

Generative AI–Driven Intelligent Distribution Mechanisms in the Publishing Industry—From the Perspective of Cross-Platform Content Distribution

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Abstract. From a cross-platform distribution perspective, this paper explores how generative AI enables the intelligent transformation of publishing’s distribution stage. We first review industry digitalization needs and the evolution of generative technologies, arguing that deep learning, natural language processing, and large language models jointly support content creation, semantic adaptation, and distribution decision-making. We then propose a “generate–distribute–feedback–re-optimize” closed loop, detailing mechanisms and tactics for multi-platform restructuring, intelligent scheduling, multilingual localization, SEO/GEO alignment, and personalized recommendation, with practices such as BOOKSGPT as illustrative cases. Next, we assess risks arising from platform heterogeneity, cultural–semantic bias, over-reliance on algorithms, and constraints relating to copyright and privacy. Finally, we outline future directions that shift from human–AI collaboration to ecosystem-level operations and from technical refinement to governance and ethics. Centering on the distribution link, the paper contributes a technology–mechanism–KPI mapping and an actionable strategy framework that can help publishers achieve precise audience reach and global dissemination.

Keywords: Generative AI, Publishing distribution, Multilingual localization, Algorithmic scheduling

1. Introduction

1.1. The rise and development of Generative AI

In recent years, the rapid advancement of Generative Artificial Intelligence (Generative AI) has marked a shift in AI from “recognition” to “creation.” Unlike traditional AI tasks centered on analysis and prediction, Generative AI—powered by deep learning and Natural Language Processing (NLP)—can generate new content from existing data, including text, images, audio, and even video, thus taking on the role of a “content producer.”

This transformation has been driven primarily by breakthroughs in Large Language Models (LLMs) and Deep Neural Networks (DNNs). As these technologies have matured, Generative AI has moved from labs into industrial applications, permeating news and media, advertising and

marketing, education, healthcare, and more. In content-intensive industries in particular, AI’s capabilities for generation, translation, and optimization have significantly improved productivity and opened new modes for information dissemination.

1.2. The publishing industry’s need for digital transformation

With the rapid development of information technologies and the deep penetration of the internet, the digitalization of publishing has steadily accelerated and become a central force in upgrading the industry. According to the 2024–2025 China Digital Publishing Industry Annual Report, China’s digital publishing industry reached a total revenue of 1,748.536 billion RMB in 2024, up 8.07% year-on-year, continuing a stable growth trend. In 2023, the figure was 1,617.968 billion RMB, a 19.08% increase, reflecting a strong growth base. By segment, revenues in 2024 were 3.55 billion RMB for online journals, 8.0 billion RMB for e-books, and 0.55 billion RMB for digital newspapers (excluding mobile newspapers) [1]. The pace of digital transformation for traditional publications is accelerating, and digital operations have become a critical component of the industry structure. This growth not only reflects sustained market demand for digital products, but also provides a solid industrial and technical foundation for deploying Generative AI.

Moreover, growth stems not only from the digitization of traditional content, but also from the rapid expansion of emerging segments such as online literature, web comics, online education, short videos, and new media. This diversification of content and convergence of channels lays a strong foundation for the industry’s global and intelligent development and creates realistic application scenarios and opportunities for Generative AI in the distribution link.

Table 1. Comparison of digital publishing and traditional publishing (book retail) scales, 2020–2024

Year	Digital Publishing Revenue (100 mn RMB)	YoY Growth of Digital Publishing (%)	Book Retail Market (100 mn RMB)	YoY Growth of Book Retail (%)	Share of Digital Publishing (%)
2020	11781.67	-	970.8	-	92.39
2021	12762.64	8.33	986.8	1.65	92.81
2022	13586.99	6.46	871.0	-11.8	93.99
2023	16179.68	19.08	912.0	4.7	94.66
2024	17485.36	8.07	1129.0	23.8	93.93

Notes: Digital publishing revenue data are from China Digital Publishing Industry Annual Report (2020–2024); book retail market figures are from Open Book and the National Press and Publication Administration. The “Share of Digital Publishing” is computed as the ratio of digital publishing revenue to (digital publishing + book retail) and is used for trend analysis only.

1.3. Multidimensional applications and mechanism evolution of Generative AI in publishing distribution

The rise of Generative AI presents new opportunities for publishing, especially in the “distribution” link. AI can not only generate content at the front end, but also drive intelligent distribution and cross-platform adaptation at the back end, thereby boosting both the efficiency and impact of dissemination.

On the content side, Generative AI can extract summaries, refine text, and translate into multiple languages, while also generating marketing and promotional materials aligned with distribution scenarios for different audiences. For example, AI can rapidly produce personalized ad copy, posters, multilingual pitches, and campaign assets tied to trending events or holidays, localized for cultural norms in different regions—reducing manual planning and translation costs and speeding content creation cycles.

