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A Study on AI Technology for Efficient and Creative TV Commercial Production

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Abstract

Generative AI technology is an innovation that saves time and cost and promotes creativity in the process of discovering ideas for advertising production, creating storyboards, and producing advertising videos and voices through various technologies such as text-image generation, image-image conversion, and voice synthesis. established as a tool. It provides differentiated advantages and synergies compared to existing advertising production methods, and shows the potential to accelerate innovation in the advertising industry by giving advertising creators more options and flexibility. The use of these technologies does not simply increase efficiency, but serves as an important turning point that requires changes in creative methods, suggesting the possibility of transitioning to a future-oriented advertising production model that combines creative ideas and technical efficiency.

Keywords: *Generative AI, artificial intelligence, text-to-image generation, image-to-image conversion, advertising production, idea generation, storyboard creation, time and cost savings, creativity.*

1. INTRODUCTION

1.1 Research Background

The advertising industry is changing rapidly with the development of digital technology, and the introduction of artificial intelligence (Generative AI) technology is opening up new possibilities in TV commercial production. Generative AI is a technology that automatically generates text, images, and videos, and supports diverse content production at each stage of commercial production. Generative AI is attracting attention as an innovative tool that shows new growth potential from existing production methods.

1.2 Research Purpose

This study analyzes how generative AI technology can be used in the TV commercial production process to provide innovative approaches in stages such as idea generation, storyboard development, video

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production, and post-editing. Through this, we evaluate the effectiveness of generative AI technology in reducing the time and cost of commercial production and enhancing creativity, and propose a new advertising production paradigm through comparison with existing production methods.

1.3 Research Method

We analyze actual cases of advertisements produced using generative AI, and compare and analyze the existing TV advertisement production process with the TV advertisement production process using generative AI. Through this, we verify specific efficiency.

2. RESEARCH CONTENT

2.1 Analysis of cases using generative AI technology

2.1.1 Storytelling-centric Advertising



<Figure 1.
Google Search "Reunion">

In advertising, where emotional connection and storytelling are important, generative AI can play a big role. Generative AI can strengthen emotional connections with viewers by automatically generating various scenarios and stories that induce emotional responses. In particular, using generative AI technology in advertising that conveys a product's brand story or a touching narrative can make creative ideas easier to implement. This advertisement shows the power of Google Search by focusing on the story of two friends reuniting across the divided borders of India and Pakistan. It conveys a touching story and the message that Google is not just a tool that provides information, but can connect and change people's lives, as shown in Figure 1.

2.1.2 Visual effects-focused Advertising



<Figure 2. Guinness "Surfer">

Generative AI is effective in advertising genres where visual elements are important because it has strengths in image generation, video synthesis, and special effects. In particular, in advertisements that require animation effects or in the style of science fiction movies, generative AI can implement high-quality visuals at a low cost. This is very efficient because it can deliver effective visual impact even with a limited budget. This advertisement uses a cool visual effect to express the image of waves chasing a man surfing, and connects the patience of a surfer waiting for a wave with beer. As shown in Figure 2, visual effect-centered advertisements capture the intensity and patience that are at the core of the campaign message.

2.1.3 Product Description-Centric Advertising






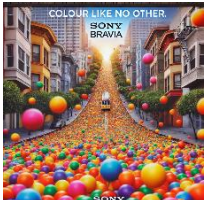



<Figure 3.
Volvo "Safety Features">

Generative AI is also useful for advertising that visually explains the functions or usage of complex products in an easy-to-understand manner. For example, as shown in Figure 3, 3D models or animations generated by generative AI can be used to visually explain the operating principles or usage methods of a product. This method helps to increase viewers' understanding and enhance product reliability. Since complex technical elements are difficult for consumers to easily understand, having experts explain the importance of these functions strengthens consumer trust.

2.2 Comparative analysis of the production process between the conventional method and the method using generative AI in the TV commercial production process

