

Danilo Araña Arao
Weng Marc Lim
Huey Fen Cheong
Editors

A hand holding a smartphone displaying a video call between two women. The background is a blurred image of a person's face, and the overall color scheme is a gradient from teal to red.

Future of Media in Asia

Artificial Intelligence,
Digital Technology and Media Practice

 Springer

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About the Editors

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Editors' Note

The clusters of future studies in each chapter are based on Fergnani (2019, 2020), who identified six (6) key research/thematic clusters from reviews of future studies since 1968: “corporate foresight; past and futures; humanity at the limen; environmental futures; post-normality and complexity, and technological trends”. While the chapter topics present different aspects of media in Asia, the clusters of future studies show different dimensions of futures and future studies.

References

- Fergnani, A. (2019). Mapping futures studies scholarship from 1968 to present: A bibliometric review of thematic clusters, research trends, and research gaps. *Futures*, *105*: 104–23.
- Fergnani, A. (2020). Mapping fifty years of futures studies scholarship (1968–2017). In R. Slaughter & A. Hines (Eds.), *The Knowledge Base of Futures Studies 2020* (pp. 24–47). US: Association of Professional Futurists and Foresight International.

Part I
Artificial Intelligence

Chapter 4

Navigating New Realities: The Potential of Generative AI's Roles in Malaysian Creative Industry



Cluster of Future Studies: Technological Trends

Johari Abdullah , Hasnizam Abdul Wahid,
and Muhammad Jameel Mohamed Kamil 

Abstract This chapter presents an initial investigation into the potential transformative impact of Generative Artificial Intelligence (AI) on Malaysia's creative media industry, emphasizing its emerging integration and potential implications across various sectors such as digital art, film, music, and interactive media. The study employs a conceptual approach, supplemented by case studies, to illustrate how Generative AI could revolutionize content creation processes and enhance audience engagement through innovative technology applications. Additionally, the chapter explores key areas where AI technologies might foster new forms of artistic expression and optimize production workflows, indicating significant shifts in both economic and social landscapes within the creative sectors. It addresses crucial ethical concerns, focusing on challenges related to authenticity, copyright, and the risk of cultural homogenization. The need for stringent regulatory frameworks to manage intellectual property rights in the era of AI-driven content creation is highlighted as a primary consideration. Furthermore, the chapter discusses the economic impacts of AI, highlighting the dual potential for increasing productivity and causing job displacement in traditional creative roles. The conclusion points towards future trends in AI integration, suggesting that ongoing technological advancements could offer more personalized and immersive media experiences. This initial exploration aims to provide academics, industry professionals, and policymakers with insights

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into the nascent state of AI within the Malaysian creative media landscape. It underscores the strategic importance of developing an AI-inclusive innovation ecosystem that not only leverages AI's potential to enhance the creative industries but also ensures that such advancements uphold cultural integrity and contribute to sustainable economic growth.

Keywords Generative AI · Creative media · Digital transformation · AI ethics · AI innovation · Interactive media technology

4.1 Introduction

Creative industries positively impact economic growth in developing nations like Malaysia and Indonesia, with government policies and cultural dynamics playing a crucial role in shaping creative outputs (Syafri et al. 2023; Au Yong 2019). This chapter explores the transformative impact of Generative Artificial Intelligence (AI) on Malaysia's creative media industry, highlighting its significant influence on digital innovation and cultural expression. The complexities of integrating Generative AI into Malaysia's creative sectors are examined, revealing its potential to revolutionize traditional content creation processes in areas such as digital arts and interactive media, and to foster new forms of storytelling and artistic expression. Challenges and opportunities, including ethical considerations and copyright issues, are discussed, alongside the importance of balancing technological advancements with the preservation of Malaysia's rich cultural heritage. Through literature review and case studies, an overview is provided on how Generative AI can potentially redefine the Malaysian creative media industry, setting the stage for a future where technology and creativity merge in novel ways, driving innovation while prioritizing cultural authenticity and integrity. While Generative AI may offer new possibilities for storytelling and artistic expression (Anantrasirichai et al. 2022), there is a risk of depersonalizing and commodifying creative work, potentially leading to a homogenization of cultural content. Additionally, the reliance on technology may overshadow the importance of human creativity and originality in the creative process.

4.2 Methodology

This chapter employs a conceptual approach, utilizing a comprehensive literature review complemented by targeted case studies to explore the impact of Generative AI in Malaysia's creative media industry. The methodology centres around a thorough review of academic literature, industry reports, white papers, and government publications that document global AI trends and their applicability to the creative sectors, particularly within the Malaysian context.

