

In-Depth Implementation of Intelligent Management and Building a New Engine for Smart Media Development: The Development Path of “Xiaonan” at Southern Media Group (Postprint)

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Date: 2023-10-08T00:00:00+00:00

Abstract

In recent years, Southern Media Group has pursued the development objective of establishing an intelligent cultural media conglomerate, actively advancing the intellectualization of content and intelligent dissemination, delivering intelligent services externally while implementing intelligent management internally, thereby continuously consolidating and strengthening the Party’s positions in public opinion. The internal implementation of intelligent management entails establishing governance structures, production workflows, and institutional mechanisms that accommodate the requirements of deep integration and industrial transformation, leveraging technology empowerment to propel the shift of internal decision-making, operations, and management from extensive, experience-based approaches to refined, scientific approaches grounded in data and information. As a technology empowerment initiative, the Southern Media Group Intelligent Management Platform, following two years of continuous development, has achieved significant and scalable outcomes, facilitating interaction and integration across business operations, with applications progressively transitioning to a unified platform. With “Xiaonan” serving as the user portal and display interface, a new paradigm of intelligent management services within the group has initially emerged. This paper aims to present reflections and discussions on the construction of the Southern Media Group Intelligent Management Platform “Xiaonan” from the perspectives of top-level design, architectural planning, and implementation pathways.

Full Text

Deepening Intelligent Management Implementation to Build a New Engine for Smart Media Development: The Construction Path of “Xiaonan” at Southern Media Group

Abstract: In recent years, Southern Media Group has pursued the development goal of building an intelligent cultural media conglomerate by actively promoting content intellectualization, intelligent dissemination, and smart external services, while implementing intelligent internal management to continuously consolidate and strengthen the Party’s public opinion positions. Intelligent internal management entails establishing governance structures, production processes, and institutional mechanisms adapted to deep integration and industrial transformation needs, using technology empowerment to shift internal decision-making, operations, and management from extensive, experience-based approaches to refined, scientific approaches grounded in data and information. As one of the technology empowerment initiatives, Southern Media Group’s intelligent management platform has achieved significant, large-scale results after two years of continuous development. Business units have realized interaction and integration, with applications gradually transitioning to a unified platform. Using “Xiaonan” as the user entry point and display window, a new pattern of internal intelligent management services has initially taken shape within the group. This paper examines and discusses the construction of Southern Media Group’s intelligent management platform “Xiaonan” from the perspectives of top-level design, architectural planning, and implementation pathways.

Keywords: cultural-technological integration; intelligent management; application middle platform; data-driven decision-making

1.1 Project Background

Predictive capabilities were lacking, and group decision-making relied primarily on experience. Data had not yet formed effective support for dynamic resource allocation, overall transparent control, and business decision-making across the group. Since the 12th Five-Year Plan period, the rapid development of information technology has driven Southern Media Group’s application of technical means to transform business operations and group management to considerable breadth and depth. Information system construction has evolved from nonexistence to existence and from few to many. According to incomplete statistics, by the end of 2016, the group had nearly 60 internal information systems supporting existing workflows and methods, essentially achieving electronic and tool-based configuration of personnel flow, information flow, workflow, capital flow, and material flow.

In October 2017, on the 68th anniversary of *Southern Daily*, Southern Media Group proposed the development goal of building an intelligent cultural media

conglomerate, placing higher demands on the group' s information technology construction. Measured against these high standards, the existing situation gradually revealed its deficiencies [1], 主要表现在:

During the initial stage of informatization, to emphasize timeliness and maintain initiative, the group and its business units launched IT construction projects based on their own needs and within different scopes. This decentralized construction model persisted long-term without unified planning or positioning, resulting in redundant investments from duplicate construction and maintenance, which constrained the group' s overall development.

Existing information systems were built in different years, making inter-system interaction difficult and data sharing impossible, creating prominent data silos and information islands. Simultaneously, the lack of unified master data management meant long cycles and high costs for obtaining various data for group decision-making, with data integrity and accuracy difficult to verify.

Most existing information systems were based on traditional thinking and adopted passive support IT architectures that could meet current needs. However, due to compatibility and scalability limitations, they lacked flexibility in supporting new business requirement upgrades. Their insufficient iterative capability mismatched the group' s rapidly changing business needs, limiting their technical responsiveness to support group transformation.

