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Xinjiang “Pomegranate Cloud” : Ecosystem Services Supporting Media Transformation and Upgrading in the Post-Print Era

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Abstract

The Xinjiang Uygur Autonomous Region Shiliyun Converged Media Technology Platform (hereinafter referred to as Xinjiang “Shiliyun”) is an all-media intelligent cloud platform strategically prioritized by the Party Committee of Xinjiang Uygur Autonomous Region to further advance the deep integration and development of media, constructed in accordance with the overarching design principle of “centralized construction, integrated empowerment” . Xinjiang “Shiliyun” enables agile and rapid iteration through microservice architecture, with intelligent technologies deeply embedded throughout the entire production workflow. The platform is developed based on the principles of integration, intelligence, sharing, and diversification, thereby facilitating deep media convergence across all levels within the Xinjiang Uygur Autonomous Region. Through the “Shiliyun” platform, Xinjiang Daily has achieved content, technology, and service sharing with prefecture- and county-level converged media centers. The ecosystem services provided by Xinjiang “Shiliyun” support the transformation and upgrading of media at all levels, yielding significant social and economic benefits.

Full Text

Xinjiang “Pomegranate Cloud” : Ecological Services Supporting Media Transformation and Upgrading

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Abstract: The Pomegranate Cloud Converged Media Technology Platform of Xinjiang Uygur Autonomous Region (hereinafter referred to as Xinjiang “Pomegranate Cloud”) is an all-media intelligent cloud platform prioritized

by the Xinjiang Uygur Autonomous Regional Party Committee to further advance in-depth media convergence development. Constructed under the overarching design principle of “intensive construction, integrated empowerment,” Pomegranate Cloud leverages microservice technologies to achieve agile and rapid iteration, with intelligent technologies deeply embedded throughout the entire production workflow. The platform has been built with integration, intelligence, sharing, and diversification as its core tenets, facilitating the deep convergence of media at all levels across Xinjiang. Through the Pomegranate Cloud platform, Xinjiang Daily Press has achieved content, technology, and service sharing with prefecture- and county-level converged media centers. The ecological services provided by Xinjiang Pomegranate Cloud support the transformation and upgrading of media at various levels, delivering significant social and economic benefits.

Keywords: Pomegranate Cloud; media convergence; integrated empowerment; intelligent; iterative; multilingual; sharing; intensive

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Xinjiang “Pomegranate Cloud” represents the core hub project for achieving “one network across Xinjiang, one cloud across Xinjiang” in the region’s propaganda work, providing foundational resources and technical support for media at all levels to advance in-depth convergence development. The platform employed mature technologies to rapidly complete construction of its core systems, accelerating iteration through small, rapid steps, and officially launched on December 23, 2019. On August 13, 2020, the Pomegranate Cloud client application was released, beginning to provide news and comprehensive services including Party building, government affairs, and lifestyle services to the general public, with downloads exceeding 3.4 million by August 2021. On October 28, 2020, all 85 county-level converged media centers in Xinjiang that had completed their construction tasks were fully integrated into the Pomegranate Cloud platform.

Currently, Pomegranate Cloud primarily serves Xinjiang Daily and 85 county-level converged media centers, having established a “1+85+N” super editorial department, a “1+85+N” client matrix, and a “1+85+N” government service portal. Beginning in 2021, the platform has successively provided services to 14 prefecture-level converged media centers. During the 14th Five-Year Plan period, Pomegranate Cloud will establish connections with prefecture- and city-level media to form a “one network across Xinjiang,” constructing an all-media communication pattern with autonomous region media as the leader, prefecture- and city-level media as the backbone, and county-level converged media centers as the foundation, thereby creating a media resource pool and news production chain that connects the entire region.

