 88 FM is starting to use AI. Radio Mustang Jakarta caters to young people, especially Generation Z, and keeps up with the latest technological trends, such as AI. Aimee is the first Indonesian AI

broadcaster. Aimee is not only an AI broadcaster but also a symbol of the Gen Z lifestyle: energetic, loving hanging out, listening to music, and watching films. From December 2023, Aimee has been a part of the Mustang Gang, as fans of Mustang 88 FM call it. Aimee hosts the Mustang Hangout programme every weekend from 6:00 pm to 8:00 pm, and this creative and innovative effort is expected to give a new feel to the Mustang Radio programme. In addition, Aimee's voice can be heard on programmes that disseminate news information for young people.

Figure 4: AIMEE, the first AI broadcaster in Indonesia created by Radio Mustang Jakarta

Source: https://gen987fm.com/read/489/aimee-radio-dj-pertama-di-indonesia

The process of creating an AI Radio Broadcaster

In an increasingly connected and data-filled world, AI has become one of the main forces driving technological transformation. AI focuses on the development of computer systems that can perform tasks requiring human intelligence (Mukhlis, 2024). Machine learning, natural language processing (NLP), and voice engineering techniques are essential components in the creation of AI radio broadcasters. It started with collecting many voice recordings from professional broadcasters with various styles and intonations. The audio recordings are converted into text to train the AI model and eliminate noise, transcription errors, and irrelevant data. To achieve this goal, we must choose an appropriate language model, such as GPT or Transformer, which can train the model with the prepared

text data so that the model can understand the text structure. The next step is to combine the language model and the voice model, which allows the model to generate relevant text and convert it into natural voice by adjusting the model parameters to produce output that matches the character. Then, we can create a platform or application that allows AI models to interact with users. This will be used to integrate the AI model into the radio broadcasting system.

Testing to assess voice quality, conversation fluency, and context understanding is also very important. Additionally, evaluating the model's performance by looking at the degree of similarity to the original voice, information completeness, and conversation naturalness. For news anchors, AI can deliver news with the correct voice and intonation. Additionally, biased youth enable music events with AI that can recommend music, provide information about artists, and interact with listeners. AI can also answer listener questions and provide information about traffic or weather.

The application of AI is expected to open new opportunities for innovation management and overhaul innovation practices in organizations (Füller et al., 2022). The most important feature of an AI broadcaster for it to be accepted by listeners is that it makes them feel like they are interacting with a real human. The features of the AI broadcaster that listeners prefer are that the AI broadcaster must be able to naturally mimic human intonation and tone of voice, making it sound expressive and not monotonous. Additionally, every word must be pronounced clearly and correctly, without sounding stiff or robotic, and the AI broadcaster must be able to change its tone of voice to convey different emotions, such as happiness, sadness, or anger.

AI broadcasters must be able to accurately recognize voice commands, even if spoken with an accent or in a noisy environment. AI broadcasters must also be able to understand the meaning of questions or requests posed by listeners and provide responses appropriate to the situation. AI broadcasters must be able to improvise in conversations so that they do not feel stiff and boring. Listeners will also prefer AI broadcasters who can make jokes or provide funny comments. AI broadcasters can make the listening experience more enjoyable, unique, and interactive by combining all these features.

The research results on the process of creating an AI broadcaster are mentioned by an IT planner at Radio Mustang Jakarta. The first step begins with a concept planning of the AI broadcaster as a lifestyle symbol representing the energetic Gen Z, who enjoy hanging out, listening to music, and watching movies using the D-ID platform. The second step is to input data into the platform or software to create the AI broadcaster. The third step is to arrange the content where the AI broadcaster can create engaging presentation content according to the planned concept using AI models and algorithms (AI).

The fourth step is selecting images and graphics where the AI broadcaster

uses images and graphics appropriate for the presentation material. The fifth step is selecting animations and transitions where the AI broadcaster uses the right animations and transitions to make the presentation more engaging and interactive. The sixth step is delivering the presentation where the AI broadcaster uses AI technology to control movements according to the command positions input into the text. Finally, the seventh step is human control where broadcast values cannot be put into words, therefore the use of AI broadcasters in the radio industry must be controlled by humans.

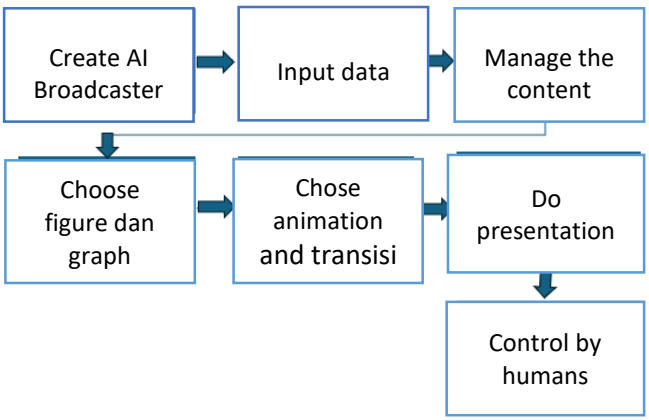

Figure 5: Stages of creating the AI broadcaster for Radio Mustang Jakarta
Source: Researcher's processing (Harliantara, 2024)