Existing system data management was extensive, drowning data value and making it difficult to form intuitive analysis and scientific prediction through the collision of data models and business patterns. Therefore, constructing an internal intelligent management platform to address and optimize the pain points and difficulties in the group' s IT construction, and to build a new engine for smart media development through technology empowerment, has been elevated to a new priority.

1.2 Construction Objectives and Technical Key Points

The construction of the intelligent management platform aims at the group' s development goals, implementing “full coverage” of all dispersed geographical locations including group headquarters, local offices, and journalist stations, as well as all staff; “full connectivity” of management functions and operational businesses; and “full mastery” of business information and workflows. It seeks to achieve “datafication” of process operations, “mobilization” of application interaction, and “intelligentization” of business decision-making, thereby forming an internal intelligent management system that is “cross-hierarchical, cross-regional, cross-system, and cross-business.”

Under the unified guidance of Southern Media Group' s Technology Committee, the intelligent management platform project follows the principle of “unified yet separate, interconnected.” Basic functions and common application service needs are addressed by the group through unified solutions, construction, and opera-

tion and maintenance, while personalized application needs are independently constructed, operated, and maintained by business units under the group's overall strategic control. This forms a new information technology landscape featuring group coordination, vertical integration, consistent rules, unified standards, and overall linkage. The technical key points focus on three levels: application, user, and data.

First, implement an application middle platform architecture service. Under the group's unified-yet-separate control model, strategies such as loose coupling between platform systems, rational orchestration between services, and service contract definitions between functions substantially reduce interaction, integration, and collaboration costs between systems. Simultaneously, the middle platform constructs a capability-open architecture with horizontal integration and vertical decoupling, simplifying business logic, improving service function reuse rates, reducing the risk of system reconstruction, and enhancing the stability, scalability, and rapid response capability to business iteration of intelligent management services [2,3].

Second, establish a flexible user management and control system. Addressing the current situation of numerous group employees, wide geographical distribution, and difficulty in matching independent system users with account permissions and norms, the system uses personnel master data as a benchmark to build a permission management and control system featuring unified user information, unified identity authentication, unified single sign-on, flexible authorization allocation, and unified security auditing. This permission management and control system provides basic architecture and general model flexibility to support multi-system, full-stage user permission management, implements security review, and effectively ensures the consistency, integrity, and security of user identity, permission, and resource data.

Third, form accurate, unique, and on-demand flowing management master data. Establishing data model standards enables existing business data to be standardized and accumulated during system operations, achieving cross-system synchronous aggregation at the group level with a focus on integrating key data such as personnel, finance, and materials. This creates master data that is accurate, unique, and flows on demand. Emphasizing data assetization with dedicated personnel maintaining master data enables full lifecycle data management, establishes basic capabilities for group data governance, and meets the requirements of intensive and refined management.

1.3 Top-level Design and Sub-project Planning

The intelligent management platform project's construction is based on four transformations: "from decentralized to integrated," "from management-oriented to service-oriented," "from single-department to multi-department collaboration," and "from passive-closed to active-open." Each sub-task has clear objectives and specific plans, with both orderly individual progress and integrated overall

connectivity [3]. The planning includes “four internal unifications” and “four external unifications.” The planning architecture is shown in Figure 1 [Figure 1: see original paper].

Figure 1. Architecture Design of Southern Media Group’s Intelligent Management Platform Project

Four Internal Unifications: Based on the internal needs of the intelligent management platform. First, implement unified user management based on comprehensive, unique, and accurate personnel master data, thoroughly resolving the inconsistency of organizational and personnel data maintained by multiple information systems and enabling employees to map and transition from organizational identity to system usage passports. Second, construct a unified portal that, through hierarchical authorization and classified management, links business systems such as editorial, financial, and party affairs systems, integrates single sign-on and unified to-do lists, and strengthens the breadth and depth of group-wide control. Third, optimize business processes, financial accounting processes, and management processes to achieve unified operations, forming multi-dimensional cross-business analysis and global views that lay the foundation for business intelligence. Fourth, provide group users with multi-terminal, multi-media, and multi-form unified communication services, achieving stable, efficient, and secure communication and interconnection between group units, departments, and regional institutions anytime and anywhere.