1. Platform Characteristics Overview

1.1 “Platform-Tenant” Architecture for Integrated Empowerment and Scientific Layout

Xinjiang Pomegranate Cloud was designed under the unified coordination of the Xinjiang Uygur Autonomous Regional Party Committee’s Propaganda Department, which established the overarching design of “intensive construction, integrated empowerment” and partnered Xinjiang Daily Press with leading technology companies for unified construction. Through in-depth research and comprehensive demonstration, the platform developed a construction philosophy of saving funds and concentrating superior resources to provide integrated empowerment for media convergence development across the region. Construction considered media production comprehensively, creating a unified regional media work platform that ensures openness and inclusiveness to suit the development needs of different county-level media in Xinjiang.

Pomegranate Cloud employs a “platform-tenant” architecture, focusing on constructing a three-tier tenant operation system at the autonomous region, prefecture, and county levels. Xinjiang Daily Press, prefecture-level converged media centers, and county-level converged media centers all operate as “tenants.” The platform has been deployed in a dedicated cloud data center, enabling county-level converged media centers to conduct editing, services, and operations through the cloud simply by obtaining accounts, passwords, and corresponding permissions. This approach saves construction funds that can be redirected toward improving hardware standards, securing talent teams, and expanding content production, thereby effectively enhancing the construction and operation levels of county-level converged media centers.

1.2 Cloud-Based Construction Concentrates Superior Resources to Solve Pain Points

Xinjiang’s media convergence development started relatively late, with platforms characterized as “small and scattered” and methods as “old and rigid” being relatively common. From the initial planning stage, Pomegranate Cloud targeted these pain points and difficulties to effectively promote media convergence development. The mission entrusted to Pomegranate Cloud by the autonomous region Party Committee was to save construction funds and concentrate superior resources to build an advanced, autonomous, and controllable converged media platform. Due to its own constraints, Xinjiang faces numerous difficulties and high risks in building self-constructed platforms across various localities. Based on preliminary research and consultation, if counties and cities were to build platforms strictly according to the *County-Level Converged Media Center Construction Standards* and Pomegranate Cloud’s technical specifications, software system costs alone would require several million yuan, with annual operation and maintenance costs reaching hundreds of thousands of yuan, while still being fundamentally inferior to Pomegranate Cloud in functionality, security, and

advancement.

Pomegranate Cloud is among the first batch of media cloud platforms in China planned and constructed entirely in accordance with national standards and requirements issued by the Central Propaganda Department and the National Radio and Television Administration regarding county-level converged media center construction and provincial-level technology platform construction specifications, drawing on experiences from other provincial platforms. The platform has realized the value transformation of advanced technologies from theory to practice and will undoubtedly provide optimal services for the construction of county-level converged media centers and provincial platforms, supporting the convergence transformation of media at all levels in Xinjiang.

2. Key Technical Innovations

2.1 Microservice Technology Enables Agile and Rapid Iteration

Xinjiang Pomegranate Cloud employs a microservice technology architecture and DevOps continuous integration model to complete various system modules. Microservice architecture is a new technology for deploying applications and services on cloud computing platforms, decomposing monolithic applications into multiple services and establishing interface standards to modularize complex functionalities. This architecture enables each service to be independently scaled, upgraded, and replaced. Through mechanisms for automated testing, automated building, automated deployment, and automated platforms, the development and delivery of microservices becomes a normalized update mechanism. Consequently, the platform achieves agile upgrades and iterations, rapidly meeting new user demands and constituting continuous upgrading and support in a production state.

2.2 Intelligent Technology Deeply Embedded Throughout Production Workflow

A major highlight of Xinjiang Pomegranate Cloud is the seamless integration of big data analytics and artificial intelligence into the entire editorial workflow, achieving intelligent production through human-machine collaboration to help media overcome human resource bottlenecks, improve production efficiency, and ensure communication security. By deeply cultivating media big data, communication impact analysis, and user profiling, the platform enables comprehensive, accurate, and timely understanding of social conditions, public opinion, and user habits. This transforms the past practice of arranging topics primarily based on reporting instructions and vague value judgments, enabling precise production and intelligent distribution that improves editorial efficiency and enhances content quality and communication impact.

