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A Study on how to Secure Competitiveness through Case Analysis of Media and Contents using Generative AI

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Abstract

Due to the ChatGPT craze, all industries around the world have a hot Generative AI of interest. In particular, since Open AI announced AI Sora, which makes text into video on February 15, 2024, the media and content industries, both at home and abroad, have expressed expectations and a sense of crisis. By learning a large amount of Hyper-scale Data with artificial intelligence technology that actively generates results according to the specific needs of live Generative AI users, it is looking beyond the realm of creation, which can be called the human domain[1][2][3]. Although, unlike image-generating AI, the video live Generative AI service still has the limit of generating only short-length videos because it has to maintain temporal coherence. However, as live Generative AI developers supplement these problems and continue to offer advanced services, they will become the mainstream of live Generative AI in the media and content industries. Therefore, as of 2024, this study intends to present 3I(Inquiry-Inspection-Idea) as a strategy for competitive advantage in the media and content industries to respond to changes in the media and content industries that will be triggered by generative Generative AI along with ways to secure competitiveness through case analysis of generative Generative AI in the media and content industries[2].

Keywords: *AI, Generative AI, Media, Content, ChatGPT, 3I.*

INTRODUCTION

The ChatGPT craze is alarming. The service, which actively provides immediate answers to detailed questions from users, has exceeded 100 million monthly active users(MAUs) worldwide in two months since the initial beta version was released on November 30, 2022, and about 200 million monthly active users(MAUs) as of February 2023[4]. In addition, global big tech companies such as Google and Meta are scrambling to announce plans to launch similar services along with astronomical investments. The key to this ChatGPT service is to understand and analyze users' questions, find necessary information that can be answered among numerous information, and properly summarize and organize it[5]. In particular, in the case of live Generative AI, the more accurate the user continuously connects the context of the previous question or asks a specific case, the more accurate the answer is, which provides an experience of an information search service that is different from before in that it understands the context and provides an answer as if talking to a person. Therefore, ChatGPT's appearance is differentiated from the first-generation search(Search 1.0), where users went directly to physical places such as libraries or bookstores to search for information, and the second-generation search(Search 2.0), where users obtained information by entering subject keywords into Internet search engines such as Google[6]. In other words, it can be said that it is the emergence of third-generation search(Search 3.0)[6].

Table 1. Evolution of Information Search

Division	Search 1.0	Search 2.0	Search 3.0
Time	Before the 1990s (Before Internet dissemination)	1990s to 2010s (Digital search is becoming more common period of popularization)	After the 2020s, (After ChatGPT dissemination)
Information place of Acquisition	Physical place (Libraries, bookstores, etc.)	Search Engine Services (Google, etc.)	Generative AI Services (ChatGPT, etc.)
Limitation	To find information You have to visit physically. The users of books and	To find valid information The user is good at keywords. We need to sort out the search	in every timely manner or in every opening due to differing opinions

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	articles I have to sort it out. Over-costing and time-consuming.	results. Need to organize themselves.	User directly related to facts Need to check
Search Range	with relatively little information Can only be sword-sexy about	The scope of the information is It's been expanded, but the user... The search engine you're using, Limited to linked information	Natural language processing and AI search through a learning algorithm Extensive searches and users Feedback and data. Search information based on Continuous improvement
Required Infrastructure	libraries, bookstores, etc. Physical access required	Digital devices and Internet access required	Digital devices, the Internet, AI Platform Access Required
Searcher Role	The user will be able to see the information data. I think it's a good idea to work hard on the selection process. Need expertise	I'm going to use the search keyword to match the topic. Organized configuration, search Only valid information among results Need to clean up	derived through an algorithm The results are interpreted by the user. Need to check

Generative Generative AI tend to be explained only as ChatGPT due to the rapid increase in interest in ChatGPT around the world, but ChatGPT is only a representative service using generative Generative AI, and there are various generative Generative AI that can be used in media and content fields, including image-generating Generative AI, music-generating Generative AI, and video-generating Generative AI.

Just as the Internet, which began with the development of computers in the 1950s, and the iPhone's emergence in 2007, made a big difference in the global ecosystem, experts and the public around the world are looking forward to how disruptive AI technology will once again create. On the other hand, some are raising concerns that new technologies such as blockchain and metaverse will become a trend technology that draws attention for a while, as if they had suffered ups and downs for a while. However, in the end, it can be understood that disruptive innovations such as AI technology depend on the emergence of specific products or services that the general public can feel as much as the innovation of the technology itself. One of the key reasons why metaverse and blockchain technologies have yet to have a significant impact on our lives compared to expectations is that there are no successful innovative products or services yet that the public can specifically feel.

