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Postprint: Technological Innovation-Driven Construction of All-Media Communication Systems

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Abstract

To adapt to new changes and reshape the new mainstream, innovative development in all-media communication has become the driving force for the deep convergence and development of media. This article systematically examines the innovation efforts in all-media communication from two aspects—innovative practices and innovative dimensions—reflects on the practical experience of innovation, and advances the deep convergence and development of media.

Full Text

Preamble

The rapid development and widespread adoption of new internet technologies have ushered the public opinion ecosystem into the all-media era, bringing profound changes to media forms, communication channels, and terminal devices, gradually forming “full-process media, holographic media, all-staff media, and all-effective media.” To adapt to these new changes and reshape the new mainstream, innovation in all-media communication has become the driving force for deep media integration and development. In recent years, the Mass Media Group (hereinafter referred to as “the Group”) has thoroughly implemented the important instructions from General Secretary Xi Jinping on the 80th anniversary of the founding of Dazhong Daily, promoting in-depth media convergence. By employing new technologies and methods such as artificial intelligence, big data, cloud computing, and 5G, the Group has optimized content production processes, innovated news communication forms, created integrated assessment and incentive mechanisms, and fostered new business models for production and communication. Through these innovative practices, the Group has driven deep media integration and development.

1.1 Application of Artificial Intelligence Technology to Innovate All-Media Video Production

High-quality content construction is fundamental to effective all-media communication. Within the all-media communication system framework, content production should consistently uphold correct public opinion guidance, lead content construction with socialist core values, highlight mainstream values amidst the complex situation of diversified ideas, and effectively guide public opinion. Artificial intelligence technology empowers all-media video production, significantly improving production efficiency and work quality. Through AI technologies such as face recognition, speech recognition, and text recognition, the Mass Media Group has focused on building a 5G short video intelligent production platform, optimizing and transforming short video production methods to achieve a “standardized, modular, and popularized” approach. The platform’s features, including one-click video conversion, multi-image synthesis, intelligent templates, and virtual anchors, have greatly enhanced short video production efficiency and lowered the user threshold. Users can quickly and conveniently produce short video news through simple drag-and-drop operations and material addition. To meet different application scenarios and thematic needs, the platform has launched various categorized intelligent templates, such as Two Sessions templates, holiday templates, Douyin templates, youth templates, party-building templates, personality templates, data templates, and anti-epidemic templates. With the widespread use of the 5G short video intelligent production platform, the Group’s media outlets have increased their short video production from over 300 pieces per month to more than 4,000 pieces currently, continuously creating numerous outstanding short video news products.

[Figure 1: see original paper]

1.2 Application of 5G Converged Media Technology to Innovate All-Media Expression Methods

The Mass Media Group actively explores 5G converged media technologies, establishing a 5G converged media laboratory that was selected for Shandong Province’s first batch of 5G demonstration projects. The 5G converged media laboratory collaborates with telecom operators and equipment manufacturers to build experimental scenarios and application platforms. The Group employs 5G messaging, 5G+AR/VR, and other 5G converged media technologies to innovate all-media expression methods. During the 2020 Shandong Two Sessions, the Group used 5G+VR video live streaming to innovate coverage of the event, presenting major news scenes through a new panoramic real-time display method and uniformly publishing across the Group’s various terminal platforms. The 5G+VR live streaming format provides users with an immersive experience, enriching news reporting methods and increasing user participation, interactivity, and stickiness through interactive operations and scene transitions. During the 2021 Shandong Two Sessions, the Group launched the “5G Message Reporting on Two Sessions” quick broadcast platform, including sections such as “Focus

on Two Sessions,” “Data Talks Shandong,” and “Download Media Apps,” allowing users to quickly understand the latest Two Sessions developments in a new 5G news application scenario and view comprehensive coverage of the Shandong Two Sessions by the Group’s all-media matrix. During the 2021 National Two Sessions, the Group launched the “VR Panoramic View of Shandong” series, using drone aerial photography combined with 360-degree VR panoramic presentation to three-dimensionally showcase Shandong’s high-quality development achievements. The virtual reality VR panoramas feature landscapes of the Yellow River beaches, Yimeng Mountains, Changshan Islands, and cities like Jinan and Qingdao, creating an immersive experience. Meanwhile, relevant local text, images, and short videos of key reports are embedded to optimize human-computer interaction, enabling intensive, converged, and visualized display of highlights.

[Figure 2: see original paper]

1.3 Application of RSS Data Interface Technology to Innovate All-Media Distribution Methods

By using RSS data interface technology, the Group has achieved on-demand and automatic distribution of all-media communication. Through RSS data interfaces, original data and user data from the Group’s various clients, including Dazhong Daily, Haibao News, Qilu Yidian, Bandao News, Rural Dazhong, Economic Herald, and Luzhong Morning News, have been unified into a centralized database management system. The designed “one-click distribution” function enables resource sharing and on-demand distribution of manuscripts among various sub-media, expanding publication channels and supporting nationwide dissemination. By matching RSS data interfaces with third-party platforms, the Group has achieved automatic on-demand content distribution with platforms such as People’s Daily’s Renmin Hao, Tencent’s Penguin Hao, Baidu’s Baijia Hao, and Toutiao Hao.