Leveraging natural language processing, image perception, knowledge mapping, and pornography/terrorism/violence identification technologies, Pomegranate

Cloud has developed intelligent proofreading and intelligent auditing capabilities. During the writing and editing process, editorial staff can call upon these tools in real-time to conduct content gatekeeping through human-machine collaboration, representing a technologically leading approach. The platform utilizes an open cloud architecture with loose coupling, resource pooling, and high scalability. The entire platform adopts unified industry-standard specifications with excellent openness, supporting standardized access by third-party system platforms.

2.3 Multi-Domain Architecture Supports Rapid Horizontal Expansion

Multi-domain architecture supports parallel operations. The platform establishes multiple parallel operating systems that can support independent management of each domain while also enabling cross-domain collaboration and unified command. Pomegranate Cloud can not only provide technical and capability support to autonomous region-, prefecture-, and county-level media units that have joined the platform but also offer platform support to cooperative units such as pan-media organizations. Multi-domain management achieves rapid horizontal expansion of platform capabilities, enabling comprehensive integration of systems, resources, and personnel as well as multi-layered management.

Multi-domain architecture enables mobilization. Mobile production supports multi-domain management through a cross-terminal instant messaging system that supports mobile, Web, and PC terminals, as well as multi-party real-time connections at command centers. This forms a network connection of personnel and resources, flattening command processes and enhancing command efficiency and collaborative response capabilities.

2.4 Hybrid Cloud Deployment Provides Dual Protection

Pomegranate Cloud is among the first batch of media cloud platforms in China constructed entirely according to national standards and specifications. The platform adopts a hybrid model combining internet cloud resource services with private deployment. For data communications, it employs a private cloud deployment architecture, with users accessing via dedicated lines or VPNs to ensure high-speed data access and transmission security. Hybrid cloud deployment can effectively reduce local storage space for big data while maintaining real-time synchronization between private deployment and the cloud. In the event of internet SaaS service interruptions, private deployment can continue normal operations.

Currently, a hybrid deployment has established an H5 rapid editing system, enabling all editors to conduct H5 editing on the Pomegranate Cloud platform and achieve autonomous content management. This effectively utilizes numerous templates provided by SaaS services, improving H5 content production efficiency through visualization, templating, componentization, and automation.

Future construction will achieve mutual backup between SaaS services and private services for live streaming and on-demand content, as well as interactive operations, while integrating AR/VR capabilities to better provide immersive scene experiences.

3. Platform Functions

3.1 Building Xinjiang' s All-Media Communication Ecosystem

Advancing media convergence development and constructing all-media and an “all-media communication system” is an urgent contemporary task before us. Xinjiang Pomegranate Cloud employs a unified intelligent production architecture to create all-form media convergence production, achieving one-stop production and distribution. By fully utilizing content data, business data, and user data, it builds a modern media communication system with rich content, diverse carriers, and extensive coverage.

Pomegranate Cloud has become the primary production platform for mainstream media in Xinjiang, currently serving over 5,000 editorial users and 5,256 correspondent users, with more than 400 communication channels established by various converged media centers based on the platform. Its core product, the Pomegranate Cloud client, positioned as a “news flagship, government affairs hub, and service assistant,” has achieved interconnectivity and content sharing with 85 county-level “Good Place” clients. Together with prefecture-level clients under construction and multilingual clients, this builds Xinjiang' s all-media communication ecosystem.

3.2 Cloud Convergence Enables Autonomous Region Media Sharing and Integration

Pomegranate Cloud assists grassroots media content production through resource sharing at three levels: technology, content, and services. The platform has formed a shared distribution platform for content resource aggregation across Xinjiang through big data, artificial intelligence, and resource pooling technologies, providing content supply services for media at all levels and achieving content sharing. By connecting with service platforms of autonomous region Party and government departments and other social service platforms, the platform provides users with over 2,800 service items. These service modules are also configured for all county-level “Good Place”series clients, supporting various media in exploring the “news + service” model to enhance user stickiness.

