

Research on the Shaping Mechanism of AIGC on the Production Process of Short Videos from the Perspective of Intelligent Content Production — Taking the Douyin Platform as an Example

Huizhao Yang*

The Central Academy of Drama, Beijing 100710, China

**Author to whom correspondence should be addressed.*

Copyright: © 2026 Author(s). This is an open-access article distributed under the terms of the Creative Commons Attribution License (CC BY 4.0), permitting distribution and reproduction in any medium, provided the original work is cited.

Abstract: In the context of the rapid evolution of intelligent content production, AIGC technology, with its multi-modal generation and efficient autonomous creation capabilities, has become the core engine driving the transformation of the short video industry. This paper takes the Douyin platform as the research object and adopts a combination of literature analysis and case studies to systematically define the core connotations, characteristics, and adaptability of intelligent content production and AIGC technology. From the four dimensions of creative conception, material preparation, editing production, and content review, this paper analyzes the reshaping path of AIGC on the entire production process of short videos, and then reveals the four intrinsic logics of technology empowerment, efficiency iteration, cost optimization, and ecosystem reconstruction. The research shows that AIGC, through technological integration and scenario implementation, breaks the professional barriers and efficiency bottlenecks of traditional short video production, promoting the transformation of content production from the manual-dominated “artisanal” model to the human-machine collaborative “industrial” model, providing new power support for the high-quality development of the short video industry.

Keywords: Intelligent content production; AIGC; Short video production; Douyin platform; Shaping mechanism

Online publication: April 26, 2026

1. Introduction

With the acceleration of social life pace, short videos, characterized by fragmentation, convenience, and entertainment, have rapidly emerged and become an important carrier of social information dissemination and people’s spiritual and cultural consumption. The Douyin platform, with its large user base and diverse content ecosystem, has become a benchmark for the development of the short video industry^[1]. Traditional short video production relies on professional teams, equipment, and technology, and has problems such as high creation barriers, low production efficiency, and serious content homogeneity, which make it difficult to meet the current massive, diverse, and personalized content demands. The breakthrough development of AIGC technology provides a new solution for short video production, and its core capabilities, such as multi-modal generation, efficient autonomous creation, and personalized adaptation, are highly

compatible with the lightweight, high-frequency, and scene-based production characteristics of short videos. Currently, the Douyin platform has fully laid out AIGC creation tools, from iDream AI, Xingming intelligent editing to AI copywriting generation and digital person creation, forming a technical matrix covering the entire production process of short videos, promoting a fundamental transformation in the production mode of short videos. Based on this, this paper takes the perspective of intelligent content production as the research field, focuses on the Douyin platform, and deeply explores the reshaping dimensions and intrinsic logic of AIGC on the production process of short videos, analyzes the practical value and industry impact of technology application, and provides theoretical references and practical guidance for the intelligent transformation of the short video industry.

2. Intelligent content production and AIGC, and core concepts of short video production

2.1. Core connotation and core characteristics of intelligent content production

Intelligent content production is a new production paradigm based on artificial intelligence, big data, etc., and relying on algorithms to achieve automated and personalized output of content. The core is to complete the reconfiguration of production elements and achieve the transformation from manual experience-driven to data intelligence-driven. This production mode has four characteristics: full-chain intelligent operation, significant improvement in production efficiency, precise adaptation of content to user needs, and relatively low overall operating costs. It can adapt to the high-frequency, diverse, and personalized dissemination requirements of new media content and is the core direction of current content industry upgrading ^[2].

2.2. Core attributes of AIGC technology and adaptability to content production

AIGC is a technological framework that utilizes deep learning models to generate multimodal content—including text, images, audio, and video—with core capabilities in cross-media generation, autonomous learning and creation, and dynamic iterative optimization. In practical applications, AIGC proves highly compatible with short video production: it not only lowers the barrier to entry for user-generated content, catering to the needs of an inclusive creative ecosystem, but also enables rapid content generation to meet the high-volume demands of short videos. Leveraging its multimodal advantages, it supports the audiovisual integration required in short-form content and addresses diverse creative requirements across various scenarios.