1.4 Application of Netizen Evaluation Data to Innovate All-Media Integrated Assessment System

Traditional assessment systems primarily relied on internal judge evaluations. By introducing netizen evaluation data, scientifically setting quantitative assessment indicators, increasing the assessment weight of all-media news product production and distribution, and improving internal assessment and incentive mechanisms, the Group has systematically guided editorial staff to transition from print media to all-media versatile talents, breaking through position barriers and building a “comprehensively integrated” all-media editorial team. To guide the integration of newspaper, client, and micro-media businesses, Dazhong Daily implements integrated assessment for the production of newspapers, clients, and micro-media. Editorial staff monthly income is distributed based on quantitative work performance. The Mass Media Group employs quantitative assessment rules, designing and developing an integrated assessment system that evaluates

editors and reporters based on indicators such as manuscript communication indices, page views, and judge voting. Simultaneously, the Group increases the assessment weight for new technology-based manuscripts, guiding editorial staff to produce new media content such as videos, H5, VR, and long-form graphics. The integrated assessment system's automated data collection and calculation functions significantly reduce manual input in assessment work, improve assessment data accuracy, and enable traceability of historical assessment data. During data collection and calculation of manuscript communication, issues such as title modifications and missing source or author identifications create significant challenges for manuscript tracking and communication index evaluation. To address this, the Group utilizes big data analysis and machine learning technologies to continuously optimize comparison algorithms, improving manuscript similarity recognition accuracy and optimally calculating comprehensive communication indices. In the manuscript similarity comparison module, a manual review and modification interface is established to enable secondary manual confirmation, enhancing data accuracy.

2. Innovation Dimensions of All-Media Communication

The Mass Media Group continuously innovates across dimensions including all-media communication content, technology, mechanism, and management, advancing deep media integration within the Group, empowering all-media communication system construction, and continuously improving communication power, guidance power, influence, and credibility.

2.1 Mobile-First Strategy Driving Content Innovation

Following the principles of “resource intensification, rational structure, differentiated development, and collaborative efficiency,” the Mass Media Group vigorously implements a new media product innovation project, creating distinctive mobile clients such as Dazhong Daily, Haibao News, and Qilu Yidian. The Dazhong Daily client strengthens its “party media” positioning, targeting core readers including government officials, entering government agencies, grassroots levels, and universities, with cumulative downloads exceeding 15 million and over 10 million new downloads in 2020 alone. The Haibao News client adheres to its positioning of “based in Shandong, first-class nationwide, and facing the world,” accelerating the establishment of a nationwide news gathering and editing network, creating a leading domestic platform-based new media, with cumulative downloads exceeding 59 million and daily active users over one million. Each client maintains its positioning, leverages its advantages, and takes content construction as the starting point, launching a large number of “viral” products suitable for its positioning with over 100 million clicks.

2.2 Embracing New Technologies to Lead Technological Innovation

The Mass Media Group continuously absorbs new technologies such as big data, artificial intelligence, and 5G, increasing resource investment and industrial layout in new technology fields to drive deep media convergence. The Group comprehensively expands big data thinking, deeply exploring big data news products in content production, operation, and communication analysis, achieving data-assisted production and operation through data visualization and data storytelling. The Group targets intelligent development, introducing artificial intelligence technology to cover all aspects of all-media production and communication, enhancing communication power through intelligent production, enhancing guidance power through intelligent driving, and enhancing influence through think tank services. The Group has laid out a “Three Intelligences Matrix” of intelligent media, intelligent cloud, and think tanks, comprehensively improving interactivity, video orientation, data orientation, and intelligence levels, striving to build a first-class new modern intelligent media organization nationwide.

2.3 Integrated Operation to Promote Mechanism Innovation

Following General Secretary Xi Jinping’ s overall requirement of “integrating into one and becoming one,” the Mass Media Group comprehensively implements process, organizational, and mechanism reengineering, building an all-media communication matrix integrating strategy, gathering, editing, and distribution, as well as integrating newspapers, websites, clients, and micro-media. The Group first piloted the “integrated operation platform” at Dazhong Daily, connecting the Chief Editor’ s Office, Current Affairs and Foreign Affairs Department, Client Operation Center, and New Media Research Institute to form an all-media editing center, granting it coordination, planning, decision-making, and command functions. Following the model of “one command system + one business team + two types of products,” the Group transformed business processes, business architecture, and organizational operations, integrating planning, advancement, and implementation of newspaper, client, and micro-media businesses, quantifying and decomposing them to departments and individuals, monitoring integrated effects, and implementing integrated assessment and rewards. Based on the Dazhong Daily pilot, the Group’ s major media outlets have successively established integrated operation platforms, forming all-media editorial departments such as Dazhong Net · Haibao News and Qilu Evening News · Qilu Yidian, eliminating centers, hierarchies, and administration, achieving integration of traditional and new media in personnel, business, assessment, and rewards, significantly improving converged media productivity and communication power. The Group’ s various newspapers, websites, clients, and micro-media accounts have mutually entered, supported, and empowered each other.

