The Reshaping of the Creative Industry Value Chain by Generative Artificial Intelligence: A Study Based on the Content Production Segment

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Abstract: With the rapid development of the digital economy, the creative industries are experiencing profound transformations, especially with the rise of generative artificial intelligence (AIGC). This study explores how AIGC reshapes the content production segment of the creative industry value chain, analyzing its impact on business creation and collaboration models. Through a combination of literature review and case studies, the research focuses on three key areas: creative generation, content creation, and post-production optimization. The findings reveal that human-AI collaboration enhances production efficiency, creative diversity, and innovation. AIGC significantly improves creative output, optimizes resource allocation, and drives business model innovation. However, challenges such as originality protection, copyright ownership, and job displacement also arise. The study proposes the establishment of management frameworks to regulate AI integration, develop content quality standards, and strengthen creator training. This research enriches the intersection of the digital economy and creative industries and provides practical guidance for businesses in intelligent content production.

Keywords: Generative Artificial Intelligence; Creative Industry; Value Chain; Content Production; Human-AI Collaboration; Production Efficiency

1. Introduction

With the booming development of the digital economy, the creative industries are undergoing unprecedented transformations. The creative industries encompass several subfields such as advertising, film, gaming, design, and music, with the core value creation processes centered around content production and creative design. However, traditional creative content production often faces challenges such as high costs, long cycles, and a shortage of creative resources, making it difficult to meet the ever-accelerating market pace and consumers' demands for personalized and real-time content. At the same time, the rapid breakthroughs in generative artificial intelligence (AIGC) technology provide a new solution to these challenges. Represented by large language models, diffusion models, and multimodal generative models, generative AI can generate high-quality text, images, audio, and video in a very short period, offering the creative industries new production tools and creative paradigms[1].

The application of generative artificial intelligence in the creative industries is rapidly expanding, with its impact not only limited to creative drafts or assisted design but also penetrating the entire value chain, especially the core processes of content production. From advertising creativity to film scene breakdowns, from game scene design to brand visual system construction, AI technology is driving content output at a lower cost and faster speed. This change not only enhances production efficiency but also alters the creative process. Human-AI collaboration is gradually becoming the norm, with the role of creators shifting from "the sole producer" to "creative guide and reviewer," while AI takes on a large number of repetitive and procedural creative tasks.

Research on the impact of generative artificial intelligence on the creative industry value chain is of great theoretical and practical significance. From a theoretical perspective, traditional value chain research is mostly based on manufacturing or traditional service industries, emphasizing the production and distribution of physical products, while paying insufficient attention to the value creation laws of the digital economy, especially in the creative industries. With the involvement of generative artificial intelligence, the creative industry value chain presents new characteristics, such as the automation of creative generation, accelerated iteration in production processes, and diversification of value capture. Exploring these changes not only helps enrich value chain theory but also provides new perspectives for understanding innovation models in the digital age. From a practical perspective, enterprises, advertising agencies, film production companies, and other market participants urgently need to understand how to leverage generative artificial intelligence to optimize production processes, reduce operational costs, and maintain an innovation advantage in a highly competitive environment.

This study aims to answer the following core questions: How does generative artificial intelligence change the content production segment of the creative industry value chain? What is the mechanism behind this change? How should enterprises adjust their creative processes and collaboration models to fully leverage the potential of generative artificial intelligence? To this end, this paper will first review the research on the creative industry value chain and generative artificial intelligence, identifying the research gap; then, from a theoretical perspective, it will analyze the reconstruction mechanism of content production through generative artificial intelligence and propose an analytical framework that describes the human-AI collaboration, efficiency improvement, and value creation paths; finally, it will summarize the research conclusions and offer insights for enterprise practice and future research directions.

Through systematic theoretical analysis, this paper aims to reveal the role of generative artificial intelligence in reshaping the creative industry value chain, enriching the intersection of digital economy and creative industry research, and providing reference for enterprises in content production and strategic adjustments in the age of artificial intelligence.

