Exploration of Intelligent Development of News Editing in the 5G Era (Postprint)

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Abstract

Ultra-dense networking operation modes based on wireless technology can break through the technical limitations of processes such as collection, transmission, storage, processing, analysis, and decision-making in traditional data operation systems, providing a solid foundation for the intelligent development of news editing, while also causing news editing professionals to experience various forms of technological anxiety. Based on a brief analysis of these issues, this paper proposes the development direction and key control points for the intelligentization of news editing, thereby providing developmental insights for the news editing industry and making positive contributions to the innovative development of China' s news media industry.

Full Text

Exploration of Intelligent Development of News Editing in the 5G Era

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Abstract: The ultra-dense networking operation mode based on wireless technology can break through the technical limitations of traditional data operation systems across processes including collection, transmission, storage, processing, analysis, and decision-making, providing a solid foundation for the intelligent development of news editing. Simultaneously, it has induced various forms of technical anxiety among news editors. Based on a brief analysis of these issues, this paper proposes development directions and control points for the intelligent evolution of news editing, aiming to provide developmental insights for the news editing industry and contribute positively to the innovative development of China' s news media sector.

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News editing intelligence originates from the broader development of media intelligence. The innovation and advancement of media technology have substantially transformed both the methods and capacities of information carriage and transmission. As primary agents in news content collection and editing, news editors must inevitably adapt to technological transformation and epochal demands, comprehensively overhauling their knowledge structures and editorial models. The application of 5G technology drives continuous improvement in the overall level of intelligent development across the media industry, thereby imposing higher requirements on the intelligent evolution of news editing.

1. Overview of News Editing Intelligence

1.1 Development Characteristics of the 5G Converged Media Era

In July 2021, the Ministry of Industry and Information Technology, jointly with ten other departments, issued the "5G Application 'Sailing' Action Plan (2021-2023)," marking China' s intensified efforts in 5G technology development and signaling a new period of 5G application innovation. According to incomplete statistics, by June 2021, China had deployed nearly 1 million 5G base stations, with over 400,000 shared base stations and 365 million terminal connections. Concurrently, various media platforms have been strengthening 5G converged media center construction, building unmanned news collection systems, data journalism collection systems, and converged media dispatch command systems. The arrival of the 5G converged media era, propelled by a new generation of information technology clusters, enables truly profound media integration, facilitates personalized and precise media dissemination, and continuously drives news editing toward intelligent development.

1.2 Concept of News Editing Intelligence

As the main body of news content production and dissemination, news editing work is significantly influenced by technological drivers and media environmental factors, with intelligent development representing a concrete manifestation of this influence. Literally, news editing intelligence refers to a development model that integrates artificial intelligence technology with news editing work, relying on human-computer interaction and collaboration to achieve intelligent editing,

intelligent monitoring, and even full-process intelligent operations. Full-process intelligent news editing employs intelligent methods from news hotspot monitoring and generation through topic selection planning to content production, enabling content classification and indexing through big data analytics.

1.3 Characteristics of News Editing Intelligence

In the 5G converged media era, news editing intelligence primarily exhibits three characteristics. First, news editing operation services become more user-centered rather than event- or group-centered, with news content bearing closer relationships to audiences' social and life scenarios, thereby better satisfying audience needs and effectively enhancing news value. Second, news editing models undergo fundamental transformations requiring continuous training across software, hardware, and artificial intelligence model development, with news editors needing to provide more training materials to satisfy basic training process requirements. Third, audience groups continuously migrate alongside intelligent development, with online communication and network-based development enabling intelligent, real-time dialogue between audiences and news editors, placing higher demands on news content database construction.

2. Technical Anxiety of News Editors in the 5G Era

2.1 New Technologies Refine the Division of Labor System

The application of 5G technology not only diversifies news editing material collection methods and pathways but also fundamentally transforms overall editorial workflows. In traditional news editing systems, data played an extremely limited supporting role, resulting in inefficient topic planning processes, low psychological resonance with audience groups, and restricted news content influence. However, against the backdrop of continuous intelligent development in news editing, topic selection planning can now combine with big data and cloud computing technologies for precise screening, robot writers possess certain manuscript processing capabilities to accomplish tasks impossible for traditional manual editors, and intelligent sensitive word databases and rumor analysis systems can verify false information and implement corrections within short timeframes. Although these intelligent technologies remain at relatively low application levels, they have already refined the news editing division of labor system, with more technical positions being replaced by intelligent systems and human-machine collaboration becoming an important new work model.