Remembering the devastating innovations when Stephen Jobs launched the first-generation iPhone in 2027, 3G-based mobile technology and touch screen technology existed before, but these technologies were only able to amplify changes in business and users around the world with the advent of iPhone and App Store services. In particular, it was possible because there was a user interface(UI) that users could intuitively experience and a specific front-end service called the App Store. Therefore, AI is similar to the mobile innovation from the live Generative AI iPhone, which allows the public to directly feel the usefulness of the service through a front-end service called ChatGPT, and is a disruptive innovation that promotes major changes in the ecosystem of businesses and users around the world.

Therefore, this study focuses on Generative AI to study whether it is Generative AI and how to secure competitiveness through analysis of media and content cases for Generative AI in addition to ChatGPT.

Generative AI

Generative AI To understand accurately, we need to understand the AI development process. First came the concept of artificial intelligence. Artificial intelligence(AI) literally means artificial intelligence, that is, a technology that enables computers or machines to perform actions performed through human intelligence[7][8][9]. Later, the concept of machine learning emerged, where computers learn based on data and process the results based on patterns found in the data[10][11][12]. And in the 21st century, as these technologies were implemented as various services along with a technology called Deep Learning, the concept of AI became known to the public, and in the 2020s, live Generative AI, a service technology that can reach the public even more[10][13].

It is an artificial intelligence(AI) technology that creates similar content by utilizing existing content such as Generative AI, audio, images and goes beyond simply learning content patterns and creating new content based

on inference results, and it is a technology in which content creators and users who evaluate created content constantly confront and compete with each other and create new content[14][15][16]. In the field of image among Generative AI, it is used in industries such as shopping and movies by recreating photos or creating fake human faces indefinitely with pictures that mimic a specific artist's painting style. In the field of voice, it is used to compose music of a specific genre or regenerate a certain song into the tone of a singer who wants it[16][17].

Table 2. Key Concepts of Artificial Intelligence

Artificial Intelligence	Machine Learning	Deep learning	Generative AI
A technology that imitates human intelligence and allows computers or machines to perform those abilities.	A technique that allows computers to learn based on data and infer from data based on found patterns without explicit rules.	A technique that allows us to infer data based on hierarchically learned patterns by following human brain neural networks.	Artificial intelligence technology that generates results according to the specific needs of users.

In the end, it refers to artificial intelligence technology that actively generates results according to the specific needs of generative Generative AI users[9][18]. If existing deep learning-based AI technology was simply predicting or classifying based on existing data, it is an advanced AI technology that finds and learns data by itself to solve questions or tasks required by live Generative AI users and actively presents results such as data or content based on this[8][19][20].

AI developers are developing and applying various generative Generative AI according to the purpose of the service[9]. Such a Generative AI model is a Large Language Model(LLM), which is a Generative AI model that provides the resulting Variational Auto-encoder(VAE) by learning language data such as text[8][9][21]. LLM developed by Open AI is GPT, and ChatGPT-4, which has a model size about 500 times larger than the existing model ChatGPT-3.5, was released in March 2023, Google unveiled "Bard," a chatbot service using Pathways Language Model(LLM) in May 2023, and Meta unveiled LLM called "Large Language Model Meta AI: LLM of Meta" in February 2023.

Table 3. LLM and Front-end Service of Major Generative AI Companies

Developer	LLM(Large Language Model)	Service
OpenAI	GPT-4.0	ChatGPT
Google	PaLM(Pathways Language Model	Bard
Meta	Llama(Large Language Model Meta)	Llama3.1

Media, Content Case Analysis Using Generative AI Services

Image live Generative AI service : Playground AI

With the development and popularization of various image-generated Generative AI, which are characterized by the ability to quickly generate images through image-generated Generative AI text, the number of cases of design collaboration using image-generated Generative AI is also increasing [23]. Among them, Playground(https://playground.com/) AI creates images using live Generative AI, allowing users to create up to 1,000 images per day. The service has a simple interface with an image gallery of art, wallpapers, stickers, posters, etc. in the center of the screen, allowing users to remix existing corresponding images or create new images from scratch using various prompts, filters, and image-to-image functions.