2. Literature Review

2.1 Creative Industry Value Chain Research

The creative industry value chain is an important analytical framework for studying how creative products and services create, deliver, and realize value. The earliest value chain research originated from the manufacturing sector, emphasizing linear processes from raw material procurement, production, distribution, to final consumption, with a focus on improving efficiency and controlling costs[2]. However, creative industries differ significantly from traditional manufacturing, as their value creation relies on creative ideas and cultural content, with knowledge, aesthetics, and emotions as key resources. The realization of value is not only dependent on tangible products but also closely related to consumers' emotional resonance, identity recognition, and cultural participation. As a result, researchers have expanded the value chain theory, suggesting that the creative industry value chain should include stages such as creative generation, content production, channel distribution, market promotion, and consumer feedback, emphasizing non-linear value creation and multi-directional interactions[3].

Academics generally agree that the creative industry value chain has three key characteristics: First, creative generation is the starting point of the chain, and originality and innovation capabilities determine the core competitiveness of the value chain[4]; Second, collaborative networks are crucial for value creation, as creative production often relies on multi-party cooperation, including designers, technicians, marketing teams, etc.[5]; Lastly, the value realization process heavily depends on consumer participation, where user feedback, evaluation, and even re-creation directly affect the spread and commercial value of creative products[6]. With the widespread use of digital technologies, this value chain has undergone significant changes. Digital tools and platforms have lowered the entry barriers for content production and distribution, enabling more creators to enter the industry chain. Simultaneously, consumers participate in co-creation through comments, shares, and secondary creation, forming a dynamic, cyclical ecosystem. Scholars have suggested that the creative industry value chain is evolving from a one-way transmission model to a networked value chain driven by user participation and data[7].

2.2 Generative Artificial Intelligence Research

Generative artificial intelligence is an important frontier in artificial intelligence, capable of generating semantically logical and aesthetically characteristic content, such as text, images, audio, and video, by learning and modeling large-scale data[8]. Technologically, early research focused on deep learning models and generative adversarial networks, while recent breakthroughs in diffusion models and pre-trained large models have greatly enhanced the quality and diversity of generation, bringing the generated content closer to human-level realism and creativity. This technological advancement brings new possibilities to the creative industries, with researchers pointing out that generative AI can help creative professionals quickly complete draft designs, scene concepts, script ideas, music melodies, and visual style transfers, significantly shortening the cycle from inspiration to finished product[9].

In practice, generative artificial intelligence has been widely applied in fields such as advertising design, film production, game development, and media creation. For example, in advertising, AI models automatically generate multiple versions of advertisement materials and test audience responses, thus enabling precise targeting and dynamic optimization. In the film industry, AI is used for generating storyboards, assisting in special effects, and post-production compositing; in gaming, AI generates rich scene elements and character designs, enhancing immersion and interactivity. Scholars generally agree that this technology not only improves production efficiency but also promotes the personalization and long-tail development of the creative industries, enabling creative products to meet the needs of niche markets more precisely[10].

Despite these advancements, generative artificial intelligence also triggers many discussions in both academia and industry. First, there is the issue of originality and copyright, as the intellectual property rights of AI-generated content have not been unified, leading to potential infringement risks. Second, there are concerns about algorithmic biases and content security issues, as biased training data may result in generated content that reinforces stereotypes or spreads inappropriate information[11]. Lastly, the impact on creative labor has raised concerns, with some studies fearing that AI might replace low-end creative positions, altering the employment structure in the industry[12]. These challenges highlight the need for governance systems to align with the application of generative artificial intelligence to ensure the sustainable release of technological dividends.

Despite the fact that the aforementioned studies have discussed the potential and challenges of AIGC from a macro perspective, a series of industry reports and empirical studies in recent years have started to provide more quantifiable evidence for its improvement in production efficiency. As shown in the table 1 below, AIGC has demonstrated significant efficiency optimization effects in the content production segments across multiple creative subindustries:

These specific data strongly validate the immense potential of AIGC in reshaping the production models of the creative industry. However, a review of existing literature reveals that most studies still focus on technological breakthroughs and application cases themselves, or, as shown in this table, emphasize the terminal performance of production efficiency. There is still a relative lack of in-depth, systematic analysis of how AIGC is integrated and reconstructs the creative industry value chain, particularly regarding the internal processes, collaboration models, and value creation paths within the content production segment. This research gap is precisely the entry point for this study.

