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Postprint: Enhancing Urban Image Communication Capacity Through News Data Analysis

Authors: Li Lijuan

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Abstract

[Objective] Systematic news data collection, processing, and application can accurately characterize media profiles, optimize news production workflows, excavate the distinctive value of cities, thereby constructing a collaborative mechanism between cities and media, and significantly enhancing the communication effectiveness and international influence of urban image.

[Method] This article combines cases and data to elucidate the role of news data in guiding journalistic practice, strengthening communication strategies, shaping city business cards, and other aspects, providing theoretical support and practical pathways for urban image communication.

[Result / Conclusion] In the context of media convergence, the analytical application of news data has become the core driving force for enhancing the external communication of urban image. Leveraging the analytical application of news data to improve the external communication capacity of urban image enables news data to better empower the industry and society.

Full Text

Enhancing City Image Communication Power Through News Data Analysis and Application

Kunming Chenggong District Media Convergence Center, Kunming, Yunnan 650500

Abstract

[Objective] Systematic news data collection, processing, and application can accurately characterize media profiles, optimize news production workflows, excavate distinctive urban values, and thereby construct a collaborative mechanism between cities and media that significantly enhances the effectiveness and

international influence of city image communication. **[Methods]** Through case studies and data analysis, this paper illustrates the role of news data in guiding journalistic practice, strengthening communication strategies, and shaping city identity cards, providing theoretical support and practical pathways for city image communication. **[Results/Conclusion]** In the context of media convergence, the analysis and application of news data has become a core driving force for enhancing external city image communication. By leveraging news data analysis, cities can empower their image communication and enable news data to better serve the industry and society.

Keywords: media convergence; news data; analysis and application; city image; communication power

1. Collection and Processing of News Data

The news data referenced in this paper refers to the aggregate of news articles published by media at various levels about a specific locality or city, which must be distinguished from data journalism.

1.1 Data Collection Methods

Currently, manual search and statistics remain the primary method, with newspapers requiring daily review of electronic editions for statistical purposes. Some cities also employ automated web crawlers and API interfaces to obtain news data, though AI large models have seen limited application in this field. While manual data entry is relatively slow, it allows for simultaneous data cleaning and preprocessing, resulting in fewer duplicates, errors, and irrelevant information. Annual manual data entry forms a comprehensive database system from which information can be extracted as needed. While cities have long maintained awareness of data collection, they lack standardized tagging systems, resulting in insufficient data integration, storage, cleaning, distribution, rewriting, and efficient utilization.

1.2 Analysis and Application of News Data

Data analysis refers to the process of extracting useful information and forming conclusions through detailed research and summary of data using appropriate statistical methods. In practical applications, news data analysis can help regions or cities make judgments and adopt appropriate communication strategies to enhance communication quality and effectiveness. The most critical procedure in news data analysis and application involves setting keywords for data capture. To accurately collect news data about city image, city-related keywords must be filtered to capture highly relevant data.

1.3 News Data vs. Data Journalism

Data journalism is a news writing method that analyzes and utilizes data to ask questions of the data and identify valuable news angles and stories. Both approaches share commonalities in requiring data acquisition, analysis, and presentation, and both enable a holistic perspective on issues. However, the value of news data leans more toward planning and guiding news production, while data journalism is better suited for comprehensive group-based or diachronic analyses.

2. Potential Value of News Data

News data possesses multiple important values. The following provides a brief overview of its potential value from two perspectives: promoting news production and social development.

2.1 Value in Promoting News Production

2.1.1 Innovating News Concepts In the era of deep media integration, the analysis and application of news data can guide journalists to establish internet-oriented concepts in news gathering and production, listen to online audience opinions, emphasize media-audience interaction, and achieve complementary advantages between new and traditional media. Traditional media organizations should place greater emphasis on developing and utilizing new media platforms, optimizing audience sharing and audiovisual experiences, and better reflecting the differentiation of new media news reporting.

2.1.2 Reshaping Production Processes Analyzing news data can reveal the communication power of news products. For instance, client-based news is more suitable for mobile reading and sharing, with higher readership, likes, and comments for the same news release. Only by valuing and reshaping news production workflows—determining whether to release news early or late based on platform characteristics—can media effectively enhance production efficiency. Journalists should consciously learn to use AI and other intelligent technologies to strengthen the integration of multiple communication methods and more efficiently gather and produce news works.

