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Effectively Building and Utilizing System Platforms to Accelerate Media Convergence: Post-print of Xiaogan Daily Media Group' s Informatization Construction and Application Practice During the 13th Five-Year Plan

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Abstract

With the rapid development of information technology in emerging media applications, traditional print media must innovate their application of information technology, effectively construct and utilize information system platforms, and achieve integrated application and dissemination in order to better occupy new positions in public opinion, accelerate the in-depth development of media convergence, and promote the better development of newspaper enterprises.

Full Text

Building and Optimizing System Platforms to Accelerate Media Convergence Development: The Informatization Construction and Application Practices of Xiaogan Daily Media Group During the 13th Five-Year Plan Period

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Abstract: As emerging media applications and information technology develop rapidly, traditional print media can only occupy new positions in public opinion, accelerate in-depth media convergence development, and promote the better development of newspaper enterprises by innovating information technology applications, building and optimizing informatization system platforms, and achieving effective convergence application and communication.

Keywords: new media; informatization construction; convergence application; convergence development; media convergence

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With the rapid iteration of information technology, emerging media applications have achieved swift development utilizing new technologies. To meet challenges and occupy new positions in public opinion, traditional print media must accelerate the development of emerging media and media convergence [?]. On August 18, 2014, the fourth meeting of the Central Committee for Comprehensively Deepening Reform reviewed and approved the “Guidelines on Promoting the Convergence Development of Traditional and Emerging Media,” elevating “media convergence” to a national strategic priority. During the 13th Five-Year Plan period from 2016 to 2020, Xiaogan Daily, based on its actual conditions, seized opportunities and met challenges by leveraging the achievements of the information revolution, innovating informatization construction and applications, building robust system platforms, utilizing both self-built and cooperative platforms effectively, accelerating the construction of emerging media, promoting media convergence development, and advancing the overall development of the newspaper’s undertakings.

1. All-Media Convergence Platform Construction

To better adapt to multi-medium news production across all media channels, it is necessary to upgrade the all-media collection and editing system that integrates “single collection, multiple generation, and diversified dissemination” of news production. This involves enhancing mobile collection and editing functions, strengthening support for emerging media, applying new achievements in information technology, and constructing an all-media convergence platform.

Based on the actual conditions of the newspaper and the functional requirements of all-media news operations, Xiaogan Daily adopted a master plan with phased implementation. Building upon the foundation of the all-media collection and editing Phase 1 system constructed in 2015—which established an all-media collection, editing, publication, and storage system centered on newspaper editing—the group gradually built its all-media convergence platform.

1.1 Xiaogan Daily All-Media Convergence System

In 2017, the group constructed the all-media collection and editing Phase 2 system, optimizing platform functional modules and enhancing mobile collection

and editing capabilities. This represented version 2.0, an upgrade to the 2015 Phase 1 system. The system achieved five major functions: all-media planning, collection, editing, publishing (distribution), and storage (resource database). The editor supported text, images, and audio-video content, maintained workflow records for manuscripts, and performed duplicate content checks. It supported secure external network login, allowing quick access anytime and anywhere via browsers or apps on computers or mobile devices. The system enabled mobile collection and editing functions including topic submission, contribution, revision, issuance, and layout review. It ensured security management of newspaper layout workflows and supported video connection reporting command on both PC and mobile terminals. The system was launched in August 2016, promoting innovative development in media convergence and winning the China Newspaper Industry New Media Innovation Award at the 2016 China Newspaper Technology Annual Conference.

In 2019, the group constructed the convergence information system 3.0 for the all-media center. This system achieved six major functions: all-media planning, collection, editing, publishing (distribution), storage (resource database), and communication analysis. It added rapid signing and pending manuscript databases, further improving support for new media and better facilitating all-media editing and issuance of manuscripts. The mobile collection and editing function integrated work groups and instant messaging for communication, supporting topic submission conversion to assignment planning and interview task arrangement. The system supported news big data applications such as reporter writing assistance and communication analysis. The large-screen terminal enabled unified command of all-media news reporting. Launched in September 2019, the system further promoted the group's media convergence development and won the China Newspaper Industry Media Convergence, Informatization, and Cybersecurity Project Innovation Award at the 2019 China Newspaper Technology Annual Conference.

