

Postprint: Innovative Pathways for Television News Gathering and Editing in the Big Data Context

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Abstract

Currently, society has entered an entirely new era characterized by rapid development of social productive forces. Emerging technologies such as mobile Internet, big data, and cloud computing are evolving at an unprecedented pace, demonstrating fundamental characteristics of mobilization and intelligentization. The advancement of these novel technologies has profoundly impacted every facet of human life, gradually influencing news production and delivering substantial shocks to the journalism industry. The eruption and evolution of the Internet revolution have precipitated transformations in news production, while intelligent technologies are inducing changes in television, thereby engendering novel features in news production—customization of news production, fragmentation of content, mobilization of production methods, and datafication of news content. This article primarily investigates innovative pathways for television news gathering and editing within the big data paradigm.

Full Text

Research on Innovative Paths for TV News Gathering and Editing from the Perspective of Big Data

Abstract: We have entered a new era characterized by rapid development of social productivity and emerging technologies such as mobile internet, big data, and cloud computing that evolve daily, exhibiting fundamental features of mobility and intelligence. These technological advances have profoundly impacted all aspects of our lives and are gradually transforming news production, delivering a significant shock to the journalism industry. The eruption and development of the internet revolution have triggered changes in news production, while intelligent technologies are transforming television, giving rise to new characteristics

in news production: customization of production, fragmentation of content, mobilization of production methods, and datafication of news content. This paper primarily explores innovative paths for TV news gathering and editing from the perspective of big data.

Keywords: big data; TV news; content production; innovative paths

In 2009, the internet technology industry gave rise to a professional buzzword—big data, referring to data collections whose scale in acquisition, storage, management, and analysis far exceeds the capabilities of traditional database software tools. With the rapid development of network technology, big data has permeated every domain of social life, gradually manifesting its influence on people. The application of big data and internet technology in daily life has accelerated the speed of information acquisition, broadened channels for obtaining information, and raised audience demands for news consumption, compelling the news gathering, editing, and dissemination industry to continuously innovate and progress. To satisfy people’s increasingly diverse spiritual needs and to adapt to societal and temporal development, journalists must broaden their horizons, advance with the times, and enhance their professional capabilities. Grounded in big data technology, they must innovate concepts and approaches to news gathering and editing.

1. Characteristics of News in the Big Data Era

The advent of the big data era has expanded the production objects of data journalism from small data to big data. According to the Reuters Institute’s “Big Data for Media” report, small data is measured in gigabytes or smaller units, whereas big data is measured in terabytes or larger. Big data journalism refers to a news form that discovers facts from massive datasets using data science methods and presents data through visualization techniques, based on public interest and news value. The characteristics of news in the big data era primarily include the following aspects.

1.1 Large Data Samples Enhance News Persuasiveness

The new characteristics of news in the big data era become apparent when compared with traditional journalism. Traditional news is primarily produced by journalists who select topics, supplement them with relevant materials of their choice, and organize and process them into news stories for publication. Audiences cannot participate in the gathering, editing, or production process and can only passively receive information, which may lead to public skepticism about the authenticity of some news and diminish its persuasiveness.

However, in the big data era, supported by the popularization of the internet, news gathering and editing rely on massive data samples and are subject to constant public supervision. People can not only learn about various events from news but also discover many underlying issues. Numerous news media

platforms have established their own news databases containing data from various industries. When reporting news, these databases analyze the industries involved in a story, establishing a cognitive framework in the audience's mind that extends beyond receiving specific news items to excavating deeper issues behind events, thereby providing audiences with more in-depth news coverage.

This technology, benefiting from the big data era, can enhance readers' interest, help them recognize deeper problems in news, and ultimately improve news persuasiveness.

1.2 Big Data Technology Enriches News Dissemination Channels

Before the emergence of new media, people primarily obtained news through the four traditional media: television, radio, newspapers, and magazines. These traditional media mainly broadcasted or published ready-made news, and the public could only passively receive whatever was released, unable to choose their preferred method of news consumption or filter for topics of interest.

However, as big data technology arrived alongside the rapid development of the internet, journalists have responded to the demands of the times by developing increasingly diverse forms of news dissemination and advancing news gathering, editing, and production technologies. People can now choose their preferred methods from numerous news platforms, such as various mobile apps and computer browsers. Once users enter news keywords into search engines on computers or mobile devices, the backend automatically saves their search history. By analyzing the content and timing of users' news browsing, platforms can identify topics of interest and push news content that matches their psychological needs, or recommend news that interests the majority. This realizes a news dissemination model centered on the public, respecting their right to choose and truly satisfying diverse reading demands.