On the dissemination side, AI can analyze platform algorithms and user behavior to dynamically adjust structure, length, and tone so content better fits each platform’s distribution logic, improving exposure and reach. For international distribution, multilingual generation and cultural localization help overcome language barriers and enable cross-cultural communication. On social media, for instance, AI can craft concise, appealing teasers; on e-book platforms, it can produce structured abstracts and recommendation tags to enhance search visibility and reader reach. In short, with Generative AI, distribution shifts from static, one-off delivery to a dynamic, intelligent, data-driven flow. This paper therefore uses Generative AI as an entry point to focus on cross-platform distribution mechanisms in the publishing industry’s distribution link, exploring technical pathways, application practices, and real-world challenges [2].

2. Integration of Generative AI technologies and the publishing industry

2.1. Overview of core technologies

Generative AI is a major branch of AI whose core goal is to create information rather than merely recognize it. Unlike traditional AI that focuses on data analysis and pattern recognition, Generative AI learns from large-scale data to produce original, semantically coherent content. Its core technology stack consists of Deep Learning, Natural Language Processing (NLP), and Large Language Models (LLMs). The synergy among these three enables AI not only to “create content,” but also to “understand audiences” and “optimize distribution,” thereby enabling intelligent distribution across platforms, languages, and cultures [3].

2.1.1. Deep learning: the underlying engine from generation to distribution optimization

Deep learning algorithms are central to Generative AI’s capabilities. Through multilayer neural networks (DNNs) modeling linguistic and visual features, AI can understand content while predicting dissemination performance. Generative Adversarial Networks (GANs) and Representation Learning provide algorithmic support for intelligent distribution. GANs give AI a “self-correcting” generative capability via adversarial training between the “generator” and “discriminator,” controlling realism and style consistency. In publishing distribution, GANs can be used to generate auxiliary assets—book covers, illustrations, promotional short videos—and adapt visual materials for different media, maintaining consistent brand identity. Representation learning can model historical distribution data, user interactions, and reading preferences to predict distribution outcomes—for example, recommending formats and posting times by region to enable “intelligent placement” and “precise coverage.”

2.1.2. NLP: enabling multilingual distribution and semantic adaptation

NLP is the semantic foundation for AI in publishing distribution. Based on Transformer architectures with self-attention, NLP maintains semantic coherence while enabling multilingual translation. For publishers, this means AI can generate localized versions of blurbs, synopses, and

even e-book texts tailored to target markets, accelerating global distribution. Beyond translation, AI can perform semantic reframing and cultural localization—adjusting tone, expressions, and word choice to fit local norms—thus avoiding literalism and enhancing cross-cultural communicability. Using semantic retrieval and keyword expansion, AI can also build intelligent tagging systems that make content more discoverable by search engines and recommendation algorithms.

2.1.3. LLMs: the cognitive hub powering intelligent distribution

LLMs integrate deep learning and NLP, and through large-corpus pretraining plus reinforcement learning, they can understand publication content, anticipate audience responses, and plan dissemination strategies—becoming the decision hub for intelligent distribution. LLMs can tailor structure and style to different platforms: condensing long-form content into high-shareability abstracts or snippets for social media, and generating structured tables of contents, keywords, and recommendations for e-book platforms to improve search visibility and reach.

The BOOKSGPT system developed by Shuchuan Group has begun to explore such mechanisms in practice. It builds an “AI + distribution” framework across the full publishing workflow and can automatically generate differentiated versions for different channels. For social platforms, BOOKSGPT decomposes book content into assets suited for short videos and posts; for e-book and digital platforms, it generates tables of contents, tags, and keywords to optimize metadata and improve retrieval and exposure. With data monitoring and algorithmic optimization, BOOKSGPT tracks reading behaviors and dissemination feedback—platform popularity, dwell time, sharing rates—to dynamically adjust push strategies, forming a closed loop of “generation → distribution → feedback → re-optimization” that boosts market coverage and offers a real-world example of AI-driven precise distribution.

Overall, these three core technologies interact to form the technical framework for intelligent distribution in publishing: deep learning supports data analysis and outcome prediction (“intelligent decision-making”); NLP enables multilingual adaptation and semantic optimization (“cross-cultural communication”); and LLMs synthesize both to drive cross-platform distribution and multimodal promotion (“omnichannel reach”).

2.2. Intelligent publishing workflows

The rapid progress of Generative AI is pushing publishing from “human-driven” to “intelligent collaboration.” Traditional workflows—content editing, layout/printing, and distribution/promotion—require heavy labor, complex operations, and long cycles, making rapid response difficult in the digital era. Introducing Generative AI enables data-driven, intelligent re-engineering of the workflow. As the industry moves toward digital and global operations, AI enhances editing and printing efficiency and, crucially, enables algorithm-driven distribution that precisely reaches target audiences.

