

The Role of Image Generative Artificial Intelligence in Optimizing Digital Visual Assets for Animation and Motion Graphics Content

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ABSTRACT

This Community Service Program (PKM) was conducted to introduce and promote the use of Motion Graphics and Image Generative AI technologies as innovative tools to support digital content creation, particularly in the context of industry and government institutions. Through a workshop format, participants were provided with an overview of how these technologies can improve the quality, clarity, and appeal of visual communication. The session included a conceptual explanation of Image Generative AI, such as Adobe Firefly, which allows users to generate visual assets through text prompts, and Adobe After Effects, a powerful tool for producing dynamic animations and motion graphics. Participants actively followed the material presented and showed interest in how these tools can be applied in real-world promotional or branding efforts. The workshop concluded that integrating these technologies holds great potential for enhancing institutional communication strategies. Future programs are expected to include more hands-on and practice-oriented sessions to further develop participants' digital production skills.

Keywords: *image generative AI, visual optimization, digital asset, motion graphic, animation*

1. INTRODUCTION

The development of Motion Graphics technology and social media has opened new opportunities to enhance communication effectiveness in both industrial and government sectors, where engaging visualizations, dynamic message delivery, and strategic promotion are essential elements in strengthening branding and reaching a wider audience. However, many companies and institutions still face challenges in fully utilizing these technologies due to limitations in knowledge, technical skills, and resources (Kohli et al., 2018). Therefore, community service activities are needed to provide guidance on the strategic use of Motion Graphics and social media for communication and promotional purposes. In a previous community engagement program (PKM), the author focused on optimizing Motion Graphics for information visualization, social media, and branding to improve communication and

promotional effectiveness across industrial and governmental sectors. This activity aims to provide tangible benefits by enhancing communication, expanding promotional reach, and strengthening brand identity, while also encouraging the adoption of modern visual technologies to boost competitiveness (**Anantrasirichai & Bull, 2022**).

The use of digital technologies such as Motion Graphics and Image Generative AI plays a significant role in improving the quality of visual communication in PKM activities. Motion Graphics can deliver information in an engaging and easily understandable manner (**Das, 2024; Pianese & Belfiore, 2021**), while Image Generative AI platforms like Adobe Firefly allow for efficient and affordable creation of text-based images and animations (**Angelova, 2024; Bañez, 2024; Yang & Kim, 2024**). Adobe After Effects supports the creation of dynamic graphic animations with keyframes, visual effects, and spatial-temporal compositions. The book *Adobe After Effects CC Classroom in a Book* (**Fridsma & Gyncild, 2017**) emphasizes the importance of understanding motion logic and animation workflows, while *Learn Adobe After Effects CC* (**Dockery & Chavez, 2019**) highlights a project-based approach. The combination of generative AI and Adobe After Effects allows anyone to produce professional visual content through structured and practical techniques.

The role of AI in this context becomes increasingly important as it accelerates the production of motion graphics by providing easily accessible tools that support creativity. The presence of this technology allows creators to focus more on the strategic and artistic aspects of digital content (**Kosir & Tomc, 2022; Saputra et al., 2021**). The synergy between technical expertise in Adobe After Effects and the utilization of generative AI creates great opportunities to produce innovative, impactful, and relevant animated content that meets the needs of contemporary communication.

Through this PKM activity, the utilization of Motion Graphics and Image Generative AI technology has proven to enhance the participants' ability to create communicative, engaging, and professional visual content without requiring an in-depth design background. The combination of technical skills in Adobe After Effects and the ease of AI-based visual production offers practical solutions for industrial and governmental institutions to strengthen their communication and promotional strategies. The main contribution of this PKM activity is to provide participants with knowledge, skills, and inspiration to strategically adopt modern visual technologies, thereby improving the effectiveness of information delivery and strengthening the institution's image in the digital era.

2. METHOD

This workshop was part of IMWORK, the largest technology event themed Industrial 4.0 Symposium & Enterprise Intelligence Seminar. Carnival IMWORK 2024 covered topics including Digital Transformation, Business Intelligence, Cyber Security, and Big Data & Generative Intelligence. The PKM workshop was held on Tuesday, October 15, 2024, at The Zuri Hotel, Palembang. The workshop participants came from diverse backgrounds, primarily practitioners, and students. Most were based in South Sumatra, particularly in the city of Palembang, where the event was held.