From the Pomegranate Cloud editorial management platform to county-level clients, except for some customized functions developed according to Xinjiang Daily Press requirements, the vast majority of functions are open to county-level converged media centers, providing technical support for media at all levels and types across the region. Pomegranate Cloud focuses on building all-channel converged production capabilities to assist the deep convergence development of media at all levels in the autonomous region. Through process reengineering, the

platform has established an overall architecture for all-media content production. Currently, both Xinjiang Daily Press and 85 county-level converged media centers conduct converged production through Pomegranate Cloud, preliminarily constructing a comprehensive, multi-level, multi-voice converged media communication system integrating “clients, Weibo, WeChat public accounts, Douyin, Toutiao, websites, newspapers, television, and radio,” along with a mobile-first, single-collection, multi-generation operation mechanism.

3.3 Intensive Construction Delivers Clear Social and Economic Benefits

Pomegranate Cloud platform construction represents an upgrade project for Xinjiang’s media convergence and a strategic project for strengthening and improving grassroots propaganda and ideological work while promoting media transformation and upgrading in the autonomous region. The platform has assisted Xinjiang Daily Press in smoothly realizing deep reform of media convergence. Leveraging Pomegranate Cloud’s technical support capabilities, Xinjiang Daily Press has promoted in-depth media convergence development by constructing new systems, establishing new mechanisms, and creating new practices. Based on current media communication characteristics, Xinjiang Daily adheres to a mobile-first strategy, led by Pomegranate Cloud client construction, establishing an integrated organizational structure adapted to all-media production and communication, exploring a work mechanism where one team serves multiple platforms, guiding the existing workforce to transition to all-media journalists, and driving the main force into the main battlefield.

Since 2021, relying on the Pomegranate Cloud platform, Xinjiang Daily has integrated various forces, publishing over 350,000 articles across platforms in forms including graphics, video, live streaming, posters, long images, H5, and animation, accumulating more than 4.6 billion clicks, with 20 products achieving over 10 million views. According to the Party Central Committee’s deployment, county-level converged media centers will become the mainstream public opinion front, comprehensive service platform, and community information hub for all ethnic groups. The Pomegranate Cloud platform has become the optimal business production system solution for Xinjiang’s county-level converged media center construction. County-level media need not worry about shortages in technical teams or financial resources; relying on the Pomegranate Cloud platform, they can conduct their own system construction and complete platform setup in a short time. The Pomegranate Cloud platform has gathered the strength of the autonomous region’s mainstream media, creating county-level converged media centers with unified voices that provide the most professional information to the public, becoming a super entry point for media to publicize and serve Xinjiang and for users to understand and love Xinjiang.

4. Future Development Plans

4.1 Multilingual Intelligent Editing Development to Enhance Communication Capabilities

Xinjiang is a multi-ethnic and multilingual region. Due to insufficient professional translation and review personnel, media across the region, especially county-level converged media centers, lack adequate multilingual content production capacity, affecting the timely and accurate communication of the Party's voice. To strengthen comprehensive coverage in internal publicity and enhance the international communication capacity of Xinjiang stories, the Pomegranate Cloud platform will construct a multilingual intelligent media platform project, promoting Pomegranate Cloud to become a multilingual international publicity service front for Xinjiang facing the world.

The platform will introduce multilingual intelligent translation, multilingual intelligent auditing, robot writing, and robot video production functions. Through human-machine collaboration, it will drive breakthroughs in multilingual natural language processing technologies for Uyghur, Kazakh, Mongolian, Kirgiz, and other languages, achieving multilingual intelligent translation, intelligent production, and intelligent auditing. This will improve multilingual editorial production efficiency, enrich content production forms, enhance multilingual communication capabilities, and strengthen the internal and external publicity capacity of media across the autonomous region.