In editing, Generative AI markedly improves productivity and quality control—handling grammar checks, semantic refinement, style unification, and title generation to reduce repetitive editorial work. LLM-based systems can adjust style and structure for different publication types (scholarly articles, popular science books, columns, etc.). In topic planning, AI can analyze reader data and trending themes to suggest topics, shifting from “reactive content production” to “data-driven creative planning” [4].

In printing and layout, Generative AI learns layout rules and produces standard-compliant templates for books, journals, and e-books. Through image recognition and GANs, AI can optimize

covers, illustrations, and layout aesthetics to enhance visual consistency and appeal [5].

3. Applications and challenges of Generative AI in the distribution link

3.1. Cross-platform content distribution mechanisms driven by Generative AI this section must be in one column

Generative AI doesn't just improve editing and printing—it transforms distribution from “human-driven” to “algorithmic collaboration.” Compared with manual, channel-centric models, AI-enabled distribution emphasizes adaptive content generation, alignment with platform algorithms, and continual optimization of dissemination paths [6]. Distribution is no longer a linear, terminal step; it is a dynamic, feedback-driven content operations system centered on AI algorithms. Through semantic understanding, user-profiling, and multimodal generation, it forms a closed loop of “content adaptation → algorithmic distribution → feedback optimization → regeneration”, achieving efficient dissemination across platforms, languages, and audiences.

3.1.1. Cross-platform content reconstruction and adaptation

Different platforms follow different logics: scholarly platforms prize rigor and citation format; social media favors interactivity and visual impact; short-video platforms hinge on pacing and emotion. AI can identify platform traits and generate multiple versions from the same source content. For e-book platforms, it can produce chapter TOCs, recommendation keywords, and personalized summaries; for scholarly databases, it can optimize abstracts, citations, and metadata for retrieval; for social and short-video platforms, it can generate punchy copy, visuals, and hashtags to spur sharing. This “synchronous multi-platform generation” moves distribution from one-way delivery to multi-channel resonance, markedly improving efficiency [7].

3.1.2. Intelligent distribution and algorithmic scheduling

By combining user data, platform algorithms, and content features, AI can select optimal distribution paths and posting times. Analyzing active hours, regional preferences, and topical interests enables scheduled pushes with precise exposure. AI can also continuously evaluate strategies and adjust weights in real time to allocate traffic efficiently across platforms—shifting from experience-driven to data-driven scheduling

3.1.3. A multilingual, multicultural distribution ecosystem

AI's multilingual capability is pivotal in a global context. While preserving semantic accuracy, AI can localize expression for target markets. For Western journals, AI can render Chinese academic prose into styles that fit international norms; for literary publishing, it can reshape language to local reading habits. This dual adaptation in language and culture enables low-cost, simultaneous multi-region distribution.

3.2. Strategies for boosting exposure and dissemination

3.2.1. Data-driven exposure optimization

Timing and routing are decisive for dissemination. Generative AI mines clicks, dwell time, and interaction frequency to identify key nodes and raise visibility and delivery efficiency [8]. It predicts optimal posting windows on different platforms and devises dynamic push and re-push strategies. By segmenting audiences and tuning pathways, length, and presentation, AI improves content–platform fit and lays a foundation for search and algorithmic distribution [9].

3.2.2. SEO/GEO mechanisms for exposure and reach in the distribution link

Beyond general data-driven optimization, a publication’s reach increasingly depends on visibility in both traditional search engines and generative engines. Search Engine Optimization (SEO) improves ranking in engines like Baidu and Google via keyword strategy, structural optimization, and authority signals [10]. Generative Engine Optimization (GEO) targets generative search so that content is preferentially crawled, understood, and recommended by systems such as ChatGPT, ERNIE, and DeepSeek. Together, SEO and GEO help publishers secure advantageous “algorithmic positions” at both search and generative entry points [11].

Recent studies underline this shift. *Generative Engine Optimization: How to Dominate AI Search* (Chen et al., 2025) notes that generative search differs markedly from traditional search in crawling and presentation; AI systems prefer clearly structured content with authoritative citations and rich semantics and elevate sources conducive to high-quality synthesis. Hence, publishers should complement SEO with GEO to raise “first-screen appearance” in AI answers and recommendations [12].

On feasibility, *Automatic Geo-alignment of Artwork in Children’s Story Books* demonstrates AI’s ability to auto-align geography/culture across text and illustrations in children’s books—evidence that cross-lingual, cross-cultural adaptive generation can raise match quality in search and recommendation systems across regions, offering a practical path for GEO in international distribution [13].

Industry practice is also advancing. As *AI-Powered SEO: How Digital Publishers Can Stay Ahead in Search Rankings* reports, many digital publishers already deploy AI-assisted SEO—smart keyword clustering, trend capture, and structured content generation—to meaningfully improve exposure in organic search and recommendation feeds. In short, SEO/GEO now form an integral part of distribution strategy, boosting algorithmic visibility and providing the traffic base for personalized recommendation and social amplification [14].