3. The impact of AIGC on the entire process of Douyin short video creation in the context of intelligent content production

3.1. Creativity and thinking dimension: from experience-driven to data-intelligence-driven

Traditional short video creativity relies on the personal inspiration and industry experience of the creator, which often leads to repetitive creativity and the selection of topics not meeting market demands. After AIGC is integrated into the platform, it can rely on big data analysis of hot trends, user preferences, and the patterns of popular content to quickly generate multiple creative solutions, script frameworks, and narrative ideas. It breaks free from the constraints of manual creation and makes creative output more efficient and more accurate in positioning. The creative process is developing towards a data-driven and intelligent direction ^[3].

3.2. Material preparation dimension: From manual collection to intelligent generation and integration

The traditional method of material collection relies on on-site shooting, online search, and copyright purchase, which is time-consuming, costly, and involves copyright risks. Douyin utilizes AI drawing, virtual material generation, and other functions to generate materials such as images, virtual scenes, and dynamic pictures based on text instructions.

The intelligent algorithm can automatically classify, match, and optimize existing materials, and combine the platform's genuine authorized AI material library to simplify the material acquisition process, avoid copyright risks, and create a lightweight material supply system.

3.3. Editing and production dimension: From professional operation to automated intelligent processing

Editing is an important part of the formation of short videos. The traditional model has high requirements for the professional skills of the creator. Tools like Camtasia from Douyin, combined with AIGC, can automatically generate all aspects such as shot selection, fragment assembly, transition effects, subtitles, and voiceovers, and will adjust the speed and overall appearance of the video according to the specified style, thereby significantly reducing the operational difficulty and enabling ordinary users to quickly produce professional-level editing results.

3.4. Content review dimension: From manual review to intelligent and precise review

After a large amount of content is launched, the pure manual review model can no longer meet the requirements, resulting in low efficiency and inconsistent standards. The AIGC intelligent review system created by Douyin integrates computer vision, natural language processing, and other technologies to conduct a comprehensive screening of video images, text, and audio, achieving real-time content review. For content that is judged as violating regulations, it will be submitted to manual review for a second round of verification, thereby forming a human-machine cooperative review model, which attaches importance to both the speed of review and the compliance of the content.

4. The internal logic of AIGC reshaping the production process of Douyin short videos in the context of intelligent content production

4.1. Technology integration logic: Multi-modal technology collaborative empowerment of the whole-process innovation

The key to intelligent transformation lies in technology integration. AIGC is not a single application of a technology, but an organic integration of numerous technologies such as natural language processing, computer vision, speech recognition, and pre-trained large models. Various technologies collaborate and exchange data, respectively acting on different links such as creative generation, picture production, audio and video processing, and content review, breaking down technical barriers between each process and building an integrated intelligent creation system, laying a technical foundation for the reshaping of the short video production process^[4].

Douyin Jiemeng AI collaborated with Baona Film and Television to create the AIGMS work "The Future Revelation of Sanxingdui" short drama, fully applying AIGC to complete the entire process of script writing, storyboard design, virtual scene generation, intelligent editing, music, and voiceover. This project fully leverages the collaborative advantages of multi-modal technologies, with natural language processing technology completing the creation and polishing of historical-themed scripts and dialogues, combined with the cultural characteristics of Sanxingdui to build a narrative framework; computer vision and image generation technologies replicate ancient Sichuan civilization scenes, cultural relics images, and future sci-fi scenes, creating a virtual-real combination visual effect; intelligent audio technology matches ancient-style music, environmental sound effects, and voiceovers to achieve a high degree of unity in audio and video styles; The intelligent editing algorithm automatically switches shots and adjusts the duration of the screen based on the plot rhythm, replacing a large amount of repetitive work of the traditional film and television post-production team. Compared with the traditional short drama production mode, this project eliminates the stages of real-site construction, outdoor shooting, and prop production, and the original content produced by a team of dozens of people in half a month can be implemented in just a few days relying on AIGC collaborative technology. The production manpower is reduced by over 70%. At the same time, the multimodal technology enables real-time content adjustment, quickly optimizing the plot, screen, and soundtrack

based on the dissemination data, making the content more in line with the aesthetic preferences of Douyin platform users. The overall playback volume of related topics and works exceeded 20 million. This cooperation fully proves that the deep integration of multimodal AIGC technology can reconstruct the production technology architecture of film and television short videos, enabling complex content to be produced in a lightweight and intelligent manner. It also verifies that technical collaboration is the core underlying logic of process reconfiguration.