2.1.3 Improving News Quality Traditional media has always emphasized the integrated communication of high-quality content and the innovation of news reporting content production to effectively improve news quality. With news data support, traditional media can become more targeted and actionable in encouraging journalists to develop news reporting resources, conduct in-depth grassroots interviews, and create more fresh and vivid news works relevant to audience interests, continuously improving the quality of news products.

2.1.4 Creating Media Profiles Defining media profile dimensions such as reporting themes, styles, and influence enables us to create media profiles and establish mainstream media evaluation systems through news release data analysis. This allows for clearer understanding of different media organizations' news release needs, enabling targeted submissions to maximize adoption and expand city image communication scope. Establishing cooperative relationships with influential media and conducting precise communication around city image creates more application scenarios for city-media collaboration.

2.2 Social Development Value

2.2.1 Using News Big Data to Verify Work Implementation Every work plan specifies measurable indicators for implementation degree. News data analysis extracts news reporting content and data related to these indicators to form work implementation reports, providing decision-making support and workflow optimization for higher-level departments.

2.2.2 Using News Data for Decision-Making in City Management or Enterprises News data includes collecting data from various channels (mainstream news media and their new media platforms) to analyze audience attitudes, emotional tendencies (positive, negative, or neutral) toward specific events, topics, figures, or organizations, as well as topic popularity and development trends. Using keyword search and data mining techniques to identify relevant information provides decision-making basis for city management departments or enterprises, helping them understand public opinion or make decisions.

2.2.3 Promoting Social Equity and Justice China possesses massive news data resources with tremendous potential for data mining and development. Promoting data resources to form new productive forces in medical, educational, elderly care, and other related fields and industries has broad prospects. When all sectors of society work together to enhance data service convenience, inclusivity, and accessibility, accurately grasping the real demands of various groups, providing diverse quality services, promoting social equity and justice, and improving people's livelihood and well-being become achievable.

2.2.4 Providing Materials and Cases for Academic Research City managers can leverage news data they possess to conduct cross-boundary cooperation with universities and research institutions, coordinating top-level design with grassroots exploration, accelerating the establishment of data property rights systems, and further activating data element potential. Breaking digital barriers, promoting data sharing, optimizing the digital economy development environment, and sharing digital economy development achievements not only provide materials and cases for academic research but also cultivate professional talents in big data and city image communication, enhancing data analysis and application capabilities.

3. Case Studies of Media Profiling Through News Data

Through news data analysis and application, media institutions can be profiled, forming the basis for evaluating city-media cooperation, adjusting city news resource allocation and communication strategies, and creating more application scenarios for collaboration.

3.1 The Irreplaceable Authority of *People's Daily*

The news production and release of *People's Daily* and other People's Daily-affiliated traditional mainstream media comprehensively demonstrate that content is the foundation of media survival. The core element of media influence is that the content products produced and disseminated by media, along with the value concepts they carry, can gain audience recognition and endorsement. By providing users with needed unique quality content, producing numerous viral news stories, and accumulating large fan bases, the "Xiake Island" WeChat public account successfully attracts young people through value innovation and content innovation, maximizing and optimizing the public opinion guidance power of new mainstream media. Breakthrough cases select major themes highly aligned with the times, providing comprehensive information and strong social concern. As of the end of 2023, *People's Daily*'s "New Media Matrix" data shows: People's Daily Weibo has 153 million followers, ranking first on the entire Weibo platform and maintaining China's top media Weibo influence for over 10 consecutive years. People's Daily WeChat has 55 million followers, with comprehensive influence ranking first among all public accounts. People's Daily Douyin has 170 million followers, ranking first across the platform.

3.2 *Workers' Daily* with Good Search Experience

Media or platforms offer different user experiences. *Workers' Daily* has precise strategies and positioning, having built a search system suited to its model and communication business characteristics that aligns with the internet's "borderless" nature. When audiences click on media web pages, they receive good media information service experiences. On the Zhonggong website, entering city name keywords brings up *Workers' Daily* articles first, followed by Zhonggong website articles, categorized and sorted by time, making data entry very convenient when clicking and counting. Conversely, experience affects media click rates. A media organization's online display platform represents important network assets that, through continuous operational optimization, become increasingly user-friendly, leading to higher usage rates. Through continuous content updates, more news gets indexed, creating more opportunities for audience clicks.