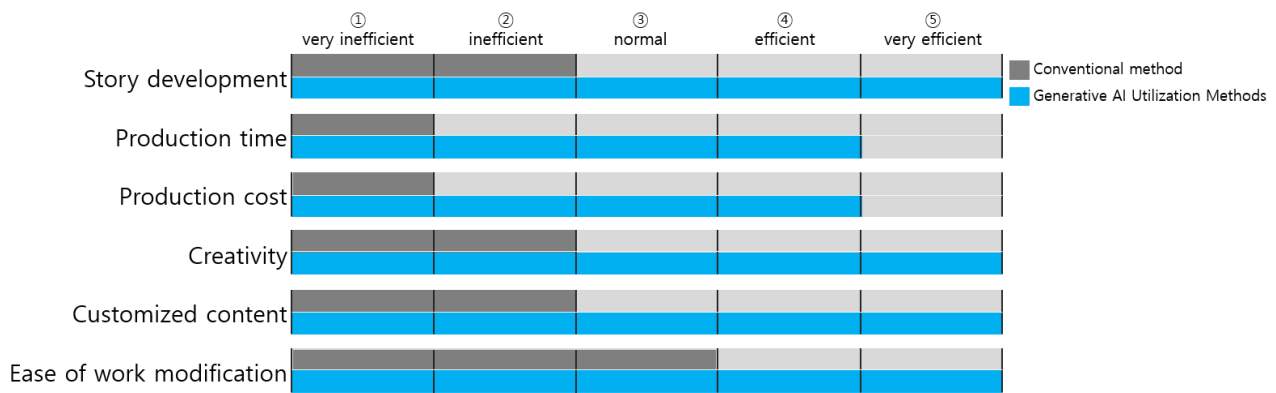
<Table 1. Comparison of the production process between the existing method and the generative AI method in the TV commercial production process>

	Conventional method	How to use generative AI
Idea generation and planning	It is time-consuming, requiring brainstorming, surveys, etc., as it relies on human creativity.	You can suggest various advertising concepts or ideas based on a given topic or keyword. It has the effect of shortening time and expanding creative possibilities by supplementing creative ideas or suggesting new perspectives.
Storyboard and Scenario Development	<p>The screenwriter and artist collaborated to make several revisions.</p>  	<p>When you input visual elements as text or images into the image-generating AI program “Midjourney,” images are automatically generated. This has the effect of shortening production time by quickly generating images to be used in storyboards.</p> <p><① Gym injury scene > < ② Hospital scene></p>   <p><Enter text for “Midjourney”></p> <p>① A teenage Korean girl wearing a red sleeveless tracksuit and black shorts sits on the floor, holding her legs in pain.</p> <p>② A hospital room. The white curtains are down, and he has a cast on his knee and a look of despair.</p>
Filming and directing	<p>It requires casting actors, locations, equipment, etc., and actual filming.</p> 	<p>Digital advertising can be created without actual filming by utilizing virtual images, videos, 3D models, etc. generated by generative AI.</p>  
Post-production	It takes a lot of time to edit videos, do color correction, and edit sound.	Generative AI reduces production time by automatically editing and adding special effects, and synthesizing voice and music.

Final review and revision	The revision process is repeated based on client feedback.	Generative AI can reflect changes in real time, increasing the efficiency of the feedback process.
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2.3 Analysis of the efficiency of using conventional and generative AI technologies in TV commercial production

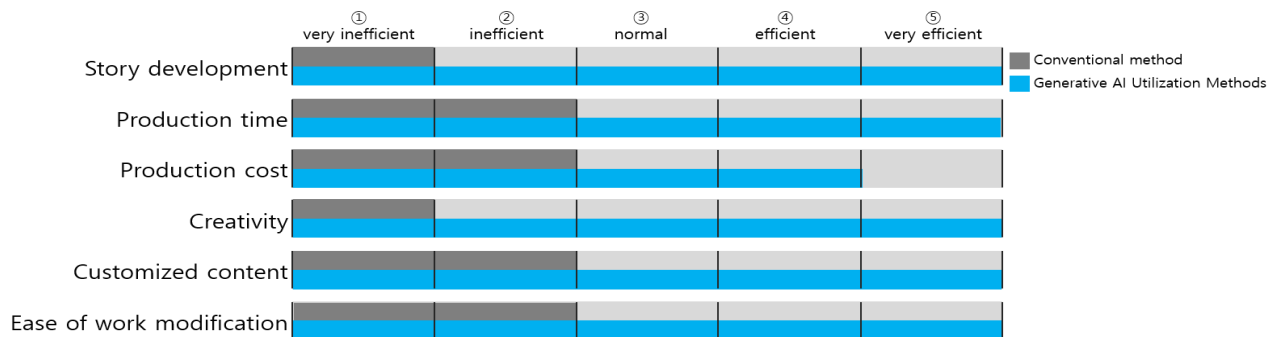
2.3.1 <Game: Storytelling-centered> Comparative analysis of the efficiency of conventional and generative AI methods in TV commercial production



<Figure 4. <Game: Storytelling-centered> Comparative analysis of the efficiency of existing methods and generative AI utilization methods in TV commercial production>

Generative AI, rated “very efficient” in story development, creativity, and customized content, shows an efficiency improvement of 30 to 40 percent over existing methods. In terms of production time and production cost, it was evaluated as "very inefficient" in the existing method, but it suggests the possibility of improvement by at least 50% when using generative AI. The ease of modifying work was evaluated as average for the existing method, but the flexibility and repeatability of the modification process were significantly improved through the use of generative AI. Therefore, it is analyzed that the production method using generative AI has the effect of improving efficiency.