Table 1. Summary of Empirical Data on Efficiency Improvements in Content Production in the Creative Industry through Generative Artificial Intelligence

Source of Literature/Report	Published Report/ Organization	Creative Subindustry Focused	Core Research Findings/Key Efficiency Indicators
IEEE (2024)	Industry 5.0: Generative AI for Content Generation	Product Design, Advertising, Media	The use of design tools can reduce the number of concept iterations from 10-12 to 2-3, shortening the overall project cycle by approximately 40%.
IFN (2023)	Why generative AI can make creative destruction more creative but less destructive	Advertising, Video, Audio Production	With AI-assisted content editing, the average editing time is reduced by 35%, while costs decrease by 20-25%.
Journal "Information	Generative AI and ChatGPT: Applications,	Marketing, Journalism,	AI-powered automated script and material generation can increase content output

Systems Frontiers" (2023)	challenges, and AI-human collaboration	Gaming, Art Creation	speed by 2-3 times and significantly reduce the proportion of repetitive tasks.
Academic Review (2023)	A Comprehensive Survey of AI-Generated Content (AIGC)	Multimedia (Images, Audio, Text)	AIGC technology has achieved time savings of 30-50% in real-world projects, particularly in the prototype design and concept validation stages.

2.3 Research Gaps and Entry Points

Looking at existing studies, both the creative industry value chain and generative artificial intelligence have been research hotspots, but their intersection remains insufficiently explored. Most studies focus on the technological breakthroughs and application cases of generative artificial intelligence, lacking systematic analysis of its overall impact on various segments of the creative industry value chain. Existing research often emphasizes the effects of AI at the creative output end, such as improving production efficiency and enriching content forms, while the study of its integration into the production process is relatively weak, especially lacking in-depth discussions on creative generation, material integration, script optimization, and the restructuring of collaboration models. Additionally, while a few studies involve value chain-level analysis, many are macro-level discussions and lack detailed mechanisms for the content production segment.

Therefore, this study takes the content production segment as an entry point, focusing on how generative artificial intelligence reshapes the production logic, resource allocation, and collaboration models in the creative industry. By examining the entire process from creative conception and resource integration to output, it reveals the penetration paths and driving mechanisms of AI technology in the value chain. The goal of this paper is not only to analyze how AI improves production efficiency but also to explore its far-reaching impact on creative originality, industry division of labor, and business models, providing theoretical support and practical references for the creative industry to respond to digital and intelligent transformations.

3. Theoretical Analysis

3.1 Overall Logic of Value Chain Reconstruction

The application of generative artificial intelligence in the creative industries is profoundly reshaping the value chain of content production. Traditional content production heavily relies on human creativity and manual processing, with long cycles, high costs, and limited ability to quickly respond to market changes. In contrast, generative artificial intelligence, by providing powerful automatic generation capabilities, is transforming the creative production model from a purely human-driven process to a human-AI collaboration model. AI can automatically generate creative drafts, integrate materials, and simulate styles, allowing creators to focus on creative guidance, quality control, and final revisions, significantly improving overall production efficiency.

In the process of value chain reconstruction, generative artificial intelligence not only changes the production process but also optimizes the cost structure and resource allocation. Traditional content production relies on a large amount of manual labor, especially in fields such as advertising, film, and gaming, which heavily depend on designers, photographers, animators, and other positions. These industries have high fixed costs and limited flexibility in adjustments. The introduction of AI automates repetitive tasks, draft generation, and material composition, greatly reducing labor costs and shortening trial-and-error cycles. Enterprises can achieve more creative output with fewer resources, while improving their ability to adapt to rapidly changing market demands.

Theoretically, generative artificial intelligence enhances technical capabilities, including text, image, video, and audio generation abilities, as well as multimodal creative capabilities. These technological improvements directly influence production efficiency. The increase in production efficiency, in turn, leads to value creation, such as higher product quality, faster market responses, and richer creative content, thus enhancing enterprises' competitiveness within the creative industries. In other words, by strengthening technical capabilities, generative artificial intelligence improves the efficiency and quality of the content production segment, enabling enterprises to gain higher returns from value creation and gain a competitive edge in the market.

3.2 In-Depth Analysis of Content Production Segments

In content production, the application of generative artificial intelligence can be divided into three main areas: creative generation, content creation, and post-production optimization. Each of these areas profoundly alters the production logic of the creative industries.