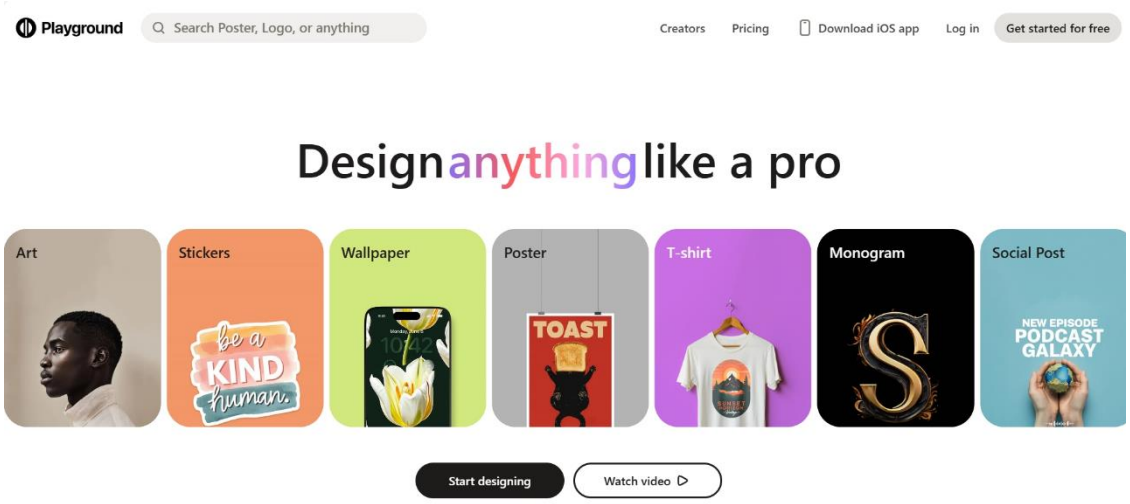

Figure 1. Playground AI homepage

The service provides the generative image generation model, Stable Fusion 1.5, and Stable Fusion 2.1, and Dali 2, an image generation model of open AI, is also provided to paid subscribers. In addition to that, you can also choose image size, number of generated images, quality level, and other advanced options. In addition, Playground AI has free and paid pricing plan, and in the case of free pricing plan, users can generate and commercially use 1,000 images per day, but in this case, the first 50 images are not limited in quality, but the quality level is limited from above 50. On the other hand, paid pricing plan provides higher resolution, faster generation, and permanent closed mode. For example, if a user enters the prompt 'beutiful girl, pretty face, portrat, pink expansion, hyper detailed face, hyperrealistic, hyper detailed background', a nice animated character is created, and if you upload a picture of yourself and enter the prompt 'Add sunglass to the face', you can easily create an image of yourself wearing sunglasses.

Figure 2. Playground AI-powered screens and comparison images before and after sunglasses commands.

Music live Generative AI service : Soundraw

Along with the generative Generative AI moon, various contents are being created using AI, and the music sector also learned individual tones in the production of music and synthesized them with the original sound source so that they can sing like singers even if they do not sing themselves, and people have come to create various music contents themselves regardless of their musical skills. In response, in November 2023, Paul Meccatney released the Beatles' last single, Now And Then, extracting John Lanon's voice with AI. In addition, Warner Music signed a record deal with AI singer and influencer Noonoori to release the single Dominoes, and Google and Universal Music have been in licensing talks since 2023 to take advantage of AI deepfake music.

Among music-generating Generative AI, Soundraw is a service that can generate music with artificial intelligence without copyright issues, and users can choose the atmosphere, genre, and length of music to

instruct AI to generate music, and can freely generate music, such as shortening the intro or changing the position of the chorus. In particular, the service is a live Generative AI service useful for creators such as YouTube, social media, and podcasts, and music generated by Soundraw helps creators use music for videos without worrying about copyright. Soundraw also has the same free and paid pricing plan in other live Generative AI, and in the case of paid pricing plan, users download up to 50 songs a day for personal and commercial purposes, and even if users cancel the paid pricing plan, the function to use and download music is maintained.

The method of generating music in the music-generating Generative AI undraw is very simple. If a user selects a tempo, theme, instrument, etc., AI-generated music can be checked immediately. However, it has not yet provided MIDI, MP3 or stem file downloads, so there is a disadvantage that there is a limit to track editing work at the producer level.