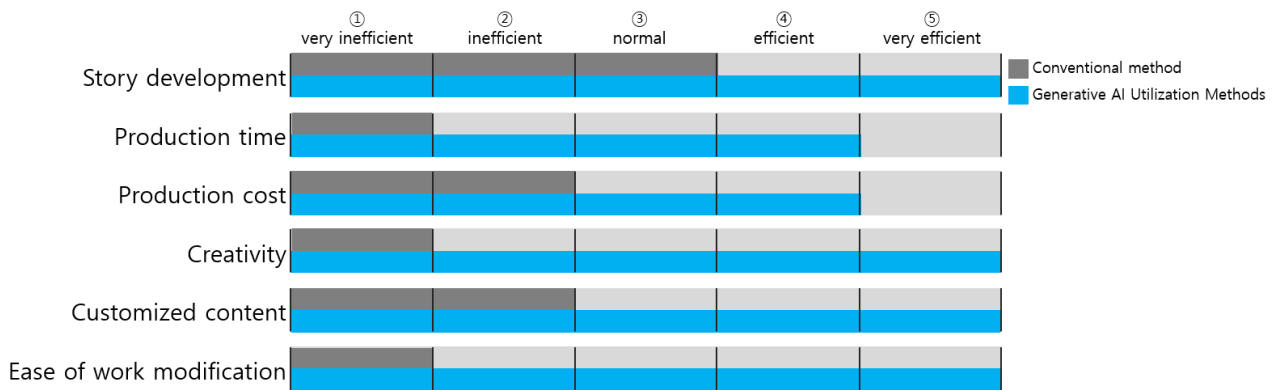
2.3.2 <Corporate Image: Focused on Visual Effects> Comparative analysis of the efficiency of conventional and generative AI methods in TV commercial production



<Figure 5. <Corporate Image: Focused on Visual Effects> Comparative analysis of the efficiency of existing methods and generative AI utilization methods in TV commercial production>

The graph above shows that when producing a corporate image advertisement on TV with a focus on visuals, the production time and cost were evaluated as "inefficient" in the existing method, but as the efficiency is improved by about 30 to 40% through the use of generative AI, AI can perform repetitive tasks. It is analyzed that it can minimize and quickly produce visual materials, shortening the production time by up to 40 to 50% compared to existing methods, reducing labor costs through automated processes, and increasing the cost efficiency of the overall project.

2.3.3 <Apple Watch: Focused on Product Description> Comparative analysis of the efficiency of conventional and generative AI methods in TV commercial production



<Figure 6. <Apple Watch: Focused on Product Description> Comparative analysis of the efficiency of existing methods and generative AI utilization methods in TV commercial production>

The graph above is a five-step comparative analysis of the efficiency of the existing method and the generative AI method when producing an Apple Watch advertisement centered on product descriptions on TV. Traditional methods of story development provide a certain degree of stability in story development, Generative AI has significantly improved efficiency by automating data-based text creation and story development. In particular, it has strengths in intuitive and clear storytelling, such as product descriptions. In terms of creativity and customized content production, generative AI shows an efficiency improvement of more than 50% compared to existing methods. In particular, it demonstrates differentiated competitiveness in data-based personalized advertising production. Even in terms of ease of modifying work, the existing method required a long time and a lot of resources. AI is analyzed to increase efficiency by more than 60% through automated correction tasks.

4. CONCLUSION

Through this study, using generative AI methods in TV commercial production increases efficiency in saving time and costs. We confirmed that we can effectively respond to rapidly changing market demands through the creation of various customized contents and the ease of modifying work.

Generative AI makes great progress over existing methods in story development, creativity, and customized content provision, and presents the possibility of maximizing advertising production efficiency while maintaining consistency with specific brand messages. From a practical perspective, this can be used as a tool to strengthen market competitiveness through innovation in the advertising production process.

From an academic perspective, there is great potential for development as a research topic that deepens the convergence of advertising production technology and creative processes. Therefore, generative AI presents a new paradigm for TV advertising production and is expected to establish itself as a key tool that leads to groundbreaking changes in the advertising industry. AI is analyzed to increase efficiency by more than 60% through automated correction tasks. Even in terms of ease of modifying work, the existing method required a long time and a lot of resources. AI is analyzed to increase efficiency by more than 60% through automated correction tasks.

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