For example, the news department of *Taiyuan Evening News* created the "Taiyuan Current Affairs" WeChat public account in 2017, which attracted over 2,000 followers within just a few months. During the senior high school and college entrance examination periods, the account published multiple news stories related to these exams, all generating significant traffic, with some articles reaching over 20,000 views. This demonstrates that the news published by "Taiyuan Current Affairs" aligned with contemporary readers' interests and concerned topics they cared about. Statistical analysis of such data can help journalists more clearly identify the focus and purpose of news gathering and editing.

1.3 The Big Data Era Improves News Timeliness

Regarding news, numerous scholars have provided many definitions from different perspectives. Although these versions vary, almost all emphasize the character "new," meaning they stress that news reports on recently occurred facts. Therefore, timeliness is one of the most important features of news; the stronger

the timeliness, the more accurately news reflects reality. Discovering the news value of an event at the first moment and publishing it earliest represents strong timeliness, which places higher demands on journalists' professional capabilities. They must have broader information sources, stronger information sensitivity, and higher information processing capacity to publish the latest event information more quickly. Otherwise, news that loses strong timeliness also loses its news value.

The arrival of the big data era has provided convenient conditions for journalists to ensure news timeliness. They no longer need to establish numerous news monitoring points to track events, nor search for news based on experience and personally visit event sites to understand facts. Now, they can utilize big data platforms to discover valuable news clues from various types of information and directly contact news subjects through the internet at the first moment to understand real situations. This provides support for timely and accurate news gathering, editing, and publication, ensuring the realization of news timeliness.

2. News Production Models

2.1 Data Journalism Model

Data journalism, also known as data-driven journalism, is a new reporting model that emerged with the arrival of the data era and represents the inevitable result of data technology' s comprehensive penetration into the news industry. Its emergence has transformed traditional news production workflows to a certain extent. Unlike traditional journalism, which is based on on-site interviews and processing, data journalism is founded on data selection, mining, statistics, analysis, and observation, constituting a new form of information reporting for the contemporary era. Modern big data network technologies have enabled the emergence of data journalism, which represents a relatively comprehensive infiltration of the news industry and will inevitably change traditional news production.

Furthermore, data journalism is an emerging field that global journalism has developed in response to the big data era, representing the future development trend of the industry. It encompasses not only the major functions of traditional journalism—such as information dissemination, public opinion supervision, and knowledge transmission—but also possesses advantages that traditional journalism lacks, such as the effective supervision of the public opinion environment. Historically, media' s supervisory power has derived from public support, relying on people' s cognitive abilities to analyze and judge public opinion. Currently, with the rapid development of the internet, people mostly express their views on news events through online platforms. However, online dissemination is often unsystematic and incomplete; if the information people publish is not processed and integrated, it cannot form an effective public opinion environment. Data journalism can help journalists effectively supervise the public opinion environment by combining data with news.

2.2 Machine News Production Model

Internet technology has ushered humanity into an era of data explosion, and the changing times have triggered transformations in news production methods. Some news reporting has already begun shifting from human writing to machine writing, using algorithms to analyze patterns in human writing to produce relatively perfect machine-generated content with little difference from human writing [1]. Machine news production can also be figuratively called robot journalism, which uses algorithms to automatically generate news from structured data. This data-dependent news production model can rapidly produce massive amounts of news content. In today's fiercely competitive market environment driven by commercialization, robot journalism, with its powerful timeliness, will become an inevitable trend in the news industry's development.

Robot journalism relies on big data, which is a collection and description of massive datasets characterized by large volume and diverse data types. Prediction is the core function of big data; based on massive data and the relationships between data points, future practices can be predicted, and value can be realized through secondary data utilization. For news production, big data has significant impacts on multiple stages, including news collection, gathering, analysis, and processing. In the big data era, using big data technology to complete news gathering and editing has gradually become a reality. Currently, data journalism mines data through repeated scraping, filtering, and restructuring, eliminates invalid data, visualizes the presentation of data, and ultimately forms news stories. This news production process triggered by data journalism creates possibilities for the machine news production model.