2. New Media Application System Construction

New media applications iterate rapidly utilizing new information technologies, and their development relies more heavily on the support of new technology applications than traditional media. Strengthening new media system construction and applying new technological achievements is essential to promote new media development. According to its actual conditions and new media business requirements, Xiaogan Daily has intensified its new media application system construction.

2.1 Xiaogan Network Mobile Convergence Application

This involved three main aspects: First, upgrading the Xiaogan Network and Huaiyin Forum system platforms to meet mobile internet requirements and facilitate browsing on mobile phones. Second, redesigning the Xiaogan Network and Huaiyin Forum websites to better serve netizens and users. Third, upgrading the

digital newspaper system to launch a mobile version of the electronic newspaper for convenient mobile reading. Fourth, vigorously promoting the official Weibo and WeChat accounts of Xiaogan Network and Huaiyin Forum to strengthen interaction between PC and mobile media and online-to-offline integration. The system was launched in August 2016, promoting innovative media convergence development and winning the China Newspaper Industry New Media Innovation Award at the 2016 China Newspaper Technology Annual Conference.

2.2 Community Website-Based App Application

The Huaiyin Forum App is based on community website applications. First, it supports customizable levels, challenge tasks, shopping malls, lucky wheels, and treasure hunting functions. Second, it supports instant chat, text, voice, video, and location operations, with real-time notifications for posting, replying, liking, and tipping. Third, it features a local circle function that combines WeChat and Momo's social models, positioning the circle as a community forum where users can post updates and browse and reply to content. Fourth, it supports cash purchases of goods and tipping, with an independent cash flow settlement system supporting virtual or physical goods sales. Fifth, it uses big data analysis to precisely push content users like. Sixth, it is compatible with the forum system, supporting three-level board display and the forum's own classified information display and release. The system was launched in August 2017, becoming deeply popular among users and serving as the primary window for Huaiyin Forum netizens to obtain information via mobile terminals. It has generated favorable social and economic benefits for the forum and won the China Newspaper Industry Technology Product (Project) Excellence Award at the 2018 China Newspaper Technology Annual Conference.

2.3 Migration of Systems to Cloud Center

The Huaiyin Forum system hosted outside, the Xiaogan Network system in the local computer room, and the media convergence center data backup storage system were migrated to the Xiaogan City Cloud Center. This migration offered several advantages: First, cloud deployment allowed for convenient resource allocation adjustments and resource conservation. Second, cybersecurity equipment had powerful functions. Third, the computer room had excellent basic infrastructure such as power supply and broadband. Fourth, the system adopted dual-line internet access with distributed deployment. Fifth, background login was connected via a bastion host. The system was launched after migration in June 2019.

2.4 Electronic Newspaper Reading Screen System

First, the electronic reading screens feature sections for newspaper news, practical information, convenience services, and advertising, with personalized design and updates as needed. Second, they utilize all-media system data to publish

newspaper news. Third, the screens automatically switch on and off at scheduled times and automatically receive and update content distributed from the background via the internet, with the ability to publish the same or different content. Fourth, published content includes text, images, video, and PPT formats. The electronic reading screens were launched in August 2015, with over 300 units installed by 2019. In 2017, the project won the Top 30 China Newspaper Industry New Media Innovation Award at the China Newspaper Convergence Innovation Conference.

2.5 Video Equipment System

First, front-end filming equipment such as digital video cameras, sports SLR cameras, and drones can be used for video shooting and live streaming. Second, based on high-performance computers, video editing can be performed to produce feature films, short videos, and converged media works including video material-based PPT, H5, AR, VR, and Vlog content. Third, based on cooperation with central media platforms, provincial media platforms, and commercial platforms, live streaming can be conducted using live streaming all-in-one machines, video cameras, and mobile phones. In 2019, video equipment was gradually increased according to needs. Network video live streaming, video, short videos, and converged media works based on video materials have become popular due to their intuitive, visual, and vivid nature.