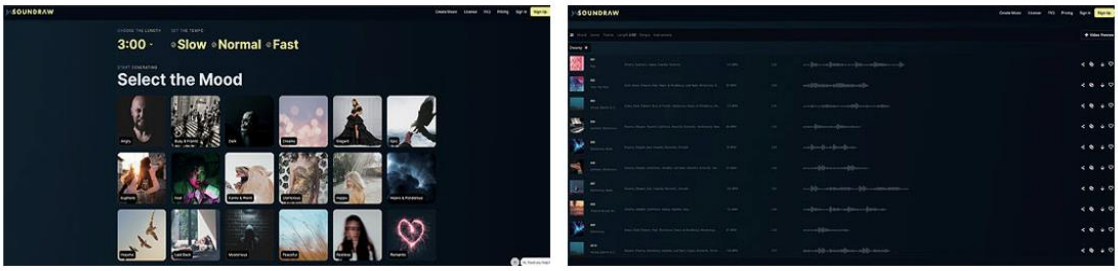

Figure 3. Soundraw Drive Screen

Live video Generative AI service : InVideo AI

Open AI, the developer of ChatGPT, pre-released the text-to-video service <Sora> on February 15, 2024. This service is a live Generative AI service that is optimized for videos that output desired high-quality video content of about 60 seconds when a text command of one line to three lines is input. In particular, OpenAI explained the technology in detail by releasing a report called 'Video generation models as world simulators' along with the release of the service.

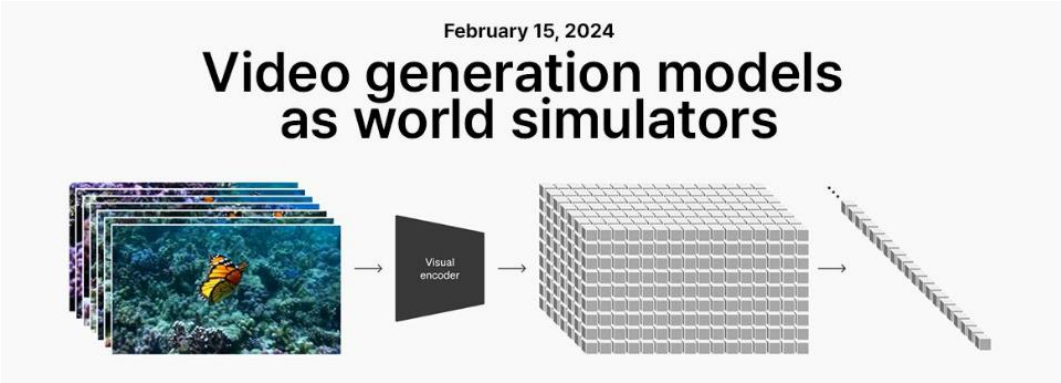

Figure 4. Principle of operation of the <Sora> model

In particular, unlike other generative AIs such as images and music, global big tech companies that are trying to compete fiercely for the leadership of video-generated Generative AI and generative Generative AI are also developing text-to-video service models and preparing to launch them in earnest.

First, in the case of Google, in January 2024, it announced a video generation model <Lumiere> that applied the Space-Time Diffusion Model for Video Generation. The model presentation is designed to simultaneously process the spatial aspect of the location of the object in the video and the temporal aspect of how the object moves and changes throughout the video to improve the spatial reality and temporal consistency of the video content generated from text or image input. To improve the quality of the video content generated in live

Generative AI, the model learned with 30 million captioned video datasets, and generates video content of up to 5 seconds in 16-80 frames per second of 1024×1024 pixels, which causes some of the video content to be lost and some of the video content to be difficult to come out completely by recognizing the surrounding screen through an inpainting function that inserts specific objects.