The method used in the implementation of this program includes a series of activities designed to provide both theoretical understanding and practical skills to participants. The program is carried out in three main stages: lectures and Q&A sessions, practical demonstrations, and feedback and evaluation. This PKM is conducted through a workshop format to ensure hands-on engagement with the content. Each stage is conducted to ensure that participants not only

understand the basic concepts but can also apply them in real-world contexts relevant to industry needs.

Furthermore, this program adopts a community-based participatory research approach, where participants from various backgrounds are actively involved throughout the learning and implementation process. This participatory method ensures that the program remains relevant to the specific needs of the participants and the broader community. By involving the participants directly, the workshop fosters collaborative learning and mutual exchange of knowledge, which enhances the applicability and impact of the Generative AI technology in their respective fields.

2.1 Lectures and Q&A Sessions

- **Objective:** To provide participants with theoretical understanding of the basic concepts of Motion Graphics, how graphic elements and animation are combined to create dynamic visual content, and the importance of social media in digital promotion.
- **Description:** This lecture session will cover the fundamental principles of Motion Graphics and Image Generative AI technologies, including their benefits and the challenges faced by the industry in utilizing these technologies. During the Q&A session, participants will have the opportunity to ask questions directly to the speakers to deepen their understanding and gain solutions to the issues they face in applying these technologies.
- **Method:** Lectures interspersed with interactive discussions and Q&A to ensure participants' understanding of the material presented.

2.2 Practical Demonstration

- **Objective:** To provide participants with hands-on experience in using Image Generative AI for creating visual content, as well as applying Adobe After Effects to create animations and Motion Graphics from images generated by AI.
- **Description:** In this demo session, participants will be taught how to use Image Generative AI platforms such as Adobe FireFly, which allows them to create images from text input. They will then see how these images can be further processed using Adobe After Effects to produce engaging animated content. Case studies relevant to industry needs will be used as examples to show how this process can be applied in creating visual content for promotion.
- **Method:** A practical session based on real-world case studies, where participants are given direct, hands-on tutorials in the form of structured and systematic demonstrations of technology use.

2.3 Feedback and Evaluation

- **Objective:** To gather feedback from participants to evaluate the effectiveness of the training and ensure that the program meets its intended goals, which are to enhance participants' understanding and skills in using Image Generative AI and Motion Graphics for digital promotion purposes.
- **Description:** After the lecture and practical demo sessions, participants will engage in group discussions to provide feedback. These discussions will explore various aspects, including participants' satisfaction with the material presented, the relevance of the case studies to their needs, and their experience during the practical demo. The insights gained from these discussions will help improve future training sessions.

- **Method:** Utilizing interactive group discussions to assess participants' understanding of the material presented and evaluate how effectively the training provided new insights into the use of AI and Motion Graphics technologies.

This program is designed with a balanced theoretical and practical approach, where participants are not only provided with basic knowledge through lectures but are also directly involved in the content creation process using generative AI technology. Case study-based sessions will help participants observe the real-world application of these technologies in the industry. By providing them with insights and practical skills, it is expected that they can immediately implement what they have learned in their daily work, especially in sectors that require the creation of visual content and animations for digital promotion.

The program also takes into account the diverse skill levels of the participants, offering them the opportunity to learn at a pace tailored to their abilities. Additionally, the feedback evaluation received will serve as the foundation for improving the quality of future training sessions, ensuring the continued impact and effectiveness of the program on participants.

3. RESULTS AND DISCUSSION

The results of this workshop activity reveal several key findings that highlight the effectiveness of the training and the potential of Image Generative AI in the industry context:

1. High Participant Enthusiasm

During the discussion and practical sessions, participants showed a high level of enthusiasm. Their active participation reflected a strong interest in Motion Graphics and Image Generative AI technologies. This was clearly evident from their involvement in every Q&A session, where they not only asked questions but also shared ideas on how to apply these technologies in their respective industries.