2.6 IPTV Information Interactive Service Platform

First, in cooperation with telecom operators, the platform uses telecom broadband networks as transmission channels and television sets as terminals. Second, integrating internet, multimedia, communication, and other technologies, it provides users with information interactive services including television content. Third, it features sections such as Smart Party Newspaper, Smart Government Affairs, Smart Health, Smart Life, Smart Education, and Smart Party Building, enabling interactive newspaper reading on television. The platform was launched in June 2018 and welcomed by citizens.

2.7 Digital Newspaper Mobile Version Update and Upgrade

First, the digital newspaper mobile version display adapts to mobile phone screen sizes. Second, users can directly access high-resolution, clear layout images. Third, users can switch between layouts directly through finger sliding. Fourth, a layout content title list has been added. Fifth, users can conveniently browse historical newspapers. Sixth, based on QR code scanning and recognition for newspaper reading, a WeChat mini-program entry for browsing has been added. The system was launched in April 2020 and has been deeply welcomed by newspaper readers.

3. Cybersecurity System Synchronized Construction

Only with cybersecurity can information systems operate normally. Cybersecurity system planning and construction must be synchronized with information system construction. In recent years, Xiaogan Daily has conducted synchronized cybersecurity system construction according to its actual conditions, ensuring the safe operation of information systems.

3.1 Deployment of Cybersecurity Equipment in Newspaper Office Computer Room

Cybersecurity equipment was deployed in synchronization in the newspaper office computer room. In 2017, new hardware network firewalls and network intrusion detection hardware devices were added. In 2019, hardware devices for internet behavior management were added.

3.2 Cloud-Based Systems Equipped with Cybersecurity Protection

Cloud-deployed systems are required to be equipped with cybersecurity protection. In 2019, when Xiaogan Network, Huaiyin Forum, and other systems were migrated to the Xiaogan City Cloud Center, they were equipped with powerful cybersecurity protection.

4. Strengthening Application for Convergence Communication

Informatization system platform equipment must be applied effectively to exert its technical support role and serve media communication. In recent years, Xiaogan Daily has focused on aspects including user thinking, media convergence capabilities, system application, mobile-first strategy, newspaper-network interaction, visualization, activity leadership, smart services, and convergence mechanisms to strengthen convergence application and communication, achieving favorable social and economic benefits.

4.1 Strengthening Internet User Thinking

In the internet era, with the gradual application of big data, news information service providers must adopt internet thinking to analyze users and provide them with useful news information. In recent years, Xiaogan Daily has strengthened internet thinking, adapted to the transformation from “people seeking information” to “information finding people,” focused on news publicity around its industry positioning as a mainstream news producer and regional information provider, and provided smart information services for party committees, governments, citizens, readers, and users. Reporters and editors must actively understand user reading conditions and respond to reader concerns regarding their published works.

4.2 Strengthening All-Media Capability Enhancement

In the all-media era, media collection and editing personnel must strengthen training and learning to adapt to new communication needs. In recent years, Xiaogan Daily has strengthened training for collection and editing personnel, cultivating all-media composite talents who can write articles using computers and mobile phones, take photos using cameras and mobile phones, shoot videos using video cameras and mobile phones, edit and process text, images, and videos using computers and mobile phones, post on Weibo, WeChat, and client applications using computers and mobile phones, and produce converged media works. The group has continuously strengthened the all-media capability enhancement of its collection and editing team.

4.3 Strengthening All-Media System Application

The all-media system platform is the foundational platform for network process management and application of collection and editing. Only by making good use of the all-media platform can media communication be improved. In recent years, Xiaogan Daily has attached great importance to all-media convergence system application. First, the planning module is applied, requiring topic submission, assignment selection, and interview task arrangement to be operated within the system and displayed on large screens during pre-collection meetings, enabling unified reporting command at the all-media center. Second, manuscript production is applied, requiring manuscripts to enter the platform for all-media sharing, allowing all media to edit and use them. Third, news big data is applied, using big data systems to analyze news information communication effects and further improve news reporting and information services through analysis feedback. Fourth, the finished product resource library is applied, requiring produced works to be archived in the resource library for reuse by various media as needed.