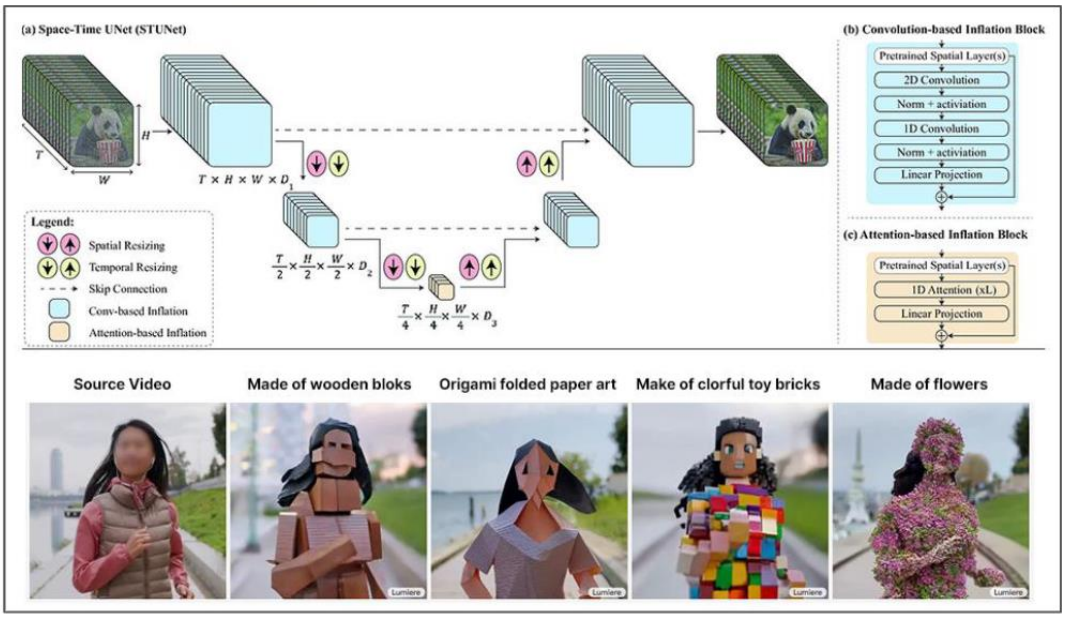

Figure 5. Google's <Lumiere> Model and Video Styling

In addition, Meta also released a text-to-video service model called "Emu Video" in November 2023 along with the publication of the paper, which can generate video content or combine two videos by entering text input or reference images, which can create video clip content that is four seconds long.

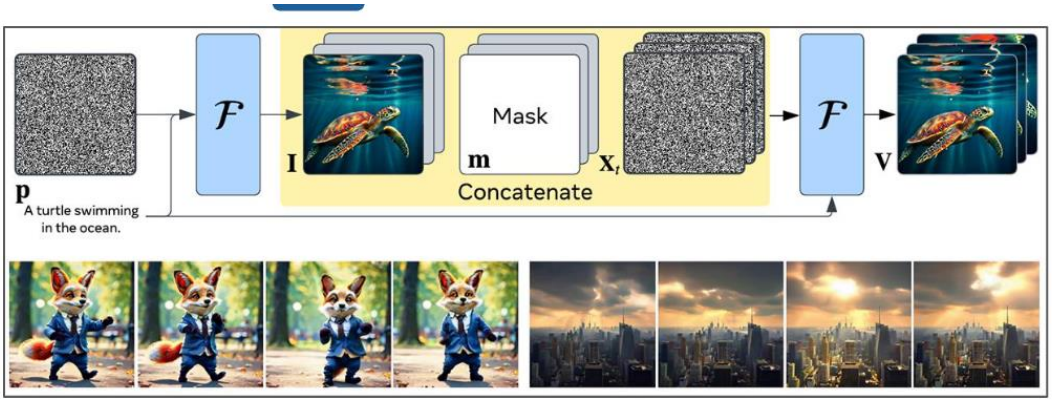

Figure 6. Meta's <Emu Video> model and video

However, Google's <Lumiere>, Meta's <Emu Video>, and this image-generating AI service have conducted papers and Generative AI, but no official launch has been made.

Therefore, this study analyzed InVideo AI, a service that allows any media or content user to create attractive images from text for generative Generative AI without complex video editing technology.