3.3 Xinhua News Agency and *China Daily* with External Communication Advantages

External communication represents the general trend in media development. In the new media environment, Xinhua News Agency and *China Daily* effectively

fulfill international communication functions. Their reporting covers politics, economy, culture, technology, society, and other fields with diverse perspectives. For example, to attract young audiences, they make full use of social platforms and emerging short video platforms to produce concise, vivid, and interesting short videos and animations introducing Chinese popular culture and technological innovation achievements. Xinhua achieves collaborative development across different media platforms, forming communication synergy. For instance, they publish in-depth reports and special articles on official websites, guide users to click and share this content on social media platforms, and simultaneously push personalized news through mobile clients, forming a comprehensive communication network. In 2023, Xinhua News Agency's international department English reporters published full-length signed articles on U.S.- and India-related topics in the internationally renowned journal *The Diplomat*. After publication, these articles sparked widespread attention and discussion in Western discourse circles, representing an important step in seizing mainstream foreign media space to win international discourse power and providing reference for subsequent breakthroughs.

4. The Role of News Data Analysis in Enhancing City Image Communication

4.1 Providing Precise Positioning for City Image Communication

News data analysis can accurately identify target audiences for city image communication through mining and analyzing massive news information. By analyzing browsing records, search behaviors, likes, and comments from users across different media platforms, we can understand audience interest preferences, hot topics, and information reception habits, thereby developing more precise communication strategies for city image communication. For example, if data analysis reveals that young audiences in a particular city show strong interest in cultural creative industries and fashion trends, city image communication can highlight the city's advantages in creative industries and fashion elements, conducting targeted promotion through social media and short video platforms to attract young audience attention and participation, improving the precision and effectiveness of city image communication.

4.2 Optimizing City Image Communication Content

City image communication requires attractive and appealing content. News data analysis can help city managers and communicators deeply understand urban advantages and characteristics, excavate representative and appealing city image elements, and integrate them into communication content. Through news data analysis, we can discover development highlights and unique charms in economy, culture, technology, ecology, and other aspects, providing rich materials for city image communication. For example, by analyzing news data about urban scientific and technological innovation achievements, we can extract the

city's core competitiveness and innovation highlights in the technology field, produce relevant promotional videos and graphic reports, and disseminate them on domestic and international media platforms to enhance the city's visibility and influence in technology, improving the quality and effectiveness of city image communication.

4.3 Enhancing Timeliness and Dynamism of City Image Communication

In an era of rapid information dissemination, city image communication needs to timely capture and reflect urban development dynamics and hot events. News data analysis enables real-time monitoring and analysis of news information, quickly identifying hot topics and emergencies in cities and incorporating them into city image communication scope. Through real-time news data analysis, city managers can quickly understand public attention and opinion tendencies toward events, promptly release accurate and authoritative information, guide public opinion, and avoid the spread of negative information and misunderstandings. For example, when cities hold major events or emergencies occur, big data analysis can provide real-time understanding of media coverage and public discussion, enabling timely release of event progress, response measures, and other relevant information to enhance the timeliness and dynamism of city image communication and improve urban image and credibility in the public mind.

4.4 Promoting Multi-channel Integration of City Image Communication

City image communication requires broad dissemination through multiple channels and platforms to improve coverage and influence. Big data analysis can help city managers integrate communication resources across different channels and achieve synergistic effects. By analyzing news data from various media platforms, we can understand each platform's communication characteristics, audience groups, and communication effects, thereby developing reasonable multi-channel communication strategies. For example, for short video platforms with strong visual impact and communication effects, we can produce exquisite city image promotional videos; for news websites and social media platforms primarily featuring text content, we can publish in-depth reports and special articles to interpret the city's development advantages and cultural connotations. Through big data analysis to achieve integrated and coordinated multi-channel communication, city image communication can achieve complementarity and interaction across platforms, improving comprehensive communication effects and enhancing city image visibility and reputation.

5. Paths and Strategies for Enhancing City Image Communication Power Through News Data

City image communication work must study the integration of new technologies and industries, and news data analysis and application is the natural choice. Through analyzing and applying news release data, cities can improve communication effectiveness, deeply excavate characteristic highlights in urban development, identify keywords for city image enhancement, quantitatively evaluate urban international communication influence, and promote the construction of more authentic, three-dimensional, and comprehensive city images on the international stage.