Creative Generation: Generative artificial intelligence can generate large volumes of creative drafts in a short time, including text, images, video, and music—multi-modal content. By analyzing vast amounts of data and combining user needs, AI can simulate different artistic styles, cultural elements, and emotional expressions, providing creators with rich references and inspiration. Based on this, creators can screen, combine, and adjust the drafts, which not only accelerates the speed of creative conception but also ensures the uniqueness and originality of the work. Furthermore, AI can offer different iterations of creative drafts in various styles, allowing creators to experiment with multiple possibilities, enhancing the diversity and experimental nature of their works.

Content Creation: Generative artificial intelligence can directly participate in the generation of materials and preliminary layout work. For instance, in advertising production, AI can automatically generate drafts for images or videos, completing initial storyboards and layouts. In film creation, AI can generate scene references, character designs, or animation elements. These capabilities alleviate creators' burden in repetitive tasks and reduce technical barriers, enabling more creators to participate in high-quality content production. More importantly, AI's generative capabilities allow for the production of personalized and customized content, making the content more precisely aligned with the needs of niche markets and promoting the long-tail and differentiated development of the creative industries.

Post-production Optimization: Generative artificial intelligence can play a role in content modification, style unification, and rapid iteration. Traditional post-production processes are usually time-consuming and require high professional skills. In contrast, AI can automatically perform tasks like image restoration, color adjustment, text polishing, and video special effects processing, enabling efficient iteration. This not only shortens the cycle from creative conception to final product delivery but also improves the consistency and controllability of content quality. Through this approach, AI further enhances the flexibility and efficiency of creative production, allowing businesses to respond quickly to market and consumer needs.

3.3 Human-AI Collaboration Mechanism and Industrial Impact

The application of generative artificial intelligence has brought about not only technological changes but also shifts in the human-AI collaboration model within the creative industries. In the new collaboration model, human creators and AI play complementary roles: AI offers generation speed, scalability, and a variety of creative solutions, while human creators are responsible for creative direction, emotional expression, and quality control. Through this collaboration, creative work shifts from being the sole responsibility of one role to a multi-stage collaborative process, making the organizational structure of the creative industry more flexible while facilitating the optimization of knowledge and resource allocation within the industry chain.

At the industrial level, generative artificial intelligence enhances the agility and innovation capability of content production, promoting more personalized and diversified creative products. Enterprises can use AI to quickly generate multiple versions of advertising materials, film storyboards, or game scene designs, enabling more precise market targeting and optimizing user experiences. Additionally, AI has driven innovation in business models. For example, advertising agencies use AI for multi-version testing and dynamic optimization, film companies use AI to complete early-stage storyboards and visual design optimization, and game companies use AI to generate scene and character materials, significantly improving production efficiency and market responsiveness.

However, the integration of generative artificial intelligence also brings challenges. Issues such as ensuring creative originality, content quality control, copyright ownership, AI-generated content biases, and the potential substitution of traditional creative roles need to be addressed by businesses during the application process. Therefore, when introducing AI, enterprises need to establish comprehensive management and governance mechanisms, including standardizing AI-assisted creative processes, setting content quality review standards, developing copyright protection systems, and training creators in human-AI collaboration skills to ensure that the technological benefits can be effectively realized and that the sustainable development of the creative industry is promoted.

4. Conclusion

This study analyzes the reshaping role of generative artificial intelligence in the content production segment of the creative industry value chain. The findings show that generative artificial intelligence significantly transforms the traditional content production model by enhancing creative generation capabilities, optimizing production processes, and improving resource allocation efficiency. In the creative generation phase, AI can rapidly generate diverse drafts, providing creators with rich references and inspiration; in the content creation phase, AI can automatically complete initial material composition, storyboarding, and layout work, reducing repetitive labor; in the post-production phase, AI facilitates rapid iteration, style unification, and quality correction, allowing creators to focus more on creative guidance and reviewing the final output. This human-AI collaboration model not only increases production efficiency but also enhances the diversity and innovation of creative content, bringing a new production paradigm to the creative industry.