2. Solid Understanding of Concepts and Practical Applications

Most participants demonstrated a solid understanding of the concepts of Motion Graphics and its application in branding and visual promotion. They were able to connect the material taught to practical needs in the industry, particularly in creating more engaging and interactive content for promotion via social media and other digital platforms.

3. Suggestion for Expanding Practical Sessions

As feedback, participants suggested the need for more practical sessions to deepen their understanding of the tools and technologies taught, such as Adobe Firefly and Adobe After Effects. They expressed a desire for more time for hands-on exploration, so they could further develop their skills in creating more complex visual content.

4. Potential of Image Generative AI in Enhancing Quality and Efficiency

Group discussions also highlighted that the use of Image Generative AI holds significant potential for improving the quality and efficiency of visual content production. Participants recognized that this technology allows them to produce high-quality visuals in a shorter time and at a lower cost, without sacrificing their creativity. Therefore, adopting this technology can support the industry sector in accessing modern visual technologies in a more affordable and user-friendly manner.

Furthermore, the direct benefits of the workshop to the participants and the broader community include the ability to utilize AI technology to optimize digital assets and improve the effectiveness of visual and multimedia content creation. This practical application is expected to enhance the productivity and creativity of participants in their professional or academic contexts.

To ensure sustainability and continued relevance, we plan follow-up activities such as advanced training sessions, technical mentoring, and the provision of accessible materials and documentation for participants after the workshop concludes. These efforts aim to maintain the program's benefits and address the evolving needs of the community in a sustainable manner.

Participants expressed a positive response to the introduction of Generative AI tools in the context of motion graphics and digital content production. Several attendees suggested follow-up sessions with more hands-on practice, particularly in integrating AI-generated assets into professional software such as Adobe After Effects. Overall, participants found the workshop relevant and timely given the rapid adoption of AI in creative industries.

3.1 Workshop Materials

Figure 1 shows the user interface of Firefly by Adobe as participants create text-based visual assets. This process became one of the highlights for participants, as they were able to create visual assets using only text as input, which was particularly beneficial for those without a graphic design background.

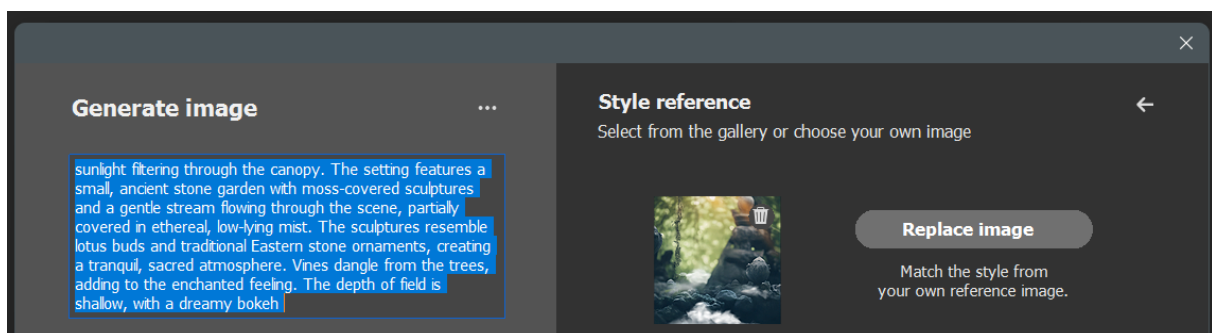


Figure 1. The Process of Inputting a Text Prompt to Generate an Appropriate Image