To substantiate the theoretical discussions derived from the literature review, the chapter examines selected case studies of Malaysian media companies and creative projects that have integrated AI technologies. These case studies were chosen for their relevance and the insights they provide into the practical applications of AI, the challenges encountered, and the outcomes achieved in the local creative industries.

The main objective of this chapter involves drawing together the insights from both the literature review and the case studies to provide a cohesive understanding of how AI is shaping the creative landscape in Malaysia. This synthesis aims to identify key trends, challenges, and opportunities for AI in the local creative sectors, offering a foundation for future research and informing policy-making in the area.

This methodological framework ensures a robust analysis that is both comprehensive and specific, providing valuable insights into the dynamics of AI adoption and integration in Malaysia's creative media industry and contributing to the broader academic and practical discourse on AI in creative applications.

4.3 Key Concepts and Issues

4.3.1 *Understanding Artificial Intelligence*

Artificial Intelligence (AI) aims to replicate human-like intelligence, enabling systems to understand language, recognize patterns, make decisions, and solve complex problems. The field's genesis in the mid-twentieth century was marked by Alan Turing's seminal question about machine reasoning, leading to pivotal developments. Among these, IBM's Deep Blue chess victory over Garry Kasparov in 1997 and Google's AlphaGo defeating a professional Go player in 2016 stand out, showcasing AI's capacity for analysing complex patterns and strategic decision-making (Granter et al. 2017).

Early AI research concentrated on theoretical problem-solving and symbolic methods, resulting in significant programs like the Logic Theorist and ELIZA. These initiatives proved that machines could undertake tasks previously believed to require human intelligence. However, the initial optimism was tempered by technological limitations, leading to periods known as "AI winters," characterized by diminished funding and interest (Toosi et al. 2021). The landscape shifted with advancements in computing power, data availability, and machine learning (ML) techniques, transitioning AI from a focus on rule-based processing to data-driven learning.

Machine Learning, as a vital component of AI, revolutionized the field by enabling systems to learn from data, thus identifying patterns without direct programming (Rebala et al. 2019). This shift laid the groundwork for further advancements in AI, notably through Deep Learning. Deep Learning employs intricate, multi-layered

neural networks to discern complex patterns, significantly enhancing AI's capabilities in fields like image and speech recognition, natural language processing, and autonomous driving (Sarker 2021; Liu et al. 2021).

Building on these advancements, Generative AI emerged as a cutting-edge frontier, capable of producing novel content, ranging from text to images and music. This development extends AI's capabilities beyond mere pattern recognition, enabling the creation of original, innovative outputs (Cao et al. 2023). The evolution from AI's theoretical underpinnings to its practical applications across various sectors highlights its transformative impact and underscores the field's continuous growth and potential for future innovation.

Having explored the historical evolution and technological advancements of AI, it is essential to understand how these global trends are being mirrored and adapted in Malaysia's creative sectors. This comparative insight will highlight the unique applications and challenges faced in integrating these technologies within the local creative industries.

4.3.2 *Historical Context and Present Scenario*

In the realm of "creative media" in Malaysia, there is no singular definitive reference available to accurately depict the culture of this discipline. In this article, "creative media" refers to the production of creative works, such as music or visual art, created with technology.

The *Pameran Seni Elektronik Pertama*, also known as the 1st Electronic Arts Show, is a key event in the history of the intersection of technology and art in local Malaysian context. The exhibition, held in 1997, has highlighted the results of artworks that use technology or computers platforms. However, the exhibitions do not present a comprehensive information or timeline resulted in a form of "art and technology" artworks in Malaysia. Curated by Rajah et al. (1997), The show was notable for pioneering a new era in the intersection of art and technology in Malaysia tertiary education.

Abdullah and Elham (2019) described, the "new media art" with utilization of electronics and video as a medium emerged around 80s in Malaysia. They also outlined early notable works by visual artists applications of digital print on computers, BASIC programming video, and computers software beginning in the 1980s and throughout the 90s.

In the case of music for example, innovative integration of computers in music activity starts through programming environment as described by Fernandez and Vico (2013). A proficiency in language programming enables artists or composers to generate innovative and creative concepts., In this approach, artist or composers need to possess a precise understanding and foresight of their intended creation. In other words, a more systematic techniques, rather than, "trial and error". Planning should commence with the goal of creating a coherent piece of work and determining how the software utilised can facilitate the accomplishment of the desired purpose. It

is crucial to recognise and comprehend the language programming requirements as it dictates the processing tasks that a computer must do in achieving innovative and creative works. However, not all artists or composers possess the requisite technical expertise as previously stated. Artists or composers who possess both creative ideas and technical skills, such as language programming, will be able to enhance their capacity to create more inventive and creative creations.