2.3 News Video Live Streaming: The New 'Favorite' of News Production in the Internet Era

Video live streaming news is a new form of journalism emerging in the internet era of the new period. Information producers broadcast sound and images in multiple media formats in real time, providing audiences with comprehensive, multi-layered visual experiences. Unlike previous online reporting dominated by pictures and text or short news videos, video live streaming news presents continuous and immersive news scenes [2]. This form of news video live streaming differs from traditional television media's live news broadcasting, where televised news is pre-processed and audiences view finished content. In contrast, contemporary news video live streaming reports news developments on the spot, full of randomness and uncertainty, which for the public means stronger persuasiveness and higher authenticity.

3. Innovation Paths for TV News Gathering and Editing

3.1 Customized and Intelligent News Production Models

With the emergence of numerous “citizen journalists,” society is flooded with mixed-quality information that can sometimes confuse public perception. Therefore, in the new media era, formal news organizations provide audiences with more standardized news information. The extensive information databases accumulated by media organizations, combined with the professional techniques of their staff, can provide customized information guarantees for audiences, delivering relatively high user experiences.

Additionally, regarding individual citizen journalists, in future societies people may implant chips in themselves or wear small network cards, turning themselves into mobile network entities that can use various surrounding objects for news writing, transmission, or distribution. For relatively formal news organizations, they should adopt collaborative approaches to improve and expand omnimedia, utilizing multiple media formats and different channels for production and disseminating through integrated networks, potentially providing audiences with more comprehensive and holistic experiences of news events.

3.2 Adapting TV News to Mobile Development Trends

The emergence of the internet has made information dissemination extremely fast, allowing journalists to update information from anywhere at any time. To compete for the timeliness of information release, many news organizations frequently employ dynamic writing forms for reporting. However, such information does not deliver complete news to audiences but rather provides them with superficial and fragmented pieces of events, leading to audiences’ incomplete understanding of the information’ s integrity.

We live in a grand network era with diverse media types. The same information may be expressed through different forms such as text, video, and images, but this content is scattered across various places on the internet without unified integration, mutual supplementation, or systematic organization, resulting in fragmented news production content. This information neglects the essence of news, causing fragmentation in news production content [3].

Additionally, the emergence of mobile internet terminals such as smartphones, iPads, and laptops has also driven changes in news production methods. The use of smartphones has accelerated the growth of on-site news reporting. Whether professional or non-professional journalists, as long as they have network access, they can use mobile terminals like smartphones and iPads to quickly write and publish on-site news reports from anywhere at any time. Modern multifunctional smartphones integrate numerous functions. Therefore, both from the perspective of news gathering and news distribution, “mobilization” characteristics have begun to emerge [4].

3.3 Exploring Crowdfunding Models for TV News Development

An activity that raises funds for journalism is called “news crowdfunding.” The specific approach is as follows: First, journalists propose a news reporting plan on a platform; then, if consumers have personal interest in the reporting, they can provide financial support for the project through the platform. If, within a specified period, these media professionals can obtain their target amount, they can use the donated funds to plan and advance the news reporting. Therefore, TV news can attempt to develop through crowdfunding models.

3.4 Datafication of News Content

Additionally, data journalism represents the primary innovative path for TV news production under the big data perspective. Also known as data-driven journalism, it refers to a completely new reporting form backed by big data technology and supported by internet-collected big data. News content is formed from piles of data. While accurate, authentic, and persuasive, it also lacks some vividness and liveliness, making articles somewhat rigid and dull [5].

Furthermore, from today onward, internet technology development will undoubtedly exhibit exponential growth, and network popularization will bring various conveniences to life. In current society, the journalism field is discussing whether newspapers will become extinct. According to social development patterns, newspapers as a medium may disappear, but the news content within them will never become outdated. It will enter a brand-new medium to continue disseminating fresh content. Especially as Internet of Things technology becomes increasingly prevalent, one can imagine that in future life, people may implant an internet chip in their bodies and use any surrounding medium to receive or transmit information, without worrying whether they are cooking, doing housework, or even driving. This information transmission will be ubiquitous yet completely safe [6]. Additionally, advances in VR technology may give every family an intelligent butler in the future, which can help with information transmission, analysis, and collection, completely eliminating worries about missing important news content [7].

In summary, it is precisely due to the rapid growth of internet technology that the news industry has experienced strong impacts from mobile and intelligent technologies. News production methods have undergone tremendous changes along with societal and technological development, and various new production characteristics have formed under this new trend, thereby driving the transformation and development of the entire news industry.

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

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