

On the Construction of Technical Platforms for Central Kitchens: Postprint

Authors: Lin Songtao

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Abstract

Under the national media convergence strategy articulated by General Secretary Xi Jinping, central, local, and industry media organizations are actively exploring transformation practices suited to their contexts. Media convergence represents a tripartite integration of organizational structures, operational mechanisms, and technical platforms. Against the backdrop of mobile internet and social media ubiquity, coupled with rapid advances in big data and artificial intelligence, both content crea...

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Introduction

Under the national media convergence strategy articulated by General Secretary Xi Jinping, central, local, and industry media organizations are actively exploring transformation practices suited to their contexts. Media convergence represents a tripartite integration of organizational structures, operational mechanisms, and technical platforms. Against the backdrop of mobile internet and social media ubiquity, coupled with rapid advances in big data and artificial intelligence, both content creation and dissemination have become increasingly diversified. A critical challenge for media organizations is leveraging emerging technologies to enhance production, distribution, decision-making, and command operations, while aligning technical platforms with overall business systems. Consequently, media groups are placing unprecedented emphasis on technical support platforms, using technology-driven approaches to propel institutional reform even as operational models mature. As Minister Liu Qibao emphasized at this year's symposium on advancing deep media convergence, the key lies in reconstructing the gathering-editing-distribution workflow, with the "Central Kitchen"—or converged media center—serving as the flagship project to innovate organizational structures and build new editorial networks. This establishes the "Central Kitchen" as the standard configuration for all media organizations.

The “Four Ones” Framework

Drawing from implementation experience across multiple media organizations, the “Central Kitchen” can be understood through a “four ones” framework: a unified work platform, a technical support system, an all-media content management system, and a communication effect monitoring and feedback system.

1. Work Platform

The work platform comprises a converged command hall spanning multiple media and business units, along with centralized office facilities enabling integrated, mixed-team operations. Essential components include hardware infrastructure for editorial work, digital large screens, instant messaging systems, and unified authentication platforms. Since this platform must integrate data from various backend systems for command and display purposes, it also requires aggregation of heterogeneous system data. Application scenarios for command screens vary across media organizations, falling into two distinct modes: “display mode” and “practical mode.” For promotional and demonstration purposes, screens can be designed with rich, dynamic, and aesthetically sophisticated visualizations that garner leadership acclaim. In contrast, “practical mode” for routine central command requires streamlined data interaction scenarios, where text lists combined with concise visualizations enable leaders to grasp key points, focus on content, and conduct real-time on-site command. The command screen must also integrate reporting command modules, facilitating real-time video communication and live streaming between frontline reporters and editors or leadership to enable instant information exchange and coordination. True integration of personnel from different departments requires institutional mechanisms that transform mere physical colocation (“addition”) into genuine workflow integration (“convergence”).

2. Technical Support System

The technical support system ensures reliable guarantees for multi-channel converged production. This encompasses not only stable hardware and software environments for editorial networks, but also infrastructure including bandwidth, network security, storage, and even core technologies supporting the media group’s development. Adopting a “present-focused, future-oriented” approach, the system must remain adaptable to avoid rapid obsolescence. This necessitates a professional technical operations management team, with big data and AI serving as crucial pillars for future development, aligning with the internet’s data technology era.

3. All-Media Content Management System

All-media content management systems manifest differently across organizations. Some implement complete integration of all-channel editorial processes,

while others maintain independent channels with data-layer integration. Approaches range from comprehensive new construction to iterative upgrades of legacy systems. Despite these variations, all aim to reconstruct editorial networks and reengineer workflows to accommodate converged production and distribution across newspapers, websites, terminals, micro-media, and video platforms, leveraging new media tools such as VR, H5, short videos, drones, live streaming, and data journalism.

Under previous system-building paradigms centered on editorial processes, digitization alone could not unlock the Central Kitchen's full potential or achieve institutional workflow reconstruction. Minister Liu Qibao's directives emphasize extensive data resource management and application, including integrated manuscript databases, background materials, news 线索 acquisition, and judgment—reflecting a DT-era, content-asset-centered mindset. This requires top-down architectural planning that breaks legacy system constraints to build an advanced, stable, and open content production platform. Unified platform foundations facilitate content data circulation and enable self-optimization through workflow analytics.