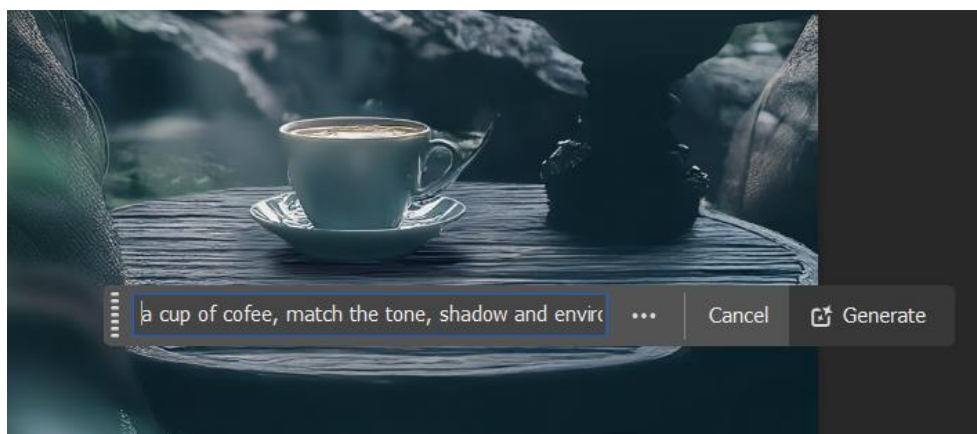


Figure 2. The Process of Inputting a Text Prompt to Generate Additional Objects

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The process of inputting a text prompt to generate supporting objects involves providing a clear description to represent the desired visual elements, such as "a cup of coffee, match the tone, shadow and environment" Based on this description, the Image Generative AI technology processes and generates an image that includes the mentioned elements, such as flowers, trees, and sunlight, in the desired context and visual style. In this way, users can easily create complex images that meet their needs without deep graphic design skills, using AI to produce relevant and attractive visual objects. As shown in Figure 2.

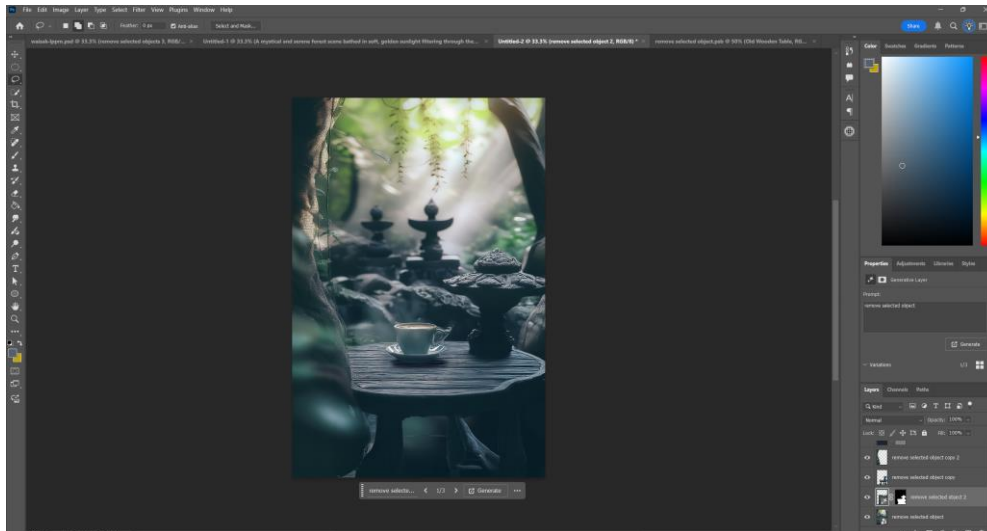


Figure 3. The Process of Layer Separation

Figure 3 illustrates the AI-generated visual output that is further processed through layer separation for each visual element, such as the background, main objects, and text. This step allows each component to be managed independently during animation or further editing. Once separated, the elements are saved in *.psd (Photoshop Document) format, which preserves the layer structure and facilitates integration into animation software like Adobe After Effects for creating dynamic and professional motion graphics.