In the implementation of the AI broadcaster, presentations and speech interactions in the broadcast program are conducted to adjust speech style, intonation, and expression using text-to-speech technology. In this case, the AI broadcaster can mimic human movements and facial expressions while moving. Besides, the AI system can read and process data quickly and accurately, accelerating the production of informational material. An AI broadcaster with artificial intelligence can also read news texts with the right expression and intonation. The technology of AI broadcasting is created to make AI more known to the public and to become a symbol of change in radio broadcasting in the era of high media competition with the advent of the internet and digitalisation. Radio broadcasting that uses AI may positively or negatively impact the broadcasting industry. The possible outcome is efficiency and productivity. AI algorithms can help collect, analyse, and deliver relevant and timely content, thereby reducing the costs and time required to deliver content.

Crowdsourced markets can surpass the pool of human research subjects and become AI-managed workplace models, facilitating timely behavioural research and strong predictions about human-centred work design and organisation (Dong et al., 2024). Therefore, the use of AI in broadcasting can help

Gen Z—digital natives—enter the market. This can help younger audiences become more engaged and generate positive innovations in the company. The critical consideration is the role of human control. Because ethics and journalistic standards are complex, establishing guidelines for AI use in journalism is challenging. Therefore, humans should retain control over the use of AI to ensure adherence to the standards. Another consideration is the impact on intellectual creativity. Intellectual workers such as reporters, translators, and editors may be vulnerable to AI automation. However, since AI is a technological advancement that requires human oversight, creative workers must view AI as a complement rather than a replacement.

In general, artificial intelligence, on the one hand, provides great benefits to modern human life. On the other hand, the magnitude of these benefits leaves significant challenges regarding their impact on human dignity as an important element in discussions about humanity (Michael Reskiantio Pabubung, 2023). AI can help preserve human jobs like radio broadcasting, but it will not replace the human role in the radio broadcasting industry.

CONCLUSION

Mustang Radio Station has implemented various technological innovations over time to improve broadcast quality, expand listener reach, and enhance audience interaction. With Internet radio, Mustang can broadcast content via live streaming through a website or mobile application. Social media is also used to interact in real time with listeners, share the latest information, and promote radio shows. With AI, Mustang Radio has become a pioneer in the Indonesian broadcasting industry. By introducing an AI broadcaster, Aimee, Radio Mustang has created a breakthrough in the broadcasting industry. This innovation marks a new chapter where AI technology delivers more personal and interactive radio content. Radio Mustang Jakarta has demonstrated that AI has great potential to revolutionise the broadcasting industry with content personalisation, voice enhancement, and more interactive content. By introducing an AI broadcaster, this radio station has opened new horizons in content personalisation, production efficiency, and interaction with listeners. The broader impact is the transformation of the broadcasting industry. AI can potentially change the overall landscape of the broadcasting industry, enabling radio stations to provide a more interactive and personalised listening experience.

REFERENCES

Ajisafe, Ibikunle Olayiwola and Dada, D. (2023). Radio broadcasting in the digital age: Adapting to the challenges of the 21st century. International Journal of Advanced Mass Communication and Journalism, 4(2), 36–44.

https://www.masscomjournal.com/

Bârcă, C. D. (2022). Radio data system applications. CORE. https://core.ac.uk/outputs/6552434/?utm_source=pdf&utm_medium=banner&utm_campaign=pdf-decoration-v1

BPPT. (2020). Strategi Nasional Kecerdasan Artifisial Indonesia 2020 - 2045. Badan Pengkajian Dan Penerapan Teknologi, 194. https://ai-innovation.id/server/static/ebook/stranas-ka.pdf

Brinkhaus, H. O., Rajan, K., Schaub, J., Zielesny, A., & Steinbeck, C. (2023). Open data and algorithms for open science in AI-driven molecular informatics. Current Opinion in Structural Biology, 79(February), 102542. https://doi.org/10.1016/j.sbi.2023.102542

Cardon, A. (2018). Beyond artificial intelligence: From human consciousness to artificial consciousness. In Beyond Artificial Intelligence: From Human Consciousness to Artificial Consciousness. wiley. https://doi.org/10.1002/9781119550983

Damayanti, R., Santoso, T. S. I., & Tecoalu, M. (2024). Eksistensi Radio Melalui Konvergensi Siaran di Era Digital. Jurnal Pustaka Komunikasi, 7(1), 125–135. https://doi.org/10.32509/pustakom.v7i1.3592

de-Lima-Santos, M. F., & Ceron, W. (2022). Artificial Intelligence in News Media: Current Perceptions and Future Outlook. Journalism and Media, 3(1), 13–26. https://doi.org/10.3390/journalmedia3010002

Dong, M., Bonnefon, J. F., & Rahwan, I. (2024). Toward human-centered AI management: Methodological challenges and future directions. Technovation, 131(January), 102953. https://doi.org/10.1016/j.technovation.2024.102953