Computers with musical applications in Malaysia in the late 80s were mainly used for composing popular music through the utilisation of Musical Instrument Digital Interface (MIDI) technology. This is due to the fact that, popular music culture is widely accepted and appreciated more than explorative musical genre such as electroacoustic music or installation musical works. In the context of Malaysia, the utilisation of MIDI is restricted to whatever features available by the software.

Advancements in technology, such as AI through language programming platforms, have motivated those without any pre-requisite programming experience to explore more innovative in their creative works through the use of graphical oriented software platforms as described some of the examples extensively by Fernandez and Vico (2013). Methods involve utilising “drag and drop”, icons, buttons, and similar tools.

In the view on the current development of AI technology, there is the need to re-examined skills that need to be provided through teaching and learning of the arts in Malaysia. Government's efforts to “popularize” AI, is increasingly evident through the program such as, “*AI untuk Rakyat*”,¹ with the objective to create awareness to Malaysians related to AI. The program as outlined by the Malaysian government was to provide information and education on AI to all levels of society in Malaysia. This proves the serious effort initiated by the Malaysian government in ensuring that Malaysians are not left behind in the mainstream of AI technology development. However, the extent to which this “*AI untuk Rakyat*” able to influence or have an impact on artistic activities in Malaysia is something that is too early to discuss.

4.4 Discussion of Implications

4.4.1 *Generative AI Technologies in Creative Media*

Globally, AI has enabled creators to push the boundaries of innovation by automating mundane tasks and enhancing creative capabilities. For instance, in the film industry, AI algorithms assist in scriptwriting and animation, creating intricate and lifelike scenes that were previously not possible without substantial human labour and time (Du and Han 2021; Li 2022). Similarly, in digital art, technologies like generative adversarial networks (GANs) have introduced new forms of artistic expression by generating novel images and styles (Man Tin 2022).

¹ A self-learning online program initiated by Malaysian government available through the following link <https://www.mydigital.gov.my/bm/ai-untuk-rakyat/>.

Generative AI technologies in creative media encompass a range of tools and algorithms designed to automate and enhance the creative process (Cao et al. 2023). These include text-to-image generators that can create visual art from descriptive language, AI-driven music composition tools that can generate new melodies and harmonies, natural language models capable of writing scripts or novels, and deepfake technologies for realistic video and voice synthesis. Additionally, AI algorithms are used for editing and enhancing images and videos, providing creators with powerful tools to refine their work with unprecedented precision and speed. This technological landscape is rapidly evolving, offering creative professionals' new ways to express their visions and engage with audiences.

The following section aims to classify several applications of Generative AI in influencing the creative process and expanding possibilities in different media formats. This taxonomy (as shown Fig. 4.1) provides as a thorough guide for a range of applications, including text-based tools that create tales and lifelike speech, as well as advanced image and video generating tools. It provides direction for both creative professionals and enthusiasts in Malaysia and a peek into the increasingly interesting future of digital creation. As we explore, remember the revolutionary potential of these technologies for both individual creators and the broader Malaysian creative media industry.

Table 4.1 shows the summary of Generative AI category, its description and examples use case.