5.1 Building City Identity Cards Through Concentrated Reporting

Using media news release data, we can quickly identify keywords related to city image and rank their importance to guide the creation of city identity cards. By providing practical news materials and finished products including text, images, and videos to media, cities can leverage media reports to disseminate city image domestically and internationally, demonstrating urban soft power. Taking Douman Flower Market as an example, through concentrated media reporting, the “Douman Flower” city identity card has been successfully created, enhancing international influence. Douman Flower Market is known as the “Asian Flower Capital,” ranking first nationally in fresh cut flower transaction volume for 25 consecutive years. During the 2024 Spring Festival, People’s Daily, China.org.cn, Yunnan Daily, and other media at various levels focused on Douman Flower Market, releasing over 300 related news reports. On February 7, People’s Daily’s WeChat public account published the article “Thanks to Yunnan for Romanticizing My Whole Year,” which received over 100,000 reads and more than 1,000 likes. On February 8, Yunnan Net specially published a commentary “This Article is Fragrant, Comments are Sweet!” continuously expanding Douman Flower’s influence from multiple angles.

5.2 Increasing City Exposure Through Major Events

Cities should adopt the concept of “needing not only influence but also reputation,” re-examine their characteristics, unite all mainstream media and their new media platforms, focus on excavating and applying keywords, and help cities form new communication identity cards. In the data era, city image communication faces various important opportunities that manifest in valuing digital practice and action, as well as understanding how to leverage media and network platforms. In news reports about various sports events, the World Canoe Training Base located in Chenggong District, Kunming City, Yunnan Province, is frequently mentioned, giving the keyword “Chenggong Base” high exposure. Conversely, searching “Chenggong Base” on search engines or media platforms yields extensive news data about various sports events. Reporting around sports events and athletes’ achievements can widely disseminate the city’s unique climate, geographical location, and other outstanding advantages, making “Cheng-

gong Base” a key identity card for the city and effectively enhancing city image exposure and external communication power.

5.3 Diversifying City Image Through Short Videos

The rise of short video platforms provides new opportunities for city image communication. The *China Online Audio-Visual Development Research Report (2024)* shows that as of December 2023, the total number of short video accounts across the entire network has exceeded 1.55 billion. In a network environment characterized by “no communication without video, no reach without platforms, no resonance without emotion,” seemingly minor online “incidents” can be amplified through media short videos and quickly escalate into hot topics. City after city has gained attention and become popular driven by hot topics and traffic. Hongya Cave, a popular attraction in Chongqing, was fully completed and opened in 2006, but suffered continuous losses for five years with poor business performance. It wasn’t until 2016, with the rapid rise of China’s short video market, that Hongya Cave finally ushered in its golden age after waiting for 10 years. In 2018, Hongya Cave’s unique architectural appearance and dazzling nightscape lighting became an instant hit on short video platforms, and it has since become a popular attraction attracting tourists from across the country to check in.

5.4 Forming Unique City Labels Through New Media Topics

The setting and dissemination of new media topics create unique labels for cities. The *China City International Communication Influence Report (2023)* comprehensively presents the image and influence of Chinese cities in international communication through big data analysis and multi-dimensional indicator evaluation. Netizens discuss more diverse topics, focusing not only on the latest developments in urban development but also sharing urban scenery, food, and other life scenarios from more lively perspectives. From early popular tourist cities like Chengdu, Changsha, and Xi’an to recently viral niche cities like Zibo and Harbin, cities have become popular one after another by leveraging internet development opportunities. In 2023, under hot topics like “College Student Special Forces Tourism” and “Citywalk,” the rise of the traffic economy has driven one “internet-famous city” after another to break through. From Zibo’s “Barbecue” craze to Harbin becoming the top trending destination in 2024 through “Southern Little Potatoes” and “Pear Platter Arrangement,” more and more second- and third-tier non-typical tourist cities have attracted large numbers of tourists from across the country with their unique personality labels and down-to-earth local life scenes.

5.5 Enhancing City International Communication Through Emergencies

International communication capacity building is the first step for Chinese cities to “go global,” while the actual effect of communication work—its attractive-

ness and influence on global audiences—is the ultimate goal of city international communication. Therefore, based on existing international communication work in various localities, scientifically and accurately evaluating their effectiveness provides an important reference for Chinese cities to improve future international communication work and effectively enhance overseas influence and reputation. Taking the northward and southward migration of the Asian elephant herd in Yunnan as an example, multimedia reporting demonstrated China's achievements in ecological protection and enhanced the city's international image. In late May 2021, a herd of elephants migrated northward and southward in Xishuangbanna, Yunnan. Media at all levels launched news and integrated media works about the elephants' journey, highlighting moments, interesting stories, and hotspots along the way. The panoramic reproduction of effective measures taken by relevant departments in protecting the elephants and public awareness of elephant protection illustrated successful practices and fruitful achievements in ecological protection. The elephant journey attracted widespread attention from netizens at home and abroad, focusing attention on domestic wild elephant protection topics and quickly bringing the city's positive image into the spotlight.

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