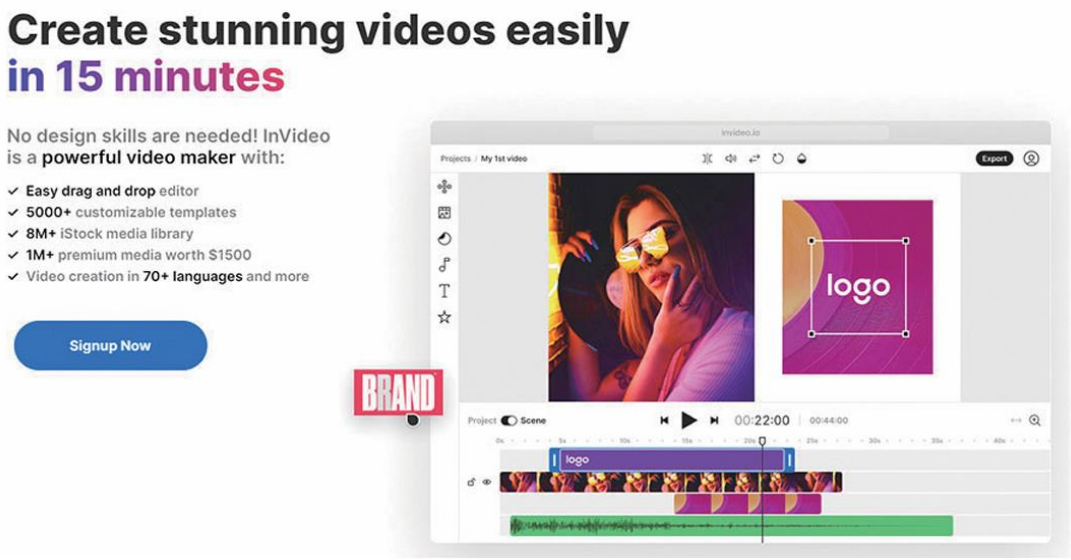

Figure 7. InVideo AI-powered screens

The service can also select an idea for video and select keywords in the same way as other image and music-generating Generative AI. After that, the next step is to create a script, which can be easily generated by using ChatGPT, an AI tool. When the script is ready, InVideo works to provide a variety of templates, transitions, and texts. You can use animation and music to create videos, and you can use the video workflow in the InVideo dashboard to select a template that matches the video theme and the channel's aspect ratio. In addition, InVideo's AI tool suggests the most appropriate video, including still images for each scene, and users can search for related clips on the video tab and automatically replace the selected media with related media. The final step is to add voice commentary to the video using InVideo's automatic text-to-speech function. Users can select language and voice, create voiceovers, adjust the volume to supplement background music, and finally check the video through the preview function. InVideo AI is a live video service that is necessary for media and content video producers who do not have the skills or manpower needed to create high-quality Generative AI.

CONCLUSION

It has become an era in which all users implement images, music, and videos for generative Generative AI, such as media and content case analysis for generative Generative AI. Therefore, it is necessary to examine how new AI technological innovations have affected the media and content industries in light of past cases.

Historically, the media. It is hard to find an industry that has been as influenced by technology as the content industry. Various image content industries arose as photography technology was developed from painting such as portraits, and the film and drama industries arose as performances such as plays were put on film through camera technology and implemented on the screen. Since then, broadcasting contents such as dramas, entertainment, news, and sports have occurred as radio and TV technologies have developed, and since smartphones were developed and popularized, the development of the Internet and mobile networks has allowed the world to watch dramas and movies at the same time without time and space constraints through OTT global platforms. In addition, the era of individuals broadcasting and individuals creating business models has opened through SNS services.

As of 2024, generative Generative AI is awaiting the following changes. The new technology has also reduced the size of jobs and industrial pies in existing industries, such as portrait painters, performers in neighborhoods, and even workers in the legacy broadcasting industry. However, operators who identified this paradigm shift in advance and quickly integrated it into the media and content industries have become leaders in new market changes, such as Netflix, and creators who are active in new media such as YouTube. Therefore, media and

content practitioners who are witnessing these changes need to track the changes that are occurring in real Generative AI, use various services directly, and look at what opportunities will come to the media and content industry.

As a result, in order to have a competitive advantage in the media and content environment that changes day by day with the introduction of new technologies, rapid response is essential. In addition, in order to quickly acquire new technologies and utilize them in the media and content areas, it is important to consider change as an opportunity rather than a crisis and respond quickly and appropriately to change. Therefore, at the end of the study, I would like to suggest that 3I (Inquiry-Inspection-Idea) is actively utilized as three ways to have a competitive advantage through live Generative AI [2].

The first is to learn how to ask questions [2]. This is called a prompt. Depending on the raw Generative AI questioning method, the results may vary widely. Therefore, it is important to learn how to select appropriate prompts and ask questions, which will allow more accurate and faster results to be obtained [2].

Second, 'inspection of generative Generative AI results' is required [2]. Due to the nature of the live Generative AI language model, the results are produced with a human-made database, so the user who asks the result is fully responsible. Therefore, the user must ensure that the results produced by the raw Generative AI match the question intention and are true [2].

Finally, you need to add your expertise and creativity to the generative Generative AI and water (idea). It is important to leverage one's expertise to add new ideas to the raw Generative AI results [2]. In the end, since it only plays an auxiliary role of live Generative AI users, it can lead to an ultimate competitive advantage when its own expertise is added [2]. In other words, even if the same image generation model is used, a more complete work can be produced through the user's modification work.

The utility and potential of generative Generative AI are endless. Therefore, the use of live Generative AI technology in the media and content fields is a requirement of the times for the global media and content industry.

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