4.4 Strengthening Mobile-First Distribution Process

Due to their convenience, mobile terminals have become people's primary channel for receiving information. For rapid news communication, media distribution processes must prioritize mobile media. In recent years, Xiaogan Daily has strengthened its mobile-first distribution process. Reporters at interview scenes transmit text, images, video, and other materials for mobile new media editors such as Weibo, WeChat, and client applications at the earliest opportunity, and can also edit and publish directly on-site.

4.5 Strengthening Newspaper-Network New Media Interaction

Strengthening interaction between newspapers and network new media can better leverage the brand advantages of newspapers and the fission communication advantages of network new media. In recent years, Xiaogan Daily has strengthened newspaper-network new media interaction. Newspaper layouts have been

mobilized, with layout content presented on mobile terminals through websites, digital newspapers, WeChat, Weibo, and client applications. In particular, corresponding to WeChat public accounts, the newspaper has opened over 20 WeChat public accounts forming a WeChat matrix including Zhiwen Xiaogan, Huanong Dianjing, Tianxian Meiwen, Dangjian Zhiding, and Xiaogan Fuping. Feedback and tip-offs from new media users have provided useful clues for newspaper news reporting.

4.6 Strengthening Visualized Convergence Media Communication

In the all-media era, supported by 4G and 5G networks, visualized convergence media works spread through social platforms and mobile terminals via fission communication. In recent years, Xiaogan Daily has fully utilized its own system equipment, central media platforms, provincial media platforms, and commercial platforms to conduct network live streaming and produce converged media works containing video materials, strengthening visualized convergence media communication. In 2019, the group's live streaming works won the "National Top Ten" award in Xinhua News Agency's New Media Center "You Are Amazing" Excellent Reporting Award.

4.7 Strengthening Activity Leadership to Promote Services

Through well-planned activities achieving online-offline interaction, activity leadership can provide clients with all-media, comprehensive, and three-dimensional news publicity and information services. In recent years, Xiaogan Daily has fully utilized its advantages to strengthen activity leadership and cooperate with clients to host various activities. These include hosting events with government agencies in outdoor squares with all-media publicity and promotion, and cooperating with enterprise and commercial clients to host product promotion events at the group's all-media center or client sites with live streaming for product sales. These activities have been deeply welcomed by clients, citizens, and netizens, creating a sensation on social media.

4.8 Strengthening Smart Analysis for Service Planning

By accurately understanding the needs and information of clients and users, smart analysis using big data can better provide news publicity and information services for clients. In recent years, to seek better news information services for clients and users, Xiaogan Daily has strengthened the collection of information on cooperating departments, enterprises, and institutions, organized them into a comprehensive network archive room, used big data for smart analysis, accurately grasped needs, and provided smart information services for clients and users.

4.9 Strengthening New Mechanisms for Convergence Communication

To improve all-media convergence communication, media need supporting mechanisms suitable for converged media communication. In recent years, Xiaogan Daily has strengthened innovation in convergence communication mechanisms. First, the group's media collection and editing forces can be arranged and used according to needs. Second, text, photos, videos, and converged media works produced by reporters and editors are shared across all group media. Third, unified reporting command is achieved throughout the group through business meetings including editor-in-chief expanded meetings, pre-collection meetings, pre-editing meetings, and special topic meetings. Fourth, all-media workstations have been established in counties and urban districts, with county and district WeChat public accounts opened to better provide all-media news publicity and information services for counties and districts.

Xiaogan Daily will continue to base itself on actual conditions, conduct informatization construction and application practices, accelerate the deep integration of media, build full-process media, 全息 media, all-staff media, and all-effect media, construct an integrated all-media communication pattern, and promote the development of the newspaper's undertakings.

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(Editor: Tu Dongmin)

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

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