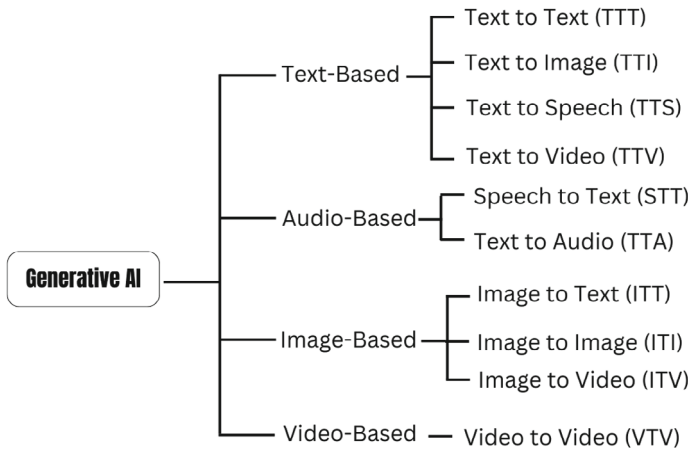


Fig. 4.1 Categorisation of generative AI

Table 4.1 Summary of generative AI category classification

Category	Application	Description	Examples
Text-based	Text to text (TTT)	Generates coherent text responses, translations, and code	OpenAI ChatGPT, Google Gemini, Claude 3
	Text to speech (TTS)	Converts written text into spoken words in various languages and accents	ElevenLabs' Eleven Multilingual v2, Microsoft's VALL-E
	Text to image (TTI)	Creates art, enhances photos, or generates artworks from textual descriptions	Mid journey, stable diffusion, DALL-E
	Text to video (TTV)	Creates video content from text, incorporating narrative, visual design, and animation	Meta's make-a-video, OpenAI SORA
Audio-based	Speech to text (STT)	Transcribes spoken words into written text for documentation and content creation	OpenAI whisper, Otter.ai
	Text to audio (TTA)	Generates music or sound effects from textual inputs	Meta's AudioCraft, Google's MusicML
Image-based	Image to text (ITT)	Converts images into text using OCR and AI analytics	–
	Image to image (ITI)	Enables artistic expression and practical image enhancements	Adobe Firefly 3, Gencraft
	Image to video (ITV)	Generates video content from static images	Stable Video Diffusion (Stability AI)
Video-based	Video to video (VTV)	Allows creators to edit, transform, or generate new videos from existing footage	–

4.4.2 Case Studies and Possible Use Cases

In the evolving landscape of Malaysian creative media, Generative AI technologies are poised to play a pivotal role, offering transformative solutions across various domains. The following discussion explores the integration and potential future applications of Generative AI within the creative industry sector, using real-world examples and theoretical use cases that highlight the technology's versatility and impact.

4.4.2.1 Text-Based Generative AI Applications

The adoption of Text to Text (TTT) AI, such as OpenAI ChatGPT and Google Gemini, within Malaysian media outlets illustrates a significant leap towards automating content creation. These tools are adept at generating articles on a wide range of topics, including community events and local sports, in languages prevalent in Malaysia like

Malay, English, Mandarin, and Tamil. This not only enhances productivity but also ensures content diversity and linguistic inclusivity. For instance, a Malaysian news portal utilizing TTT AI could efficiently produce multilingual content about national events, facilitating timely and inclusive information dissemination. As discussed by Pavlik (2023) ChatGPT has the potential to revolutionize journalism and media content, but its capacity and limitations must be considered in education. Generative AI is also significantly reshaping digital advertising, influencing consumer engagement, and influencing future trends in the industry (Baek 2023). Generative AI is also being used to help explore multiple narrative framings for news stories, easing the burden of transforming written stories into entertaining social media videos (Wang et al. 2023). The presence of Large Language Model (LLM) pretrained from scratch with Malaysian context should promote the usage of Generative AI for local Malaysian context (Zolkepli et al. 2024).

4.4.2.2 Speech-Based Generative AI Applications

Speech to Text (STT) recognition technologies have witnessed significant advancements in recent years, transforming various industries and applications (Haynes et al. 2018; Reddy et al. 2023). Speech to Text technology, utilized for transcribing multilingual interviews and discussions, offers invaluable benefits in preserving Malaysia's rich oral history and supporting media workflows. This technology facilitates the archival and accessibility of cultural narratives, underscoring its utility in academic and journalistic endeavours. STT is also a viable tool for broadcasters and journalists, improving accuracy and efficiency in finding content in minutes rather than hours (Haynes et al. 2018). A documentary capturing Malaysia's diverse oral histories could leverage STT for efficient transcription and subtitling in multiple languages, enhancing research and storytelling.

In the realm of audio, Text to Audio (TTA) AI's potential for generating music and sound effects presents an affordable solution for independent filmmakers and content creators. This technology democratizes sound design, allowing for creative experimentation without prohibitive costs. An indie filmmaker could, for example, use TTA AI to craft unique soundtracks for a film exploring Malaysian folklore, thereby enriching the narrative with culturally resonant soundscapes.

4.4.2.3 Image-Based Generative AI Applications

Image to Text (ITT) technology (Liao and Ji 2023) enhances the accessibility and SEO (Search Engine Optimization) of digital content by generating descriptive captions for images. This application is particularly relevant for Malaysian social media platforms and websites, aiming to make visual content more accessible and informative. A cultural museum could employ ITT to automatically generate captions for online exhibits, improving virtual visitor engagement and education.

Furthermore, Image to Image (ITI) AI enables artists and designers to experiment with new visual styles, blending traditional Malaysian motifs with contemporary design. This fusion facilitates the creation of innovative art that reflects Malaysia's multicultural identity, offering fresh avenues for creative expression. A graphic designer might use ITI AI to produce posters for a cultural festival, marrying traditional batik patterns with modern design principles.