Four External Unifications: Based on the external connection requirements of the intelligent management platform. First, the intelligent management platform follows a unified architecture, with underlying infrastructure using the group’s hybrid cloud resources under unified group management. Second, the platform achieves unified data storage using cluster architecture, ensuring integration and connectivity of personnel data, process data, business data, and management data to meet central database aggregation requirements. Third, the platform implements unified operations by establishing an intelligent operations center and building an efficient, standardized IT operations management system covering the basic and application layers to improve operational quality and achieve procedural, standardized, automated, and collaborative IT operations services. Fourth, the platform is incorporated into the group’s overall network security protection system, consolidating security 主体责任 (primary responsibility) for each application with equal emphasis on technology and management to ensure unified platform security.

Based on this architecture design of four internal and four external unifications, the intelligent management platform project has established a high-level working group, with functional departments including administration, human resources, finance, procurement, legal, supervision, party affairs, and property management collaborating to jointly promote various construction sub-tasks with strong participation from business departments. The sub-task list gradually formed by the intelligent management platform project includes: comprehensive human resources management, business-finance integration, Southern Sunshine Mall,

comprehensive OA collaborative office coverage, network telephony, intelligent access, upgrade of the “Three Majors and One Large” supervision platform, upgrade of the internal information express, shared meeting rooms, and smart parking.

2. “Xiaonan” as the User Entry Point and Display Window for Intelligent Management Services

Under the top-level design and sub-project planning of the intelligent management platform, the project established “Xiaonan” as the user entry point and display window to achieve concentrated, large-scale presentation of the platform’s construction results, gradually building a new pattern of internal intelligent management services within the group.

2.1 “Xiaonan” as More Than a Communication Tool, But a Connection Platform In July 2018, “Xiaonan” 1.0 was first launched, covering desktop clients (Windows and MacOS versions), web versions, and mobile versions (iOS and Android), prioritizing the resolution of internal employee instant communication, group discussions, internal notifications, and file transfer needs. By the end of September 2019, “Xiaonan” had achieved full coverage of group employees, with cumulative downloads across all versions exceeding 220,000 and an average of 180,000 daily service responses (peaking at 350,000). While “Xiaonan” has guided the transformation of communication habits and adapted to upgraded communication methods within the group, it is not merely an internal instant messaging tool. Its innovation lies in continuously developing and extending the connotations of mobilization, intelligentization, and datafication, firmly grasping the main entry point for group users, connecting applications, integrating services, and becoming the main window for the intelligent management platform, as shown in Figure 2 [Figure 2: see original paper].

Figure 2. “Xiaonan” as the User Entry Point and Display Window for the Intelligent Management Platform

2.2 Building the Application Ecosystem of the Intelligent Management Platform with “Xiaonan” As the user entry point and display window for the intelligent management platform, “Xiaonan’s” overall planning and technical implementation fully learned from and referenced the construction model of “Digital Guangdong” [4], establishing user thinking, integration thinking, and iterative thinking, and confirming the mainstream paradigm of “large platform, small front-end,” gradually creating a mature ecosystem for the group’s intelligent management services.

First, focusing on demand as the center to promote functional collaboration and intelligent control. Through vertical guidance and horizontal coordination across the group, “Xiaonan” has improved human resources management, financial management, procurement management, OA collaborative office management, and “Three Majors and One Large” supervision within the intelli-

gent management platform, implementing intensive construction between the group and secondary units. Comprehensive human resources management was achieved through a comprehensive upgrade of the HR system, making applications more secure, functional layouts more reasonable, and management subsets richer, while forming personnel master data with interface-level open capabilities. Business-finance integration achieves productization and visualization of financial statements for decision-makers while providing employees with paperless electronic salary distribution and online inquiry. Southern Sunshine Mall establishes a procurement management platform featuring “standardized management, high efficiency and convenience, and transparent sunshine,” standardizing procurement processes, improving procurement efficiency, and leaving complete traces throughout the procurement process. OA collaborative office achieves full group coverage, enabling full-terminal management of non-confidential and non-sensitive processes through unified to-do lists. The “Three Majors and One Large” supervision optimizes user account unification and approval experiences, adds daily conversation reminders and supervision data collection, achieves comprehensive intelligent supervision and visualization of group audit and supervision, and effectively prevents risks from non-compliant decision-making.