3.2.3. Intelligent recommendation and personalized dissemination

Using user profiles, reading histories, and purchase behaviors, Generative AI provides precise recommendations. This personalized dissemination raises conversion while shifting strategy from mass-audience targeting to individual-level delivery—true “one-to-one” publishing. AI also updates models from feedback to optimize subsequent waves, creating a dynamic dissemination cycle [15].

3.2.4. AI-assisted marketing and social amplification

Generative AI learns platform-specific styles to produce promotional copy and visual assets—short book trailers, author-quote cards, graphical summaries—fueling multi-layered social dissemination.

It can monitor reviews and trending topics, capture marketing opportunities, and generate follow-up content to extend a title's public-opinion lifecycle—automating production while algorithmically pacing campaigns [16].

3.3. Key challenges in the distribution link

3.3.1. Fragmented platform standards and adaptation bottlenecks

Platforms differ widely in technical requirements, content norms, and algorithms. While AI can convert formats and tones, it is difficult to fully satisfy all standards at once. For instance, journals require strict citations, while social media prizes brevity and emotion; domain shifts can cause information loss or semantic drift, undermining professionalism and consistency.

3.3.2. Semantic and cultural errors in localization

Despite multilingual generation, cultural understanding remains limited. AI can miss cultural metaphors or regional taboos, leading to misexpression or misinterpretation. In literary and humanities publishing, AI-generated translations may lack cultural nuance and semantic depth, still requiring human post-editing.

3.3.3. Algorithmic dependence and diversity risks

Recommendation systems can exhibit “algorithmic inertia,” over-promoting popular titles while neglecting niche works, fostering homogenization and cultural monocultures. Biased training data can skew recommendations, making strategies subservient to model logic rather than editorial intent.

3.3.4. Data security and copyright compliance

AI-driven distribution relies heavily on data collection and analysis, raising issues of reader privacy, copyright, and content usage rights. Ownership of AI-generated derivatives—summaries, taglines, covers—remains unclear; if unauthorized materials are used during generation, publishers risk infringement. Balancing efficiency with compliance is thus a central challenge [17].

4. Conclusion and future prospects

4.1. Summary

Generative AI is propelling publishing from traditional content production to a new model that is intelligent, data-driven, and global. The core technologies—Deep Learning, NLP, and LLMs—enable intelligent collaboration across creation, editing, printing, and distribution. In the distribution link in particular, multimodal generation and intelligent routing optimize dissemination pathways and update legacy channel- and manpower-dependent practices.

AI-driven cross-platform distribution achieves both precision and variety. By recognizing platform semantics and user traits, AI generates multi-version content for e-bookstores, journal sites, social channels, and short-video platforms, while reinforcement learning and algorithmic scheduling enable dynamic delivery and continuous optimization.

AI has significantly improved dissemination efficiency and market coverage. With algorithmic recommendation and data-driven personalization, publishers can execute true “one-to-one”

strategies. AI not only predicts outcomes but also adjusts cadence and direction based on real-time feedback—closing the loop of “generation → distribution → feedback → re-optimization.”

Yet challenges persist platform heterogeneity complicates adaptation; linguistic and cultural gaps hinder cross-cultural accuracy; algorithmic dependence threatens diversity; and data/copyright issues are more salient in AI systems. These caution that efficiency gains must be paired with ethics and governance to build a normative, sustainable intelligent publishing ecosystem.

4.2. Outlook

From human–AI cooperation to intelligent co-creation. Publishing distribution will evolve into “human creativity + AI generation.” Editors will focus on decisions and oversight, while AI handles cross-platform adaptation, language generation, and real-time distribution—raising personalization and responsiveness.

From content delivery to ecosystem operations. AI will expand distribution into ecosystem-level operations. Publishers will orchestrate a multi-layered content matrix—books, short videos, audiobooks, interactive pieces—coordinated across platforms via AI to extend lifecycle value, shifting from “one-off release” to “continuous operation.”

Deeper multilingual, multicultural dissemination. As LLMs’ multilingual skills improve, AI will become a bridge for cultural communication—through sentiment recognition, cultural transfer, and semantic reframing—to achieve true “localized publishing,” advancing the global flow of knowledge and literature.

Ethics and norms. Widespread AI adoption calls for stronger ethics and institutional innovation. The industry should clarify authorship, copyright, and responsibility for AI-generated content; curb algorithmic abuse and bias; and promote explainability to ensure transparency and fairness—safeguarding diversity and trust [18].

In sum, as technology matures and norms solidify, publishing distribution is entering a phase of “intelligent generation, precise dissemination, and cultural convergence.”

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