Cross-regional Media Collaboration Post-print in News Reporting Command Systems

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Abstract

In major news events, news reporting command systems across regional media organizations can facilitate the integration of multiple departments and units, enabling a reduced workforce to collaborate effectively and produce more comprehensive coverage. These systems allow multiple reporting command systems to intercommunicate, synchronize data, and achieve the objectives of resource sharing and coordinated operations.

Full Text

Preamble

Cross-regional Media Collaboration in News Reporting Command Systems

Abstract: In major news events, cross-regional media collaboration through news reporting command systems enables multi-departmental and multi-organizational coordination, allowing limited human resources to work together efficiently to produce more comprehensive coverage. By facilitating communication and data synchronization among multiple reporting command systems, these platforms achieve resource sharing and collaborative objectives.

Keywords: dispatch command; cross-regional; sharing; collaboration; National Digital Composite Publishing System Project; Media Collaborative Work System

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1. Cross-regional Media Collaboration Support in Reporting Command Systems

In major news events, each media organization faces constraints on the number of field reporters, forcing them to focus on narrow angles and limited aspects of coverage. For large-scale events such as the Olympic Games, potential news stories exist at every venue, among every team, with every coach and athlete, during each competition, and across different access points. Limited personnel can only capture a fraction of these stories. Therefore, media organizations must form alliances to divide labor and coordinate dispatch, enabling more comprehensive, multi-angle, and three-dimensional coverage while avoiding redundant interviews, missed stories, and overcrowding. Additionally, equipment resources can complement each other's strengths and weaknesses. Such collaboration need not be limited to media groups within a single organization; media outlets from different regions (within a province or across provinces) can unite to form cross-regional collaborative dispatch and command structures. Various forms of media alliances already exist extensively in China, including long-term, short-term, and temporary alliances, and reporting command systems that support cross-regional collaboration can significantly facilitate their operations.

While news dispatch command systems are already widely used in the field, each media organization typically operates its own isolated system. To achieve joint dispatch and command across multiple organizations, these disparate systems must be interconnected. This interconnection is accomplished through standardized interfaces that enable message exchange and manuscript synchronization. For interface design, we recommend adopting lightweight, standard interfaces based on the HTTP protocol using RESTful architecture strategies and Web API development, with JSON as the standard data transmission format. Message queue (MQ) technology using a publisher-subscriber pattern should be employed to handle data asynchronously, preventing bottlenecks and eliminating the need for frequent polling that would consume valuable communication bandwidth between cross-regional servers.

Architecturally, the number of participating organizations in such collaborations is typically not large, and having a primary organization to coordinate activities and resolve conflicts is advisable. Therefore, the reporting command system of a media group's headquarters or the leading organization of a media alliance can serve as the central exchange hub, with other systems exchanging data through this intermediary. While this creates strong dependencies, it reduces the number of communication channels from N×(N-1) among N reporting command systems to a more manageable number. For scenarios with many participating organizations where a central system is not desired, blockchain-based decentralization could be considered as an alternative approach.

1.1 Data Synchronization Requirements

To achieve manuscript synchronization across organizations, auxiliary information such as personnel departments and notifications must also be synchronized to enable effective collaborative reporting. The following categories outline the data requiring synchronization:

Personnel and Department Information: Cross-organizational coordination requires each system to display departments and personnel from other media units available for joint dispatch. This basic information is essential for collaborative interviews and can be shared through authorization controls that enable synchronization during joint operations and revoke access afterward. Personnel information is also required for manuscript authorship, location tracking, notifications, and online communication.

Notification and Announcement Information: For joint reporting, synchronized messaging across different media organizations ensures coordinated efforts and shared understanding of overall objectives, plans, and arrangements. This represents a core responsibility of the central system and underscores the necessity of establishing a central reporting command hub. Notifications are issued uniformly from the center to other organizations' reporting command systems, with acknowledgment status fed back to the central system to ensure effective delivery.

Clue Information: New developments, progress updates, requirements, and tips with news value should be synchronized across all media systems to enable collective decision-making and research. Each organization can then determine whether to pursue joint action or independent coverage. Individual media systems can decide whether to push newly received clues to allied media systems through the central hub.

Manuscripts: As the primary data and ultimate objective of cross-regional collaborative reporting command systems, manuscripts are automatically or selectively pushed from each organization's reporting command system to others via the central system upon submission. Manuscripts can be categorized as raw material, semi-finished drafts, completed articles, or press releases for further processing by other media outlets.

Geographic Location: Reporting command systems feature map-based visualization to display the locations of personnel, clues, vehicles, and equipment. To enable intuitive monitoring of event developments and rapid dispatch of nearby resources, each media organization must push its resource location data to the central command system, allowing other organizations' systems to access and visualize this information.

Online Communication: Providing communication channels for personnel across different media organizations and regions facilitates on-site reporter coordination, front-back interaction, and manuscript transmission. However, designing online communication between different reporting command systems

presents challenges, including temporary personnel management, message synchronization, time delays, and data packet loss. In practice, we recommend that personnel from all media organizations log in to a unified communication platform (such as the central system's exchange platform) to ensure stable, timely, and complete communication, with each media system periodically synchronizing communication history from the central system.

Other Data: Additional synchronizable data includes equipment information, equipment location, and equipment operators. Integrating equipment from various media organizations into the collaborative reporting framework, along with manuscript adoption rates and readership metrics, provides valuable feedback for tracking effectiveness. Performance metrics are also crucial, displaying each organization's contribution in terms of shared manuscript quantity, type, quality, and adoption rates, as well as personnel and equipment participation in joint coverage. These metrics serve as a reference for long-term cross-media collaboration and can inform reward and penalty mechanisms to balance contributions among organizations.

1.2 Security and Authentication

For secure inter-system communication, authorization is required before data access. Authorization can include time limits and scope restrictions to ensure that only necessary information is exposed to other systems, achieving collaborative sharing while protecting sensitive data. Each request should include authorization codes and timestamps to verify that the calling party is an authorized server and that the request falls within a reasonable time window. When necessary, HTTPS channels should be used, with both calling and called parties employing identity authentication certificates and multi-layer encryption. Since reporting command systems are typically deployed within newspaper offices to protect sensitive data such as leadership movements, cross-regional collaborative sharing inevitably requires internet transmission, making HTTPS and VPN technologies essential security measures.

Effective joint interviews and long-term media alliance operations depend not only on software functionality but also on the enthusiasm, sharing willingness, and assessment mechanisms of participating organizations. Beyond providing fundamental sharing and collaboration capabilities, software systems must also supply performance metrics for organizations, departments, and individuals.

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