Second, focusing on users as the center to promote convenient and efficient public services. “Xiaonan” keenly grasps employee service needs, driving supply-side reform from a user experience perspective to promote safe, convenient, and efficient public services. After multiple version iterations, “Xiaonan” 3.0 has launched employee services including “My To-Do List, Intelligent Access, Network Telephony, Multimedia Conferencing, Shared Meeting Rooms, and Salary Inquiry,” promoting internal network revision and upgrades, and achieving centralized information publication and display for a series of lightweight applications including “Information Express, Office Guide, and Rules and Regulations,” as shown in Figure 3 [Figure 3: see original paper]. Currently, the “Intelligent Access” service provided at group entrances averages over 10,000 daily facial and QR code verifications. The “Network Telephony” application service was built in just two months, covering switchboards, public positions, and individual users, compatible with APP soft terminals, IP phones, and switchboard equipment, capable of connecting internal and external calls, with total construction costs nearly 60% lower than traditional models. “My To-Do List” connects to the collaborative office OA platform, sending to-do reminders through a small assistant robot, enabling many employees to approve official documents instantly, substantially improving group document processing efficiency.

Third, focusing on data as the center to support quantitative decision-making from data aggregation, data governance to data insights. Using “Xiaonan” as the 抓手 (lever), the intelligent management platform responds to the group’s data priority strategy. Based on the intensification of business functions and management services, it leverages the role of data co-construction and sharing, transforming management methods with non-specific standards and non-rigid constraints, and vigorously promoting the group’s transformation from experience-based management to quantitative management, ensuring accurate

and readily available data. “Xiaonan” 3.0 has successively launched a series of lightweight insight applications including “HR Inquiry, Financial Report Inquiry, Procurement View, Collaboration View, Cloud Resource View, and Security Posture.” The business operations and operational data of various application systems in the intelligent management platform support report output and visualization, centrally presented in “Xiaonan” to form data insights that comprehensively support scientific and quantitative group decision-making.

Figure 3. Partial Lightweight Applications in “Xiaonan” 3.0

3. Future Prospects for the “Xiaonan” Intelligent Management Platform

Establishing and improving mechanisms for data-assisted scientific decision-making will promote the stable and far-reaching high-quality development of Southern Media Group. In August 2019, the Ministry of Science and Technology and five other departments issued the “Guiding Opinions on Promoting Deep Integration of Culture and Technology,” which proposed: “Taking digitization, networking, and intelligence as technical bases, applying the achievements of the information revolution, adhering to integrated development direction, through process optimization and platform reconstruction, achieving effective integration of various media resources and production factors, promoting mutual integration and connectivity of news information, technology applications, platform terminals, and management methods, and driving deep media convergence.” Southern Media Group’s intelligent management platform will also deeply apply emerging technologies such as big data and artificial intelligence, adopt systematic thinking, implement standardization strategies, focus on system integration technology as a key breakthrough, and use the expansion and strengthening of “Xiaonan” as the methodological path to accelerate the transformation of scientific and technological achievements, promote the integration of enterprise resource elements and the improvement of management methods, cultivate new momentum for innovative development, and achieve practical results in the deep integration of culture and technology.

First, improve the new environment for collaborative governance. Southern Media Group’s intelligent management platform uses “Xiaonan” as its foothold, drives business process transformation through technology, innovates functional management methods, and advances the construction of “Xiaonan”—smart human resources, smart finance, smart procurement, smart supervision, and 5G smart parks—to further expand the intensive effect of technical capabilities, improve group functional collaboration capacity, and enhance overall group operational efficiency.

Second, explore new methods for data-driven decision-making. Deeply promote cross-departmental, cross-hierarchical, and cross-system process correlation and data integration, improve data timeliness and accuracy, combine business data 沉淀 (accumulation) with empirical rule summarization, and support the stable

and far-reaching high-quality development of Southern Media Group.

Third, provide new experiences in intelligent services. “Xiaonan” continuously improves its ability to respond to user needs in a timely, precise, and efficient manner, creating a cluster of lightweight applications with the same service origin, unified standards, and consistent experience, building a multi-category, multi-channel three-dimensional public service system for Southern Media Group, and enhancing employees’ sense of identity, gain, and happiness in information technology development.

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

Source: ChinaXiv –Machine translation. Verify with original.