2.2 Complexification of News Formats and Scenarios

Traditional news formats and scenarios were relatively singular, primarily combining text and images or using video, providing relatively simple sensory stimulation to audiences with limited impact. The widespread application of 5G technology drives the maturation of VR/AR technologies, with VR panoramic

reporting continuously penetrating various social strata and expanding into diverse news scenarios. This "immersive" news model allows users to directly "experience news with their bodies" and even integrate themselves into news scenes. The application of diversified news scenario models requires news editors to "break free" from traditional rigid thinking systems, adopt actual sensory characteristics as the basic creative orientation from the audience perspective, eliminate the sense of distance in news consumption, achieve innovation in news editing models, better enhance core competitiveness in news editing, and create more high-quality news works.

2.3 Generalization of the News Editing Profession

Driven by rapid 5G technology development, the professional nature of news editing has undergone significant changes, particularly with the high-speed development of online news editing and self-media, pushing the news editing profession toward continuous generalization. On one hand, new news aggregation platforms built upon big data and algorithmic recommendation systems have produced noticeable transformations in data journalism content editing and distribution models, even creating "review before edit" news production models. Based on intelligent algorithm applications, the efficiency of manual news editors and news timeliness face considerable challenges. On the other hand, under 5G technology, traffic is no longer a limiting factor for news content distribution. With comprehensive traffic expansion support, more social public groups are shifting toward self-media platforms, even achieving professionalization in self-media. Under team-based self-media operation models, news topic planning, content construction, and editing forms have all achieved diversified innovation, cultivating large numbers of loyal audiences. The generalization of the news editing profession provides more social public groups with realistic pathways to transform ideas into news content, continuously driving the news editing industry toward personnel structure optimization.

2.4 Deep Transformation of the Relationship Between News Editors and the External World

The high-speed development of 5G technology represents not merely an upgrade in network transmission technology but rather utilizes its characteristics of high speed, low latency, and massive connectivity to achieve mesh fusion across nodes in multiple application scenarios, thereby changing the restricted model of one-way targeted information transmission in traditional network systems. Based on deep 5G technology application, the timeliness and flexibility requirements for news media creation continuously increase, with the industry as a whole entering the all-media era. News editors must expand their influence through online and offline dual-channel models, directly causing increased workloads. As communication between news editors and users moves toward tighter, more open, and more dynamic directions, editors must rely on network interaction forms to narrow the distance between media and audience groups and utilize

intelligent methods to analyze audience demand characteristics. The high-speed development of technology both challenges news editors' capabilities and drives them toward continuous self-reflection and self-improvement.

3. Development Direction of News Editing Intelligence in the 5G Era

3.1 Adapting to Intelligent Innovation Development Requirements

In the era where 5G technology fully integrates into all aspects of media transmission, innovation is endowed with deeper meaning, requiring news editors to construct innovative thinking frameworks under comprehensive and deep media convergence and reconstruct cognition of their core competitiveness. In daily work, editors must not only master basic intelligent language and application capabilities and possess information screening and integration abilities but also continuously cultivate their data literacy to form a news editing thinking framework compatible with intelligent operational development, ensuring news reporting aligns with audience psychological demands and reading habits.

3.2 Innovating Intelligent News Products

News products remain the core of media transmission. Even under continuous 5G technology development, their core position remains unchallenged, representing the fundamental premise that must be upheld in the intelligent development of news editing. Simply pursuing intelligent technology applications can only achieve formal intelligence in news editing without escaping the constraints of traditional news media in terms of connotation and essence. Therefore, the innovation of intelligent news products ultimately depends on the "human" element of news editors. Whether for individual editors or teams, they should, based on deep thinking, grasp the balanced relationships among news content, intelligent technology, people, and objects, and promote news product innovation according to genuine needs revealed through user dialogue and data analysis. For example, in pure image news models, how to enhance user attention and product stickiness while satisfying audience reading needs through basic sequence combination, resolution adjustment, and format optimization represents an important manifestation of deep intelligent application and a crucial pathway to realizing intelligent news product innovation.

3.3 Strengthening Intelligent Technology Support

Against the backdrop of comprehensive intelligent technology development, the technology system itself continuously evolves toward both deepening and differentiation. Deepening is supported by big data and algorithmic technologies, while differentiation manifests in different application methods and effectiveness in news information collection, production, and dissemination. Therefore, in the process of news editing moving toward intelligent development, it inevitably requires massive data based on massive user aggregation and diverse interaction.

Constrained by the traditional model of news editing talent cultivation, most news editors only possess liberal arts backgrounds, and the proportion of news editors in the new era with data literacy and intelligent technology knowledge structures is extremely low, mostly concentrated in relatively fixed fields. This significantly limits the supporting role of intelligent technology. Transforming and optimizing human resource structure is an inevitable practical problem that the news editing industry must solve in its overall move toward intelligent development.

