

The Ability Remodeling and Development Path of Digital Publishing Talents in the Era of Artificial Intelligence

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Abstract: In the age of artificial intelligence, the transition from traditional to digital publishing has emerged as a new paradigm empowering high-quality development in the publishing industry. This paper examines the current status and challenges of talent development in digital publishing during the AI era. It systematically outlines three core competency dimensions for professionals in this field: practical application of intelligent technologies, cross-industry integration and innovation capabilities, and commitment to humanistic values and leadership. Finally, the paper explores pathways to enhance professional competencies through three key approaches: establishing policy support systems, innovating on-the-job training mechanisms, and building organizational learning and knowledge management platforms.

1. Introduction

As artificial intelligence technology has been extensively and deeply integrated into every aspect of digital publishing, the industry now demands a systematic overhaul of talent competency frameworks. In this context, a thorough exploration of core competency dimensions for professionals in the field and clear career development pathways can provide valuable theoretical insights for industry practices.

2. The status quo and difficulties of digital publishing talent team construction in the era of artificial intelligence

2.1 Talent supply scale

The digital publishing industry currently faces a significant mismatch between talent supply and actual demand. ^[1]On the supply side, traditional publishing professionals remain dominant, with their expertise concentrated in conventional areas like content curation, editing, proofreading, and layout design—skills that struggle to meet emerging AI-driven industry needs. Meanwhile, demand-side dynamics reveal a stark contrast: the rapid expansion of industry-wide demand for interdisciplinary talents in AI applications such as content resource allocation, productivity enhancement, and user profiling. This sudden surge in demand contrasts sharply with the delayed talent supply. Concurrently, the tension between workforce stability and dynamic adaptability grows

increasingly pronounced. Established professionals face career path dependency that hinders their ability to transition beyond current roles, while the fast-evolving nature of AI technologies demands continuous skill upgrades. This growing pressure between organizational needs and workforce adaptability further exacerbates the imbalance between talent supply and actual industry requirements.^[2]

2.2 Talent knowledge and ability structure level

There exists a significant disconnect between the knowledge and skill sets of professionals and the integration demands of AI technologies. Traditional digital publishing talent primarily focuses on core competencies like content planning, text processing, and publishing workflow management. Professionals have traditionally limited their skill development to linear publishing processes, which has led to the creation of relatively closed knowledge frameworks. However, AI applications require interdisciplinary capabilities such as data processing, algorithmic understanding, and intelligent tool operation—competencies that often occupy peripheral positions or are entirely absent in current knowledge structures. Specifically, most practitioners lack systematic understanding of fundamental AI principles like natural language processing, machine learning, and AIGC applications. Their insufficient proficiency in intelligent typesetting systems and AI-generated content tools makes it challenging to effectively integrate AI technologies throughout the publishing workflow. This gap between monolithic knowledge frameworks and diversified technological integration demands leads to notable capability gaps in technical implementation.^[3]

2.3 Talent training mode

The current talent development model shows significant lag in addressing the impact of artificial intelligence technology.^[4] Regarding re-education systems, existing training programs for on-the-job professionals primarily focus on general skills or basic technical introductions, lacking in-depth curriculum design tailored to the digital publishing industry's unique characteristics. The disconnect between training content and real-world work scenarios makes it difficult to meet the diverse AI technology demands of different positions. Training formats predominantly consist of short-term lectures or online courses, lacking continuous practical guidance and feedback mechanisms, which hinders the transformation of theoretical knowledge into practical application skills. From an enterprise management perspective, most companies have yet to establish systems for evaluating talent competencies that are compatible with the AI era. Promotion mechanisms and compensation incentives still prioritize traditional performance metrics, failing to incorporate technical application capabilities and innovative achievements as core assessment criteria. This disconnect between management objectives and evolving competency demands results in a lack of intrinsic motivation for talent to proactively enhance their technical literacy, thereby weakening the practical effectiveness of training models.

3. Core competency dimensions of digital publishing professionals in the era of artificial intelligence

3.1 Intelligent technology practice and application ability

The integration of AI technologies throughout digital publishing processes has equipped professionals with robust practical skills in intelligent technology implementation.^[5] The key to this capability lies in practitioners' awareness of utilizing AI tools and their ability to seamlessly integrate these tools with real-world workflows, rather than merely mastering theoretical knowledge.