4.4.2.4 Video-Based Generative AI Applications

Video to Video (VTV) AI technology, by generating scenes for film and video production, can significantly reduce the costs and time associated with creating complex visual effects or historical reconstructions. This is especially beneficial for Malaysian filmmakers seeking to tell stories that require elaborate visual settings or effects. A production company could harness VTV AI to create realistic historical scenes for a documentary on Malaysia's independence, circumventing the need for expensive physical sets and props.

Through these examples, the potential of Generative AI to revolutionize the Malaysian creative media sector becomes evident. From enhancing productivity and inclusivity to fostering innovation and preserving cultural heritage, the potential applications of Generative AI are vast and varied. As these technologies continue to advance, their integration into the Malaysian creative landscape promises to open new frontiers in content creation, offering exciting prospects for the future of media production and artistic expression.

4.4.3 Ethical Considerations and Challenges

Introducing Generative AI technologies in creative media raises intricate ethical concerns, particularly around copyright infringement, the authenticity of creative works, and the potential exploitation of deepfake technology (Nhavkar 2023; Li et al. 2023; Kenthapadi et al. 2023). In Malaysia, it is crucial to ensure that AI-generated material adheres to cultural sensitivities and intellectual property rights, given the country's emphasis on celebrating and safeguarding cultural diversity. The utilisation of text-to-image AI to replicate traditional Malaysian artworks may result in conflicts about copyright and cultural appropriation, blurring the lines between inspiration and infringement. AI-generated music that closely mimics the style of local musicians without proper credit or permission presents issues with originality and copyright in the creative field.

Moreover, the use of deepfake technology in video creation, which may generate highly realistic depictions of people without their permission, raises important ethical and privacy issues (Yadav and Salmani 2019; Mirsky and Lee 2022). The potential

exploitation of this technology in creating deceptive or harmful information emphasises the necessity of strict ethical principles and regulatory supervision to avoid harm to persons and society.

To resolve these ethical issues, the Malaysian government must regulate AI in creative media. Creating clear criteria that balance innovation, copyright, privacy, and cultural sensitivity is essential. The legal framework must address AI's unique challenges, such as copyright ownership of AI-generated content and deepfake technology ethics. Solaiman et al. (2024) proposed a standard method for assessing Generative AI systems' social impacts in technical systems and society, focusing on trustworthiness, autonomy, inequality, and creativity. This standard can be used to create a Malaysian-specific standard.

4.4.4 Economic and Social Impact

The emergence of Generative Artificial Intelligence (AI) in the creative media sector marks the beginning of a new era, defined by its notable economic and societal impacts (Brynjolfsson et al. 2023; Zhang et al. 2023; Orchard and Tasiemski 2023). Usage of Generative AI technology into Malaysia's creative media industry is expected to stimulate economic development by improving efficiency and fostering innovation. AI-driven solutions that automate content development processes can greatly decrease production costs and time, allowing media organisations to use resources more efficiently. One possibility is for Malaysian animation studios to adopt text-to-speech (TTS) and text-to-image (TTI) technologies to improve the production of animated content, making it easier for independent creators and small enterprises to enter the industry. The democratisation of content creation can potentially boost entrepreneurial activity and broaden the industry's economic foundation.

Yet, the economic impacts of Generative AI are not consistently beneficial. There is a noticeable worry about job displacement in traditional creative industry professions as AI technologies take over tasks that were once done by humans. The problem is to balance the efficiency benefits of AI while also maintaining employment possibilities and promoting skill development in the creative sector.

Generative AI can potentially alter Malaysia's creative media business, leading to both job growth and displacement. This contrast highlights the need of having a detailed understanding of how AI technologies are reshaping employment patterns in the industry. Furthermore, Generative AI's automated capabilities present a substantial risk to conventional positions in the creative media sector. For example, AI is currently taking over tasks like basic content production, editing, and some design work, leading to a decrease in the need for human labour in these fields (Ashfaq et al. 2022). For instance, implementing AI in creating news articles or designing graphics can improve efficiency but also eliminates occupations traditionally done by journalists and graphic designers.