2.4 Technology Application to Assist Management Innovation

The Mass Media Group connects various platforms within the Group, integrates data resources, and focuses on expanding big data analysis and application to

monitor the entire process of manuscript production and flow, assisting management innovation in the all-media communication system. In news production, taking manuscripts as the object, the Group monitors the entire process of manuscript creation, modification, publication, and sharing, retaining historical operation data and comprehensively recording all relevant operations within the platform. For the manuscript sharing and selection mechanism among various media within the Group, a unified manuscript instruction issuance and feedback mechanism is established to uniformly issue instructions for manuscript modification, deletion, and publication to all media within the platform. In news communication, big data analysis technology is used to monitor and analyze the sharing and commenting of original manuscripts across the entire network, promptly feeding back on manuscript public opinion trends. Through public opinion monitoring systems, the Group monitors major topics, social events, and online hotspots, providing early warnings for public opinion information and improving public opinion guidance capabilities.

3.1 Key Systems Must Be Independently Controllable

When media convergence began, the construction and development of new media platforms for traditional media mainly relied on external companies, quickly building new media platforms by purchasing third-party services. As media convergence enters its second half and deeper waters, this approach is clearly no longer adaptable to the situation. Mainstream media needs to establish its own technical teams, independently control new media technologies, focus on solving key technical issues facing media convergence development, build independently controllable technology platforms, promptly respond to internal needs, continuously develop new converged media products and applications, and consolidate the foundation of media convergence. For example, after the Dazhong Daily client achieved independent technical development, it underwent 27 iterative updates in 2020 alone, several times more than before, continuously improving functionality and UI, with new downloads exceeding 10 million that year, greatly enhancing the party client's communication power and influence.

3.2 Innovation Practices Must Be Open and Inclusive

First, in production, the application of new technologies aims for practicality, using the latest technological achievements to transform into products. Not all technology applications need to be self-developed; key platforms should be controlled in-house. For example, tool-type applications can completely purchase advanced technologies from the market, adopting an open-door approach to strengthen technology. Second, in distribution, the internet has natural monopolistic characteristics, with traffic controlled by leading companies. Relying solely on one's own communication channels cannot cover more people, requiring cooperation with central media, leading commercial platforms, and other third parties to expand influence and communication effects, adopting an open-door approach to cooperation. Third, in business, leveraging media's function of

connecting society, exploring “news +” new business models and models, such as news big data services, smart cities, smart communities, and media think tanks, cooperating with government and enterprises, and expanding the role of party media as important participants and promoters in modernizing national governance.

3.3 Deep Integration of Technology and Content

Media technology should not only pursue advancement but also emphasize practicality. In the traditional media era, technology assisted production. In the all-media era, technology must drive and even lead media convergence. In all-media communication projects, production, communication, management, feedback, and assessment all depend on technology. In the production process, tools such as short video intelligent platforms are needed, as well as central kitchens carrying all aspects of strategy, gathering, editing, and distribution. In the communication process, networks, clients, micro-media, and accounts in the new media matrix are indispensable. Even in content creation, technology teams and editorial staff have begun cross-border collaboration to create converged media innovative products such as data news, VR/AR videos, H5, and short videos.

The Mass Media Group promotes deep media integration, implements all-media communication projects, continuously improves communication power, guidance power, influence, and credibility, and has achieved certain results and experience in exploring and building an all-media communication system. In today's rapidly developing mobile internet era, especially entering the 5G era, the communication environment and pattern are constantly changing. Media convergence development is a media transformation led by technological innovation, with new technologies being the engine of media convergence, accelerating the development of “four all-media.” How to keep up with technological development trends and build new mainstream media requires further research and discussion.

References

- [1] Zhang Taofu. Establishing an All-Media Communication System [N]. People's Daily, 2020-02-
- [2] Yang Shuhong, Cao Weixi. Conceptual Innovation and Practical Path of Mainstream Media All-Media Development [J]. Chinese Journalist, 2019(5): 38-41.
- [3] Hao Guannan, Li Can, Liu Xinghong. Exploring the Use of Blockchain and Knowledge Graph Technologies to Assist in the 100th Anniversary of the Founding of the Communist Party of China New Media Reporting [J]. China Media Technology, 2021(5):

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

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