In content production, AI-powered proofreading systems have become essential for efficiency enhancement. These tools help professionals reduce non-cognitive, repetitive tasks while aligning with publishing standards to ensure compliance and quality consistency, thereby alleviating mechanical work pressure. During content planning, AI-driven data analytics are replacing traditional experience-based judgments. Practitioners must analyze user behavior data and market trends to identify potential themes, requiring them to simultaneously operate data analysis tools and translate findings into actionable strategies. The application of technologies like AI-powered typesetting and automated content distribution demands professionals rapidly master new tools and adapt their workflows to ensure practical effectiveness through continuous technological iteration.

3.2 Cross-industry integration and innovative practice ability

The concurrent development of digital publishing, artificial intelligence technologies, and new media ecosystems has elevated cross-disciplinary integration and innovative practice capabilities as essential competencies for professionals. At its core, this capability requires transcending traditional publishing boundaries to achieve multidisciplinary knowledge synthesis and creative application. Practitioners must master publishing expertise, fundamental AI principles, and converged media operational frameworks—a composite knowledge system that forms the foundation for cross-boundary collaboration. In practice, collaborative innovation demands cross-domain communication skills to efficiently coordinate with technical development teams and new media operations units, transforming publishing needs into actionable solutions or communication strategies. The key to innovative practice lies in translating integration concepts into tangible outcomes, such as optimizing content presentation through AI technologies or designing interactive publishing products tailored to new media platform features.^[6]

3.3 Humanistic value adherence and leading ability

The instrumental nature of AI technology demands that professionals in digital publishing uphold humanistic values and demonstrate leadership capabilities to ensure technological applications remain true to the original purpose of publishing. This capability is reflected in two core responsibilities: ethical judgment of content and humanistic care for user needs. On the ethical front, the proliferation of AI-generated content raises concerns about copyright ownership and information authenticity. Practitioners must adhere to publishing ethics to filter and guide AI-generated content, preventing technical abuse from leading to vulgarization or spreading false information. Regarding user needs, data-driven content profiling often leads creation into traffic-oriented pitfalls. Professionals must transcend superficial data analysis to deeply understand users' spiritual and cultural needs, conveying humanistic care through agenda-setting to achieve a balance between commercial value and social responsibility.

4. Promotion path of ability improvement of digital publishing professionals in the era of artificial intelligence

4.1 Building a policy support and institutional guarantee system

The potential for AI technology to permeate various fields has created new demands for digital publishing professionals. Policy support and institutional safeguards serve as crucial foundations for enhancing talent capabilities comprehensively. Establishing a scientific and comprehensive policy framework can provide clear guidance and stable support for talent development, effectively addressing the current disconnect between talent cultivation and industry needs.^[7]

First, at the national level, it is crucial to strengthen top-level design by establishing specialized capability enhancement plans and standard systems. Education authorities should collaborate with publishing industry regulators to define core competencies required for professionals in the field, such as intelligent technology application and cross-industry integration, based on the integration of digital publishing and artificial intelligence. These competencies should be incorporated into the national vocational skill standards system. Supporting policy documents must be introduced to integrate digital publishing talent development into cultural industry plans, clarify governments' financial responsibilities for talent cultivation, and guide social resources toward capacity-building initiatives.

Secondly, industry organizations should establish collaborative mechanisms and create cross-sector capability-building platforms. Publishing industry associations should lead the formation of talent development alliances involving enterprises, universities, and research institutions. These alliances should integrate resources to develop targeted practical training curricula, focusing on hands-on content such as AI technology comprehension enhancement, intelligent content generation tool applications, and data-driven topic planning. The alliance must establish consistent standards for assessing training quality and implement dynamic supervision over participating institutions and course implementation to ensure content remains updated in sync with industry technological advancements.

Thirdly, publishing enterprises should enhance internal incentive and development systems by strategically recruiting cross-industry experts to drive talent capability breakthroughs. Companies must integrate AI application capabilities into employee competency models, increasing the weight of technical implementation effectiveness in performance evaluations. Employees demonstrating mastery of core AI skills should receive priority promotion opportunities and competitive compensation packages. Establishing dedicated talent development funds will support systematic training programs and technical exchanges while creating trial-and-error spaces for AI implementation. Implementing cross-departmental mentorship systems with industry experts will enable experienced professionals to lead team-wide skill enhancement initiatives.

4.2 Innovation in on-the-job training and cross-boundary integration mechanisms

Artificial intelligence technology has driven profound transformations in the digital publishing industry. To enhance the capabilities of professionals, it requires systematic on-the-job training systems and cross-industry integration mechanisms. Innovations in these two frameworks can effectively bridge the gap between existing knowledge/skills and industry demands, providing sustainable development pathways for talent advancement.