3.4 Promoting Intelligent Organizational Transformation

During the continuous development of 5G converged media construction and operation, traditional news editing organizational models can no longer adapt to the full-process characteristic requirements of intelligent technology application. Driven by technological transformation and focusing on the overall media process operation system, creating innovative AI editorial departments represents the basic carrier for realizing news editing intelligence. Based on integrated human-machine collaboration, relying on technological applications to break through original business process constraints, deleting unnecessary departments and links in original processes, adding departments compatible with intelligent development, and organically integrating all links through intelligent platforms can comprehensively promote departmental collaboration levels and continuously improve news editing efficiency. Against the backdrop of deep organizational transformation in news editing, traditional news editors will inevitably experience weakened or even lost subjectivity, with positional value displacement and deviation, leading to varying degrees of anxiety. Adapting to organizational change requirements, improving self-growth systems, and enhancing personal core competitiveness are inevitable requirements for news editor transformation in the 5G era.

3.5 Achieving Deep Interaction with Audience Groups

Under current intelligent technology development levels, the challenges that intelligent platforms pose to traditional news editing remain superficial, and intelligent news has not yet deeply covered audience interaction levels. Deep-level communication with audiences still mainly relies on manual editing models. For news editors, they must not only correctly understand audience interaction, continuously strengthen interaction with audiences through multiple platforms, and accurately grasp core audience needs but also comprehensively import interaction data into intelligent databases to enrich data sources for AI models, laying a solid data foundation for intelligent platform development. Ultimately, this achieves deep communication between artificial intelligence and audiences, promoting the comprehensive intelligent development of news editing.

4. Control Points for the Development of News Editing Intelligence in the 5G Era

4.1 Adhering to Audience Needs as the Basic Orientation

The continuous push of 5G technology toward intelligent development in news editing has created cognitive distortions among many practitioners, shifting actual work orientation from traditional content-based to platform-based or even technology-based. This orientation directly affects the focus and investment of news editing work. Without audience needs as the basic orientation, news editing intelligence will inevitably drift toward technology-driven transformation, deviating from actual audience needs. Taking the AI robot reply systems implemented by some current network media platforms as examples, they necessarily require massive data collection through continuous interaction with readers to optimize reader interaction content, whereas news editors are not subject to such limitations and can achieve diverse needs based on genuine human thinking. Combining real human interaction with intelligent interaction represents an important form for future news editing to maintain audience orientation.

4.2 Enhancing Personal Intelligent Literacy

In the 5G era, intelligent literacy, data literacy, and other competencies have become basic components of the literacy system. Forming a relatively stable and persistent belief-cognition system in news editing practice constitutes an important prerequisite for promoting synchronized individual and industry development. News editors' intelligent literacy mainly manifests in three aspects: First, possessing practical skills for news editing under intelligent forms and structures, breaking through traditional editing methods, and comprehensively applying multiple tool carriers for collection and editing work. Second, being able to overcome pressure from technology application, continuously improving knowledge structure reserves in long-term development, gradually achieving technical synergy with machine algorithms, and fully leveraging advantages from both aspects. Third, adapting to media platform operation modes and organizational structure transformations, building a personal competitiveness system with specific characteristics, overcoming traditional path dependence, and truly achieving comprehensive improvement in personal intelligent literacy.

4.3 Building a Human-Machine Collaborative Operation System

The construction of human-machine collaborative operation systems represents the necessary direction for the intelligent development of news editing and the basic path to achieving strong intelligence. Under current conditions of relatively low-level human-machine collaboration, media platforms need to intensify technical investment, persist in building new intelligent operation networks supported by 5G technology, collect diverse information and data types, construct complete intelligent operation systems, and reserve manual editing interface access at each system link to satisfy basic requirements for manual processing and

intervention. For news editors, they should adapt to the basic laws of intelligent platform operation, adopt appropriate docking and integration methods, and ensure the stable operation of human-machine collaborative systems.

4.4 Upholding the Core Values of Journalism

Although the intelligent development of news editing has profoundly impacted the transformation of traditional news media forms, at the essential level, it still plays a profound role in reflecting social phenomena, guiding public opinion, and cultivating core values among the public. The application of intelligent technology must similarly follow the basic requirements of journalism ethics, which represents a clear shortcoming of intelligent editing. Therefore, within the news editing work system, the core values of journalism must be upheld, with ethical orientation placed above technology application, ensuring that only content meeting journalism ethical requirements can enter the distribution chain and guaranteeing that news media fully embodies its value connotation, thereby playing a positive role in promoting social development.

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Note: Figure translations are in progress. See original paper for figures.