4.2. Efficiency iteration logic: Production cycle compression and capacity scaling enhancement

Efficiency improvement is the most intuitive value manifestation of AIGC implementation. The automation of technology replaces a large amount of manual operations, comprehensively compressing the time consumption of the creative, material, editing, and review stages, significantly shortening the production cycle of a single video. The improvement of efficiency further releases the platform's content production capacity, supporting creators to produce content in batches, adapting to frequent update scenarios such as hot topic chasing, e-commerce promotion, and account matrix operation, and promoting short videos to shift from individualized manual work to industrialized batch production.

Hangzhou Xie Xin Technology provides AIGC short video batch production services for children's clothing merchants on Douyin, relying on AI tools to complete the entire content output. After integrating the AIGC production system, the staff only need to input basic instructions such as product selling points, dressing style, and application scenarios, and the system can automatically generate multiple scene pictures, virtual models of models, sales copy, and on-air audio, and the automated editing function can complete the production of the final piece. The overall production time of a single video is controlled within 10 minutes. Relying on the batch production function, the team can produce dozens of differentiated sales videos in a day, and the daily submission volume of merchants has increased by 5 times compared to before. During the e-commerce promotion period, the sufficient content supply guarantees the continuous exposure of the account; combined with the precise algorithm push, the overall playback volume of related videos on the store increased by 300% compared to before, and the click-through rate and conversion rate of the products also increased simultaneously. This case clearly shows the disruptive change of AIGC on production efficiency. The compression of the cycle leads to an explosion of production capacity, and the large-scale production capacity can match the platform's traffic rules and commercial operation needs, forming a positive cycle of efficiency and commercial value. This is also the core reason why AIGC can quickly be popularized in the commercial short-video field of Douyin.

4.3. Cost optimization logic: Reduction of all-stage costs and efficient resource allocation

Traditional short video production involves substantial costs across human resources, equipment, venue arrangements, copyright compliance, and time investment, resulting in high overall entry barriers. AIGC technology replaces manual labor and hardware requirements, reducing dependence on specialized personnel, filming equipment, and physical venues. The platform's free AI tools and licensed material libraries further significantly cut expenses related to copyright licensing and software services. With these cost reductions, creative resources can be better allocated to core aspects such as content innovation and value creation, achieving optimal resource utilization in production processes.

Douyin creator "Galaxy Traveler" used the platform's free AIGC tools to create an emotional short film titled "The Meal Is Still Hot", with no on-site shooting or professional team participation. To create a delicate picture atmosphere and emotional expression in an emotional short film, it often requires renting indoor scenes, hiring actors, purchasing props, and coordinating professional editors and voice-over personnel. The basic production cost of a single work is generally several thousand yuan, and ordinary individual creators cannot afford it. The creator carried out the entire creative process relying on the built-in AI copywriting generation, AI image drawing, intelligent dubbing, and automatic editing tools of Douyin. They only relied on textual descriptions to conceive the plot, character states, and emotional tone of the scenes. The AI generated all the dynamic images, subtitles, and background music. The entire creative process was independently completed by one person, generating only a small amount of network traffic costs. The total production cost was less than 100 yuan. From the perspective of the final dissemination effect, the work received millions of likes and a large number of

reposts, and its popularity was not inferior to the works produced by professional teams. By comparing costs and benefits, it is easy to find that AIGC has completely lowered the entry cost for individual creators, eliminating the creative barriers brought by funds, hardware, and personnel. The funds and energy that were originally flowing to equipment, venues, and personnel were concentrated by the creators to polish the core of the story, emotional expression, and creative design, making the content itself the core competitiveness. This restructuring of the cost structure has changed the investment logic of the short-video industry, allowing creation to return to the essence of content and giving small individual creators the opportunity to compete with professional institutions on the same stage.