Firstly, it is crucial to further refine the on-the-job training system and strengthen the cultivation of technical application capabilities alongside scenario-specific innovation adaptability. The design of training content should focus on practical implementations of AI technologies throughout the publishing process, reducing theoretical indoctrination while emphasizing core competencies such as data processing logic and intelligent tool operation. Enterprises need to collaborate with universities and technical service providers to develop modular courses, creating differentiated training modules tailored to specific job requirements like content review and topic planning. The training approach should shift toward a practice-oriented methodology, adopting project-based learning models that enable trainees to understand and master AI tool applications through simulated publishing projects.

For instance, in July 2025, Huazhong University of Science and Technology Press hosted the "2025 AI Empowering High-Quality Publishing Development Training Program" through a hybrid online-offline format. Centered on restructuring the continuing education system, the program

focused on "AI-Enabled High-Quality Publishing Development." The modular curriculum integrated specialized content, including AI-powered knowledge services, intelligent publishing solutions, and AIGC applications with risk management strategies, tailored to meet competency requirements across roles such as topic planning, content editing, and integrated development. Leveraging expert teams from universities and publishing houses, the program dynamically updated its content to cover cutting-edge topics like digital resource applications and industry transformation trends. This ensured that the course materials kept pace with technological advancements in the publishing sector, offering systematic support to enhance professionals' capabilities in the field.

Secondly, establishing cross-boundary integration mechanisms is crucial to facilitate the consolidation of cross-domain knowledge and foster innovation capabilities. At the industry level, it's essential to promote the creation of regular collaboration platforms between digital publishing and fields like artificial intelligence and new media. By leveraging joint R&D initiatives and technology sharing, we can break down cognitive barriers. Enterprises should implement cross-disciplinary talent exchange programs, establishing two-way job rotation mechanisms with tech innovators and new media platforms. This allows employees to gain profound insights into technical development processes and new media operational logic while accumulating cross-domain experience through practical application. Additionally, building an interdisciplinary knowledge-sharing system is vital. Publishing companies should encourage the formation of cross-departmental task forces, bringing together talents from technology, content, operations, and other fields to co-develop projects. Through collective brainstorming and collaborative practices, this approach promotes knowledge complementarity and enhances teams' overall cross-boundary innovation capabilities.

4.3 Build an organizational learning and knowledge management platform

In the AI-driven era, organizational learning and knowledge management platforms have become essential tools for digital publishing companies to systematically enhance the capabilities of their workforce. Their core value lies in facilitating knowledge accumulation, circulation, and innovative applications while creating a dynamic learning environment that adapts to talent needs. Establishing such platforms effectively addresses current challenges like fragmented knowledge and inefficient experience transfer among professionals, while leveraging systematic mechanisms to drive continuous skill enhancement and capability upgrading.^[8]

First, enterprises should design modular functional architectures that integrate core requirements for learning and knowledge management. Guided by the capability development goals of on-the-job talents, they should establish a platform system encompassing the entire process of learning, knowledge accumulation, and application. Firstly, enterprises should design a modular functional architecture, integrating the core demands of learning and knowledge management, and orienting towards the ability development goals of on-the-job talents. They should build a platform functional system covering the entire process from learning, accumulation to application. They should build a platform functional system covering the entire process of learning, accumulation, and application. Finally, they should set up a real-time interactive collaboration space, integrating functions such as online discussions, question answering, and project reviews, to support employees in sharing their technical application experiences promptly around specific work scenarios, promoting the rapid flow of knowledge in practical scenarios.

Secondly, enterprises should establish a dynamic knowledge management system to ensure the platform's sustained and effective operation. The platform's long-term value depends on a robust operational mechanism that precisely matches knowledge supply with talent demand. On one hand, implementing a knowledge contribution-audit linkage system clarifies each employee's knowledge

contribution responsibilities, while forming a review team composed of business experts and technical leaders to assess the professionalism and practicality of accumulated knowledge. On the other hand, building a learning effectiveness tracking and feedback system involves recording data such as employees' study duration, knowledge application frequency, and project outcome relevance. This analysis evaluates the conversion of knowledge into practical skills, enabling dynamic adjustments to learning resource prioritization and knowledge recommendation strategies.

5. Conclusion

In the current era where emerging technologies like artificial intelligence are reshaping industries, the capability transformation of digital publishing professionals has become a core challenge in addressing technological changes. This cannot be achieved through a single initiative. It requires policy support to provide directional guidance and resource guarantees, training innovations to achieve precise skill enhancement, and knowledge management platforms to facilitate experience sharing. The coordinated advancement of these three elements—driving industry value innovation through talent capability upgrades—will propel digital publishing into a new phase of high-quality development.

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