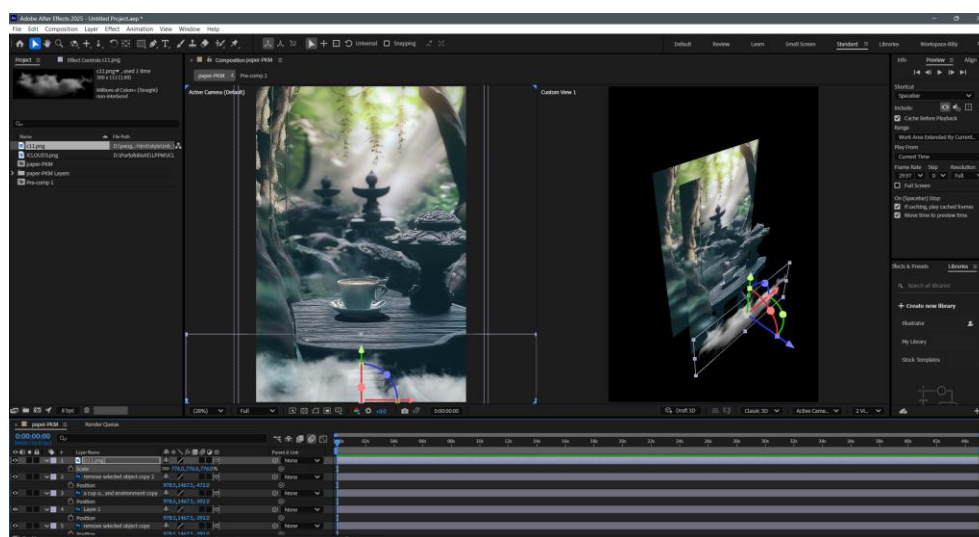


Figure 4. The Process of Repositioning Each Layer in a 3D Format in Adobe After Effects

The process of repositioning each layer in a 3D format in Adobe After Effects involves enabling the 3D layer option, which allows each visual element to be manipulated along the X, Y, and Z axes. This enables the creation of depth and spatial relationships between layers, allowing designers to arrange background, foreground, and supporting objects more dynamically. By adjusting position, scale, and rotation in 3D space, motion graphic designers can simulate camera movement, parallax effects, and more immersive visual experiences that enhance the storytelling and visual appeal of the final animation. As shown in Figure 4.

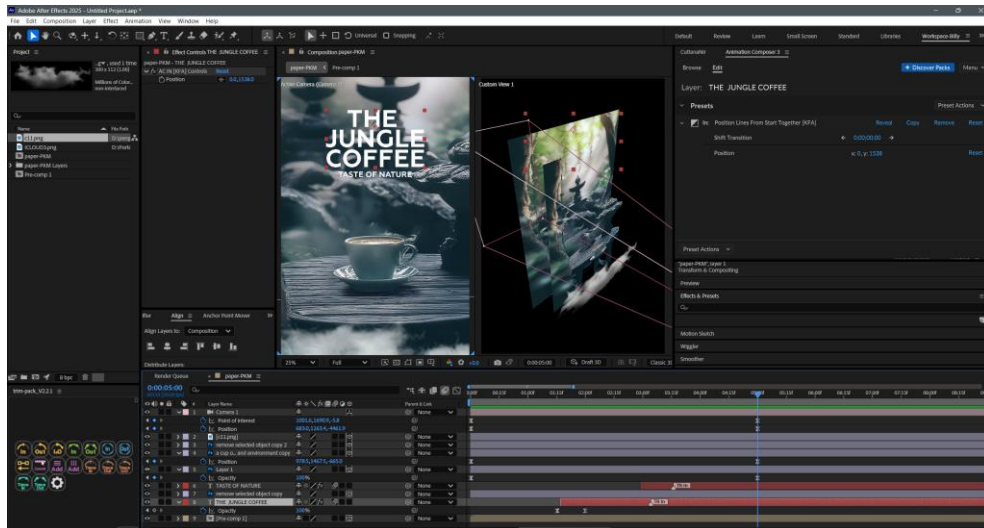


Figure 5. The Process of Adding Keyframes and Text Animation Elements According to The Brand

Figure 5 shows the process of adding keyframes and branded text animation elements in Adobe After Effects. In this stage, motion is applied to specific text elements by setting keyframes that define the starting and ending points of the animation, such as position, opacity, or scale. The text animations are designed to reflect the visual identity of the brand, ensuring consistency in tone, color, and style. This process enhances the dynamic presentation of messages, making the visual content more engaging and aligned with the institution or company's branding strategy.