Finne, Å., & Grönroos, C. (2009). Rethinking marketing communication: From integrated marketing communication to relationship communication. Journal of Marketing Communications, 15(2–3). https://doi.org/10.1080/13527260902757654

Ghafara, G. F. (2016). Promosi Lagu–Lagu Band Indie Indonesia Melalui Media Radio Streaming "Ruru Radio." http://repository.unair.ac.id/id/eprint/67825

Hanifa, Ahmad Sholihin, F. A. (2023). Peran AI terhadap kinerja industri kreatif di indonesia. Journal of Comprehensice Science, 2(7), 2159–2170. https://doi.org/10.59188/jcs.v2i7.446

Harliantara, H. (2024). Artificial Intelligent Opportunities for Creativity and Innovation of Future Radio Translators. Jurnal Syntax Transformation, 5(6), 908–918. https://doi.org/10.46799/jst.v5i6.967

Homan, S. (2007). Classic Hits in a Digital Era: Music Radio and the Australian Music Industry. Media International Australia, 123(1), 95–108. https://doi.org/10.1177/1329878X0712300110

ismandianto ismandianto, Suyanto Suyanto, Khasna Latifah, M. M. (2022). Transformation of Radio Technology in The Digital Age. Nyimak : Journal of Communication, 6(1), 115–130. https://doi.org/10.31000/nyimak.v6i1.5547

Lientz, B. P. (2011). Information Technology Project Management. In Information Technology Project Management. https://doi.org/10.1007/978-0-230-34500-3

Madhini, I. T., Ni, N., & Saudi, Y. (2024). Penerapan Kecerdasan Buatan (AI) dalam Produksi Konten Penyiaran : Peluang dan Tantangan. Seminar Nasional Paedagoria, 4, 612–620.

Michael Reskiantio Pabubung. (2023). Era Kecerdasan Buatan dan Dampak terhadap Martabat Manusia dalam Kajian Etis. Jurnal Filsafat Indonesia, 6(1), 66–74.

Mukhlis, I. R. (2024). Algoritma Pembelajaran Mesin (Dasar , Teknik , dan Aplikasi) (Issue April).

Nagamalai, D., Renault, E., & Dhanuskodi, M. (2011). Trends in Computer Science, Engineering and Information Technology: First International Conference on Computer Science, Engineering and Information Technology, CCSEIT 2011, Tirunelveli, Tamil Nadu, India, September 23-25, 2011. Proceedings. Communications in Computer and Information Science, 204 M4D.

Nisa, N. A. A., & Suwaidi, R. A. (2023). Analisis Potensi Dampak Artificial Intelligence (AI) terhadap Efisiensi Manajemen Operasional: Tinjauan Literatur. Indonesian Journal of Social Sciences and Humanities, 3(2), 93–97.

Oktavia, I., & Isnain, A. R. (2024). Analisis Sentimen Opini Terhadap Tools Artificial Intelligence (AI) Berdasarkan Twitter Menggunakan Algoritma Naïve Bayes. Jurnal Media Informatika Budidarma, 8(2), 777. https://doi.org/10.30865/mib.v8i2.7524

Oyedokun, I. (2023). Effects of adopting Artificial Intelligence Presenters in Broadcasting on Audience Perception and Gratification of Broadcast Content. August. https://doi.org/10.13140/RG.2.2.32818.99529

Priestly, D. (2012). Entrepreneur Revolution: How to develop your entrepreneurial mindset and start a business that works. European University Institute, 2, 2–5. https://eur-lex.europa.eu/legal-content/PT/TXT/PDF/?uri=CELEX:32016R0679&from=PT%0Ahttp://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52012PC0011:pt:NOT

Richard Campbell, C. R. M. and B. F. (2016). Media and Culture: Mass Communication in Digital Age. Media and Culture.

Roza, W., Yesi Guspita Sari, Bera Eka Putra, & Desi Armi Eka Putri. (2023). Pemanfaatan teknologi informasi dan komunikasi (tik) sebagai media pembelajaran di dunia pendidikan. Jurnal Binagogik, 10(2), 89–98. https://doi.org/10.61290/pgsd.v10i2.426

Shehata, A., & Strömbäck, J. (2021). Learning Political News From Social Media: Network Media Logic and Current Affairs News Learning in a High-Choice Media Environment. Communication Research, 48(1), 125–147. https://doi.org/10.1177/0093650217749354

Winda Kustiawan, Ja'far, Amran Sahputra Tanjung, Ali Akbar Siregar, Azbar Rifa'i, A. M. P. (2022). Sejarah singkat radio, format, perangkat siaran, revolusi serta keunggulan dan kelemahannya. Jurnal Ilmiah Teknik Informatika Dan Komunikasi, 2(3), 85–90. https://journal.sinov.id/index.php/juitik/article/view/350

Zehir, C., Can, E., & Karaboga, T. (2015). Linking Entrepreneurial Orientation to Firm Performance: The Role of Differentiation Strategy and Innovation Performance. Procedia - Social and Behavioral Sciences, 210, 358–367. https://doi.org/10.1016/J.SBSPRO.2015.11.381