On the other hand, the incorporation of Generative AI technologies is also stimulating the emergence of new career opportunities, especially in positions that include

supervising, coordinating, and providing creative guidance for AI systems (Gmyrek et al. 2023; Verheijden and Funk 2023). These new positions require a blend of technical proficiency and innovative thinking, such as AI trainers who educate AI systems on cultural subtleties and ethical issues, or AI integration specialists who manage the implementation of AI technologies in creative endeavours. Moreover, the democratisation of content creation through AI enables entrepreneurial opportunities, supporting a new generation of entrepreneurs and independent creators who utilise AI to introduce novel material to the market.

4.5 Future Directions

As we look toward the future, the integration of Generative AI in Malaysia's creative media industry holds numerous transformative possibilities. The trends observed today are merely the precursors to a deeper and more pervasive impact, which will be felt across various facets of media in Asia. First and foremost, the role of AI in creative processes is projected to evolve from merely assisting in content creation to becoming an integral collaborator in the artistic journey. This will include the development of sophisticated AI tools capable of understanding and predicting cultural differences, allowing for the creation of highly localized content that resonates deeply with audiences. The progression of AI technologies such as TTS (Text-to-Speech) and TTI (Text-to-Image) will enable media producers to develop immersive and interactive experiences, particularly in the realms of virtual and augmented reality. These advancements are expected to redefine the boundaries of storytelling and audience engagement, making the consumption of media an increasingly dynamic and personalized experience.

Furthermore, the democratization of AI tools will empower a wider array of creators, from established media houses to independent artists and small enterprises. This inclusive shift is anticipated to promote a vibrant ecosystem of innovation, where diverse voices and perspectives contribute to a richer tapestry of creative expression. In turn, this will spur economic growth by opening new avenues for entrepreneurship and content monetization, both domestically and on a global scale.

On the technological frontier, the integration of AI with other emerging technologies such as blockchain will play a critical role in addressing ethical and legal challenges. For instance, blockchain can provide transparent and immutable records of copyright claims and content authenticity, ensuring that creators receive due credit and protection for their works. This synergy between AI and blockchain could revolutionize intellectual property management and bolster trust in AI-generated content.

Moreover, as AI becomes more adept at understanding and reproducing human creativity, ethical considerations will necessitate stringent regulatory frameworks. Policymakers in Malaysia and across Asia will be tasked with balancing innovation with ethical governance, ensuring that AI applications align with societal values

and cultural integrity. This will involve continuous dialogue between technologists, ethicists, and cultural custodians to navigate the complex terrain of AI ethics.

In conclusion, the future of media in Asia, driven by the capabilities of Generative AI, promises a landscape of boundless creativity, innovation, and inclusivity. By embracing these technologies and addressing associated challenges, the region stands poised to lead in the global creative economy, setting new standards for how stories are told and experienced.

4.6 Conclusion

This chapter utilises a conceptual approach, incorporating literature study together with specific case studies to examine the influence of Generative AI in Malaysia's creative media industry. The technique focuses on carrying out a comprehensive analysis of scholarly literature, industry reports, white papers, and government publications that chronicle worldwide AI developments and their relevance to the creative industries, specifically within the Malaysian context.

In order to provide evidence for the theoretical discussions based on the literature analysis, this chapter analyses specific case studies of Malaysian media firms and creative initiatives that have included AI technologies. The selection of these case studies was based on their relevance and the valuable perspectives they offer on the real-world implementation of AI, the obstacles faced, and the results attained in the various creative sectors.

The chapter includes examining discussions and published interviews with AI developers, media professionals, and researchers to guarantee that the findings accurately represent current trends and practical obstacles in integrating AI in the Malaysian creative media business. This technique serves the purpose of not only confirming the theoretical findings but also enhancing the conversation with practical viewpoints.

The final part of this chapter involves analysing the findings from both the literature review and the case studies to establish a comprehensive understanding of how AI is influencing the creative scene in Malaysia. This synthesis seeks to uncover significant patterns, difficulties, and possibilities for artificial intelligence (AI) in the local creative industries. It provides a basis for future study and informs decision-making in the field of policy-making.

As a conclusion, the integration of Generative AI within Malaysia's creative media industry remains at a preliminary stage. While there is substantial interest and potential for the application of AI technologies in enhancing various aspects of creative production, from digital arts to media content development, concrete examples of Generative AI specifically influencing the creative sectors are limited. This indicates a significant opportunity for growth and innovation, suggesting that Malaysia's creative industries could benefit from increased investment in AI research and development to harness these technologies for creative endeavours. The current focus appears to

be on foundational AI applications and exploring their possibilities, setting the stage for more targeted and impactful use of Generative AI in the future.