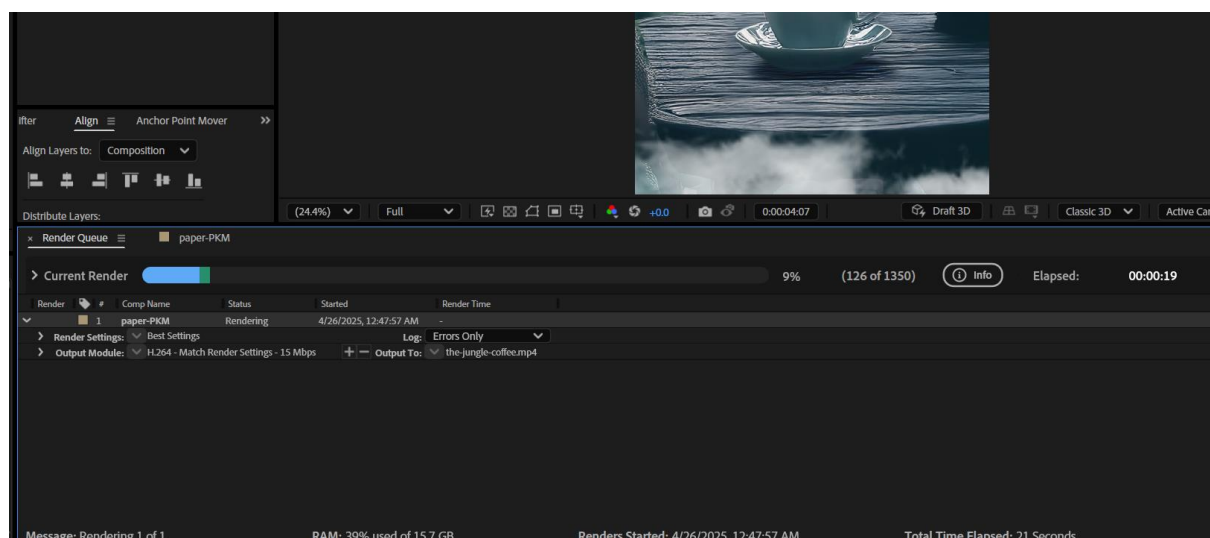


Figure 6. The Rendering Process into *.mp4 File Format

Figure 6 depicts the rendering process into the *.mp4 file format in Adobe After Effects. In this stage, the project, which includes all visual elements, animations, and effects, is compiled into a single video file. Users select the desired output settings, such as resolution, frame rate, and quality, before choosing the *.mp4 format for efficient digital distribution. This rendering process converts all layers, keyframes, and effects into a final video file ready for publication or sharing.

3.2 Workshop Activity Documentation

The documentation of this PKM activity covers various important stages in the implementation of the workshop, ranging from participant registration, the presentation of materials by the speaker, to participant interactions during the discussion sessions. This documentation aims to record each step of the activity as a reference and evaluation for improving the quality of future events.



Figure 7. The Speaker Presented the Material



Figure 8. Workshop Participant Registration

Figure 7 shows the speaker presenting workshop material to the participants, providing valuable insights and practical demonstrations. Figure 8 depicts the participant registration process for the workshop. It can be seen here that participants are registering for the workshop by filling out forms or signing up at the registration desk provided. This process is an important first step in ensuring that participants are enrolled and have access to the materials that will be presented during the workshop.



Figure 9. Workshop Participants

Figure 9 displays workshop participants who are focused and engaged, demonstrating their attentiveness during the session. Figure 10 showcases the PKM members, the individuals responsible for organizing and ensuring the smooth execution of the workshop. Lastly, Figure 11 features the PKM banner, symbolizing the workshop's identity and its connection to the larger community service project.



Figure 10. The PKM members



Figure 11. The PKM Banner

4. CONCLUSIONS

The Community Service Program (PKM) titled The Role of Image Generative AI in Optimizing Digital Image Assets in Animation and Motion Graphics Content was successfully carried out in the form of a workshop. This activity provided participants with valuable insights into the potential of Motion Graphics and Image Generative AI technologies, and how both can be utilized to enhance the quality of visual communication in industrial and governmental sectors. Participants showed strong focus and enthusiasm throughout the delivered sessions.

The workshop empowered participants by enhancing their ability to utilize AI-driven tools to optimize digital assets, which is expected to increase productivity and creativity in their professional or academic fields. This practical impact reflects the program's relevance to the current needs of the community. Moving forward, it is necessary to develop follow-up activities that include hands-on practice sessions so that participants can gain a deeper understanding of tools such as Adobe After Effects and Adobe Firefly. Such initiatives will encourage broader and more practical adoption of visual technologies across various fields and ensure the sustainability of the program's benefits.

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