4.2 Tracking Advanced Technologies to Strengthen Intelligent Production Capabilities

Pomegranate Cloud will continue introducing new technologies such as big data, cloud computing, and artificial intelligence to build a standardized, highly secure, and reliable network interactive activity empowerment platform serving all of Xinjiang with multi-level linkage and online-offline integration. By constructing multi-dimensional content recognition systems and using tracking algorithms, the platform will improve video frame extraction quality and detection efficiency for video and image content detection. It will establish an auditing mechanism combining "AI machine auditing + manual auditing + quality inspection and review" to provide judgment standards during manual auditing stages, assisting in improving manual auditing efficiency and reducing content auditing costs.

With the popularization of 5G communication technology and smart wearable devices, VR and AR will become important forms for future news presentation. Pomegranate Cloud will keep pace with technological trends, achieving mutual backup between SaaS services and private services for live streaming and on-demand content and interactive operations, while integrating AR/VR functions to better provide immersive scene experiences. Through parallel intelligent assistance, human-machine collaboration, and intelligent production, the platform will help media production forms become more diverse, interaction

patterns more flexible, and converged media content more timely.

4.3 Aggregating Multiple Business Forms to Build a Comprehensive Operations Service Platform

Xinjiang Pomegranate Cloud achieves multi-business aggregation through the construction of a one-stop multi-terminal operations platform, creating development opportunities for various industries while steadily promoting media reform. Pomegranate Cloud will aggregate various comprehensive services, creating a fingertip government affairs center for regional citizens through mobile clients and establishing a new comprehensive service platform of “news + government affairs + services,” ultimately building an intelligent media platform of “Internet + media + smart government + smart city operations” that advances media transformation and upgrading through ecological service capabilities.

Leveraging the platform’s advantages in big data, intelligent technology, and content technology, the platform will actively promote cultural creative IP, digitization, and contextualization by building cultural creative big databases, cultural creative big data planning and operation systems, and cultural creative marketing service systems. This will drive transformation and efficiency enhancement in the scenic area tourism industry, establishing Pomegranate Cloud as a cultural creative service center for all of Xinjiang and supporting the autonomous region’s cultural enrichment project. Simultaneously, taking the cultural creative vertical field as an entry point, the platform will strive to provide think tank services for government, enterprises, and social citizens through resource integration, intelligent technology, and smart content.

The platform fully leverages its service capabilities, providing not only services for converged media centers but also publicity services for governments and enterprises, achieving “open source.” The user base of Pomegranate Cloud includes not only media production units but also governments and enterprises seeking to conduct marketing and publicity through the platform. Moreover, Pomegranate Cloud possesses comprehensive external operation service capabilities, including hosting WeChat public accounts, mini-programs, and clients. Through the construction of multiple capabilities, the Pomegranate Cloud platform will become a more comprehensive and integrated service platform, providing ecological services for Xinjiang media, supporting media transformation and upgrading, and facilitating deep media convergence.

Through process integration, production intelligence, resource sharing, and business diversification, Pomegranate Cloud has built a powerful autonomous region-prefecture-county media content aggregation and distribution ecosystem, providing effective support for production factor integration, resource sharing, and collaborative development of media at all levels in Xinjiang. The platform has not only become a new converged production cloud platform and intelligent technology support platform for Xinjiang media but also a co-built and shared data resource platform and one-stop operation service platform, providing integrated

empowerment for media convergence development across the region.

In the future, Xinjiang Pomegranate Cloud will continuously track advanced technology development trends, continuously introducing new achievements from the information technology revolution to build an integrated intelligent all-media communication system covering the entire region with vertical integration and horizontal connectivity, enhancing Xinjiang media communication capabilities, advancing media convergence transformation, and making due contributions to building a new mainstream public opinion front in Xinjiang.

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(Responsible Editor: Li Jing)

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