4.4. Ecological reconfiguration logic: Diversification of creative entities and positive content ecology

The lowering of the creative threshold has enabled the Douyin creative community to expand from professional teams and institutional accounts to ordinary netizens and individual creators, forming a creative landscape where multiple entities coexist. Different creators use AIGC to create differentiated content, enriching the platform's content forms. At the same time, algorithms and AI review norms guide the content orientation, reducing lowbrow and low-quality content, and cooperating with the platform's traffic incentive mechanism to form a virtuous cycle of high-quality content production, dissemination, and re-creation, continuously optimizing the overall content ecology of the platform ^[5].

The Douyin creator "Life Longer Than Dreams AIGC" used AIGC technology to create the cyberpunk-style short film "The Wanderer of the North Country", becoming a representative work of AI original narrative content on the platform. The cyberpunk theme has extremely high requirements for visual effects, virtual scenes, and visual styles. In the traditional creative mode, such creative videos require professional film and television special effects teams, high-end post-production equipment, and mature art designers. The production cycle is long, the capital investment is large, and only the top MCN institutions and professional film and television studios are willing to get involved. The related content of this theme on the platform is scarce and has a single style. This individual creator used the full-chain AIGC tools of Douyin to independently complete the world-building and story conception, and then generated all the image materials such as cyber cities, future buildings, character images, and light and shadow effects through text instructions. The AI matched electronic music and sound effects according to the theme style, intelligently edited to control the narrative rhythm and shot transitions, and did not rely on external professional teams or commercial budgets throughout the process. After the work was launched, it won 35 million views and 2.1 million likes. The popularity of this work attracted a large number of individual creators to try niche high-barrier content such as science fiction, fantasy, and Chinese-style special effects, and the number of AIGC narrative and special-effect content on the platform increased rapidly, with more diverse content styles. On the one hand, AIGC enables niche creative and personalized themes to be implemented, breaking the monopoly of top institutions on high-barrier content, achieving comprehensive diversification of creative entities; on the other hand, a large number of fresh themes and creative content flood the platform, reversing the homogenization problem of short videos, and different styles of works complement and learn from each other, promoting the platform's content ecology towards diversity and excellence, fully demonstrating the deep reconfiguration effect of AIGC on the short-video ecosystem.

5. Conclusion

During the development of intelligent content production, AIGC has comprehensively reshaped the production process of Douyin short videos, from creativity, materials, and editing to review; all aspects have achieved intelligent upgrades. The underlying logic of technology integration, efficiency iteration, cost optimization, and ecosystem reconfiguration works together to drive the industry's production model to complete transformation and upgrading. AIGC, while releasing development dividends, also brings real challenges such as content homogeneity, copyright disputes, and a lack of creative emotions. In the future, the platform needs to continuously optimize AI tools and improve regulatory rules. Creators should adhere to the core of the content and strengthen creative capabilities, and the industry should gradually establish a copyright system and ethical norms suitable for AIGC content. With the continuous upgrading of technology, the

integration of AIGC and short videos will be more in-depth, and it will continue to promote the steady development of the digital content industry.

Disclosure statement

The author declares no conflict of interest.

References

- [1] Tan J, 2026, A Brief Discussion on the Application of AIGC in News Short Videos. *China Newspaper Industry*, 2026(5): 151–153.
- [2] Zhang SY, An X, Si D, et al., 2026, Application of Artificial Intelligence Technology in the Production of Meteorological Short Videos. *Digital Technology and Application*, 44(1): 28–30.
- [3] Han S, 2025, Research on the Production Ideas of News Hit Short Videos in the Era of Merged Media. *China News Publishing and Broadcasting News*, December 11, 2025, 4.
- [4] Shen P, 2025, Research on the Application of Artificial Intelligence in Short Video Production. *Integrated Media Times*, 2025(11): 81–83.
- [5] Sun YH, Zhu CK, 2025, Exploration of the Training Model for Micro Specialization in Short Video Production and Operation in the New Media Environment. *Sichuan Labor Security*, 2025(19): 116–117.

Publisher's note

Whioce Publishing remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.