Highlights

- Generative AI reshaping Malaysia's creative media: automation, innovation, inclusivity.
- Ethical challenges: copyright, cultural preservation, content authenticity.
- Democratized creation: tools like Text-to-Image, Text-to-Video Generative AI empower creators.
- Balancing automation with job opportunities, skill growth essential.
- Growth potential: innovation while safeguarding cultural identity.

References

- Abdullah, Sarena, and Siti Khadijah Elham. 2019. Culture and identity in selected new media artworks in Malaysia 1993–2007. *Journal of Visual Art and Design* 11 (1): 19–34. <https://doi.org/10.5614/j.vad.2019.11.1.2>.
- Anantrasirichai, Nantheera, and David Bull. 2022. Artificial intelligence in the creative industries: A review. *Artificial Intelligence Review* 55 (1): 589–656. <https://doi.org/10.1007/s10462-021-10039-7>.
- Ashfaq, Rubaid, Zeba Nabi, and Rohit. 2022. Artificial Intelligence and the Indian media industry: The future is now. *Journal of Artificial Intelligence, Machine Learning and Neural Network* (26): 24–31. <https://doi.org/10.55529/jaiml.26.24.31>.
- Au Yong, Hui Nee. 2019. Unlocking the potential of a creative Economy and Policy: The Development of Malaysia as a Hub for Creative Content Technologies. 12–24.
- Baek, Tae Hyun. 2023. Digital advertising in the age of generative AI. *Journal of Current Issues & Research in Advertising* 44 (3): 249–251. <https://doi.org/10.1080/10641734.2023.2243496>.
- Brynjolfsson, Erik, Danielle Li, and Lindsey Raymond. 2023. Generative AI at work. Cambridge, MA. <https://doi.org/10.3386/w31161>.
- Cao, Yihan, Siyu Li, Yixin Liu, Zhiling Yan, Yutong Dai, Philip S. Yu, and Lichao Sun. 2023. A comprehensive survey of AI-generated content (AIGC): A history of generative AI from GAN to ChatGPT. *Journal of ACM* 37 (111). <https://arxiv.org/abs/2303.04226v1>.
- Du, Wenda, and Qing Han. 2021. Research on application of artificial intelligence in movie industry. In *2021 international conference on image, video processing, and artificial intelligence*, eds. Yudong Zhang and Dora Zhang, 50. SPIE. <https://doi.org/10.1117/12.2619500>.
- Fernandez, Jose D., and Francisco Vico. 2013. AI methods in algorithmic composition: A comprehensive survey. *Journal of Artificial Intelligence Research* 48: 513–582. <https://doi.org/10.1613/jair.3908>.
- Gmyrek, Pawel, Janine Berg, and David Bescond. 2023. Generative AI and jobs. Geneva: ILO. <https://doi.org/10.54394/FHEM8239>.
- Granter, Scott R., Andrew H. Beck, and David J. Papke. 2017. AlphaGo, deep learning, and the future of the human microscopist. *Archives of Pathology & Laboratory Medicine* 141 (5): 619–621. <https://doi.org/10.5858/arpa.2016-0471-ED>.