In terms of the value chain, generative artificial intelligence has a profound impact on the creative industry. First, content production efficiency is significantly improved, enabling creative products to be brought to market more quickly and at lower costs, while enhancing market adaptability and responsiveness. Second, the formation of human-AI collaboration has optimized the industry's organizational structure and collaborative networks, making creative production more flexible and efficient. Third, the application of AI technology has driven business model innovation, including multi-version advertising testing, film storyboard optimization, and game scene generation, making content production more personalized and user-oriented, while also creating new value growth points for businesses.

At the same time, the application of generative artificial intelligence also brings potential risks and challenges, including ensuring creative originality, content quality control, copyright ownership issues, and the substitution impact on traditional creative roles. To maximize the technological benefits and minimize risks, businesses need to establish systematic management and governance mechanisms, including standardizing the human-AI collaboration process, setting content quality review standards, clarifying copyright ownership responsibilities, and providing training for creators on collaboration skills to ensure AI technology is effectively integrated into the creative production process and continues to create value.

This study's theoretical contribution lies in incorporating generative artificial intelligence into the creative industry value chain analysis framework, revealing the role of technological capability enhancement and production efficiency improvements in value creation, offering a new perspective on the application of value chain theory in the context of the digital economy. Practically, the research provides guidance for creative enterprises in formulating content production strategies, optimizing resource allocation, and building human-AI collaboration models. Future research could further expand into other segments of the creative industry value chain, such as distribution and consumption, using quantitative methods to evaluate AI's efficiency and value contribution in creative production, and explore AI applications and challenges in cross-cultural creative content generation, providing more comprehensive theoretical and practical guidance for the intelligent development of the creative industry.

References

[1] Akhtar, Z. B. (2024). Unveiling the evolution of generative AI (GAI): A comprehensive and investigative analysis toward LLM models (2021–2024) and beyond. Journal of Electrical Systems and Information Technology, 11(1), 22.

[2] Al-Sfan, M. B. B., Al-Karawi, A. M. Y., & Mousa, T. U. (2022). Value chain analysis and its importance in reducing cost and improvement of the processes' performance:

Applied study. International Journal of Research in Social Sciences and Humanities, 12(01), 394-422.

[3] Heilemann, G., & Faix, W. G. (2023). Transformation process meets innovation leadership—An analysis of new challenges in change theory. Leadership, Education, Personality: An Interdisciplinary Journal, 5(1), 13-20.

[4] Krings, W. (2025). Empowering innovation: A novel startup in educational advisory. Journal of Next-Generation Research, 5.0.

[5] Komorowski, M., Lupu, R., Pepper, S., & Lewis, J. (2021). Joining the dots—Understanding the value generation of creative networks for sustainability in local creative ecosystems. Sustainability, 13(22), 12352.

[6] Liu, X., Liu, P., & Li, M. (2024). Factors influencing value co-creation in cultural and creative enterprises: An empirical study. Heliyon, 10(15).

[7] Neugovsen, G. D. (2021). De cadena de valor a sistemas adaptativos complejos en las industrias creativas y culturales. Monograma. Revista Iberoamericana de Cultura y Pensamiento, (9).

[8] Akbari, H., Yuan, L., Qian, R., Chuang, W. H., Chang, S. F., Cui, Y., & Gong, B. (2021). Vatt: Transformers for multimodal self-supervised learning from raw video, audio and text. Advances in Neural Information Processing Systems, 34, 24206-24221.

[9] Chompunuch, S., & Lubart, T. (2025). AI as a helper: Leveraging generative AI tools across common parts of the creative process. Journal of Intelligence, 13(5), 57.

[10] Ghobakhloo, M., Fathi, M., Iranmanesh, M., Vilkas, M., Grybauskas, A., & Amran, A. (2024). Generative artificial intelligence in manufacturing: Opportunities for actualizing Industry 5.0 sustainability goals. Journal of Manufacturing Technology Management, 35(9), 94-121.

[11] Aleksandr, K. (2024). Legal horizons of the new artificial intelligence paradigm. Legal Issues in the Digital Age, (2), 4-35.

[12] Xu, G., Qiu, Y., & Qi, J. (2024). Artificial intelligence and labor demand: An empirical analysis of Chinese small and micro enterprises. Heliyon, 10(13).