For instance, TRS Company's Central Kitchen converged production comprises six core systems: a data resource convergence platform, converged production and creation platform, communication effect analysis platform, topic planning and analysis platform, coordination command and dispatch platform, and user asset management platform. The data resource management platform handles all-channel manuscript libraries from source to final product, online to historical, covering text, images, video, micro-media, and terminals. Through resource aggregation, it provides personalized “thousand-faces-for-thousand-users” applications for editors and reporters. Combined with the converged production platform, it enables multi-level Central Kitchen compatibility across media groups, supports multi-channel distribution, and facilitates cross-media content supervision. Leveraging big data, AI, and natural language processing, it transforms resource databases into knowledge bases, becoming the core data asset for “news + services.”

The converged production and creation platform supports content production across print, websites, digital newspapers, mobile apps, WeChat, Weibo, large screens, and H5 through unified platform support. Using process engine adaptation combined with automatic semantic and contextual matching, it provides intelligent creation assistance as a knowledge service.

4. Communication Effect Monitoring and Feedback System

As the subsequent link in media production, the communication effect monitoring and feedback system represents the most crucial element of workflow reengineering. Quantified communication effect data was unattainable in traditional print publishing systems, representing a critical missing link for closed-loop operations. In today's internet-plus era, with diversified content distribution, media

groups increasingly require such quantitative monitoring data to feed back into topic selection and production.

The communication effect analysis platform transforms traditional news products into internet products, quantifying dissemination through three dimensions: reposting, reading, and interaction. Combining local data, TRS data cloud services, and meta-search, it ensures precision. The system has been successfully applied to performance management, communication power indices, media influence, topic feedback, competitive media analysis, and copyright tracking.

The topic planning and analysis platform converts data thinking into business intelligence, providing personalized information monitoring, clue discovery, headline tracking, industry and regional hotspot clustering, and in-depth event analysis through big data and text intelligence services. It constructs over five major categories and dozens of dimensions including recommendation, dissemination, event analysis, knowledge services, and hotspot tracking.

The coordination command and dispatch platform emphasizes mobility, flattening, and visualization, covering task command, emergency dispatch, manuscript command, topic command, communication command, emergency response, and converged monitoring (contribution dynamics, real-time publishing status, real-time workflow display). Integrated with large-screen data, it realizes the command center for the Central Kitchen work platform.

The user asset management platform treats users and their behaviors as integral content components, enabling unified internal user management that打通s inter-system information flow while building an external user asset center. Through static and dynamic user management, behavior collection, user profiling, and intelligent semantic tagging, it facilitates massive user沉淀 services for media groups.

Implementation Variations

While these frameworks establish basic standards and architectures, actual implementations vary according to organizational characteristics. The People's Daily and Xinhua News Agency models differ significantly, as do approaches among central-level media. Regional media exhibit further variation due to differences in geography, scale, capital, and strategic thinking. For industry media, beyond content production and dissemination, the Central Kitchen must integrate industry resources and knowledge to provide customized government services, resource services, knowledge services, and user services through an “à la carte” production model.

Conclusion

The TRS next-generation converged media intelligent production and dissemination platform, which deeply integrates big data and AI with the media “Central Kitchen,” has been successfully applied in dozens of major domestic media

groups, redefining the information technology architecture for the converged media era. The platform encompasses intelligent production and dissemination, media big data, communication analysis, and operations, helping media optimize organizational structures, enable intelligent decision-making, and 沉淀 user value.

Author Biography: Lin Songtao serves as General Manager of the Press and Publication Division at Beijing TRS Information Technology Co., Ltd. With 15 years of experience building media industry technology platforms, he has led multiple award-winning national and industry-level projects. He has long served national, regional, and industry media organizations, overseeing core system construction for Xinhua News Agency, People's Daily, China News Service, and Economic Daily, among others. During the recent media convergence phase, he has planned and participated in overall transformation projects for dozens of media organizations nationwide, directly responsible for big data construction at Zhejiang Daily and Xinhua News Agency.

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

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