- Haynes, Matt, Alex Norton, Andrew McParland, and Rob Cooper. 2018. Speech-to-text for broadcasters, from research to implementation. *SMPTE Motion Imaging Journal* 127 (2): 27–33. <https://doi.org/10.5594/JMI.2018.2790658>.
- Kenthapadi, Krishnaram, Himabindu Lakkaraju, and Nazneen Rajani. 2023. Generative AI meets responsible AI: practical challenges and opportunities. In *Proceedings of the 29th ACM SIGKDD conference on knowledge discovery and data mining*, 5805–5806. New York, NY, USA: ACM. <https://doi.org/10.1145/3580305.3599557>.
- Li, Jian, Xintong Cai, and Le. Cheng. 2023. Legal regulation of generative AI: A multidimensional construction. *International Journal of Legal Discourse* 8 (2): 365–388. <https://doi.org/10.1515/ijld-2023-2017>.
- Li, Yaxing. 2022. Research on the application of artificial intelligence in the film industry. *SHS Web of Conferences* 144 (August): 03002. <https://doi.org/10.1051/shsconf/202214403002>.
- Liao, Shanxi, and Xiaoyu Ji. 2023. A study on the application of generative artificial intelligence technology in image design. In *Proceedings of the 2nd international conference on intelligent design and innovative technology (ICIDIT 2023)*, 338–350. https://doi.org/10.2991/978-94-6463-266-8_36.
- Liu, Yang, Peng Sun, Nickolas Wergeles, and Yi Shang. 2021. A survey and performance evaluation of deep learning methods for small object detection. *Expert Systems with Applications*. <https://doi.org/10.1016/j.eswa.2021.114602>.
- Man Tin, Lai. 2022. Generative adversarial network algorithms in art: Data video. In *Intelligent human systems integration (IHSI 2022) integrating people and intelligent systems*. <https://doi.org/10.54941/ahfe100957>.
- Mirsky, Yisroel, and Wenke Lee. 2022. The creation and detection of deepfakes. *ACM Computing Surveys* 54 (1): 1–41. <https://doi.org/10.1145/3425780>.
- Nhavkar, Varun Kisan. 2023. Impact of generative AI on IT professionals. *International Journal for Research in Applied Science and Engineering Technology* 11 (7): 15–18. <https://doi.org/10.22214/ijraset.2023.54515>.
- Orchard, Tim, and Leszek Tasiemski. 2023. The rise of generative AI and possible effects on the economy. *Economics and Business Review* 9 (2). <https://doi.org/10.18559/ebv.2023.2.732>.
- Pavlik, John V. 2023. Collaborating with ChatGPT: Considering the implications of generative artificial intelligence for journalism and media education. *Journalism & Mass Communication Educator* 78 (1): 84–93. <https://doi.org/10.1177/10776958221149577>.
- Rajah, Niranjan, Hasnul Jamal Saidon, and Balai Seni Lukis Negara. 1997. Pameran Seni Elektronik Pertama. Kuala Lumpur, Malaysia: National Art Gallery.
- Rebala, Gopinath, Ajay Ravi, and Sanjay Churiwala. 2019. Machine learning definition and basics. In *An introduction to machine learning*, 1–17. Cham: Springer International Publishing. https://doi.org/10.1007/978-3-030-15729-6_1.
- Reddy, V. Madhusudhana, T. Vaishnavi, and K. Pavan Kumar. 2023. Speech-to-text and text-to-speech recognition using deep learning. In *2023 2nd international conference on edge computing and applications (ICECAA)*, 657–666. IEEE. <https://doi.org/10.1109/ICECAA58104.2023.10212222>.
- Sarker, Iqbal H. 2021. Deep learning: A comprehensive overview on techniques taxonomy applications and research directions. *SN Computer Science* 2 (6). <https://doi.org/10.1007/s42979-021-00815-1>.
- Solaiman, Irene, et al. 2024. Evaluating the social impact of generative AI systems in systems and society. <https://arxiv.org/abs/2306.05949>.
- Syafri, Muhammad, Mochammad Syafiuddin Shobirin, Dhiana Ekowati, and Nuril Maghfirah. 2023. The Impact of Creative Industries on Economic Growth: Case Studies in Developing Countries in Malaysia and Indonesia. *West Science Journal Economic and Entrepreneurship* 1 (10): 271–78. <https://doi.org/10.58812/wsjee.v1i10.295>.
- Toosi, Amirhosein, Andrea G. Bottino, Babak Saboury, Eliot Siegel, and Arman Rahmim. 2021. A brief history of AI: How to prevent another winter (a critical review). *PET Clinics* 16 (4): 449–469. <https://doi.org/10.1016/j.cpet.2021.07.001>.

- Verheijden, Mathias Peter, and Mathias Funk. 2023. Collaborative diffusion: Boosting designerly co-creation with generative AI. In *Extended abstracts of the 2023 CHI conference on human factors in computing systems*, 1–8. New York, NY, USA: ACM. <https://doi.org/10.1145/3544549.3585680>.
- Wang, Sitong, Samia Menon, Tao Long, Keren Henderson, Dingzeyu Li, Kevin Crowston, Mark Hansen, Jeffrey V Nickerson, and Lydia B Chilton. 2023. ReelFramer: Human-AI co-creation for news-to-video translation. <https://api.semanticscholar.org/CorpusID:264128392>.
- Yadav, Digvijay, and Sakina Salmani. 2019. Deepfake: A survey on facial forgery technique using generative adversarial network. In *2019 international conference on intelligent computing and control systems (ICCS)*, 852–57. IEEE. <https://doi.org/10.1109/ICCS45141.2019.9065881>.
- Zhang, Kaichen, Ohchan Kwon, and Hui Xiong. 2023. The impact of generative artificial intelligence. <https://arxiv.org/abs/2311.07071v1>.
- Zolkepli, Husein, Aisyah Razak, Kamarul Adha, and Ariff Nazhan. 2024. MaLLaM-Malaysia large language model. <https://arxiv.org/abs/2401.14680v2>.

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