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A Brief Analysis of Reporting Methods in News Studios (Postprint)

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Abstract

In recent years, as domestic and foreign print media and online media have gradually ventured into the field of video news production, reporting methodologies for news video programs have been continuously evolving. Through an analysis of studio reporting approaches in the media industry and leveraging the technical implementation of Xinhua News Agency's studio, this paper conducts focused research on large-screen display systems, touch-screen interaction, and virtual studio systems, while exploring live broadcast business processes and implementation methodologies.

Full Text

An Analysis of News Studio Reporting Methods

Abstract: In recent years, as domestic and international print and online media have gradually ventured into video news production, news video programming methods have continuously evolved. This paper analyzes reporting methods in media industry studios, focusing on large-screen display systems, touch-screen commentary systems, and virtual studio systems based on the technical implementation at Xinhua News Agency's studio, and explores live broadcast business processes and implementation methods.

Keywords: Large screen; Virtual; Live broadcast

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The rapid development of network, mobile internet, and virtual technologies has brought innovation to news studio reporting methods. News studio report-

ing is no longer simple news broadcasting, but rather creates more vivid and timely video news through multi-perspective scenes, more flexible presentation methods, richer source materials, and more convenient audience participation, thereby enhancing user viewing experiences. The introduction of new technologies has freed television program production from natural constraints and limitations, providing directors and producers with a creative stage in terms of space, methodology, and technical conditions.

1. Multi-Scene Spatial Scheduling to Connect News Events

Scene design forms the foundation of news studio spatial design, which must consider not only stage art and lighting planning but also overall spatial layout, including the coordination and transition between different scene reporting methods. As audience demands for news programs increase, the need for diversified news presentation grows, requiring more flexible reporting forms including seated broadcasting, standing broadcasting, walking broadcasting in large spaces, and virtual presentations. This necessitates multi-scene spatial design for studios, incorporating physical scenes, LED large-screen areas, touch-screen commentary zones, and virtual scenes within the same studio space. These scenes maintain unified styles, consistent color tones, and harmonious lighting ratios, allowing hosts to seamlessly transition between seated, standing, and walking presentations. Through multi-scene, multi-camera panoramic spaces, news programs can achieve live presentation, message aggregation, multi-directional interaction, and multi-resource scheduling.

Xinhua News Agency's studio design follows multi-scene design principles to achieve panoramic news presentation. Any angle can become a news program scene, with seven camera positions including an 8-meter jib and a remote-controlled camera providing rich shot scheduling. A single news program can utilize multiple scenes such as seated broadcast areas, touch-screen commentary areas, standing broadcast connection areas, and virtual display zones, hosted by one person or multiple hosts working collaboratively. Through standing and walking presentations across scenes, multi-host and multi-camera variations not only create visual freshness for audiences but also generate new interactions between hosts, meeting the production, recording, and live broadcast needs of various news programs including live news, special interviews, newspaper reading, and interactive segments, transforming the studio into a multi-perspective, multi-scene, multi-camera, and multi-functional news reporting venue.

2. Presentation Through New Technologies and Multi-Methods

(1) Large-Screen Display Technology

In display technology, fine-pitch LED display technology has advanced rapidly, delivering delicate picture quality, seamless splicing, arbitrary size combination, convenient intelligent control, and moiré pattern elimination. These develop-

ments have enabled large-area LED displays to increasingly enter news studios, becoming a powerful reporting tool for news studios both domestically and internationally. Xinhua News Agency's studio has installed two large LED screens in the main anchor area and standing broadcast area. The main anchor screen primarily serves as a background display, while the standing broadcast screen is mainly used for live presentation and remote connections. The introduction of large screens creates more interaction between studio space and news event spatiotemporality, making studio space "infinitely extendable." Their flexible, aesthetic, and convenient packaging display methods not only add new visual elements to the studio but also drive news programs to incorporate massive information and enable multi-level interaction. As the visual core of the entire studio, they integrate with other scenes to form an open, panoramic studio environment, achieving fresh presentation experiences and visual impact.

(2) Touch-Screen Commentary Technology

Touch-screen commentary technology was introduced into video news reporting relatively early, utilizing the latest multi-touch and LCD display technologies. It enables browsing, annotation, and handwriting commentary on images and video materials through multiple display modes. Through network connectivity, it integrates and broadcasts content from mobile terminals, computer network pages, local program materials, and packaging templates. While displaying big data news information, the multimedia touch commentary system allows hosts to comment on news events and interact with network reporters, experts, and audiences. Through design modifications, Xinhua News Agency's multimedia touch commentary system uses an 84-inch touch display screen, employing multimedia processing technology and network access technology to directly display and comment on news materials including newspapers, videos, images, web pages, and social media in real-time on the touch screen. This provides hosts with a platform for full expression, enhances audience participation, and greatly enriches news program reporting methods.

(3) Virtual Studio System

The virtual studio system is a unique television program production technology developed in recent years. Its essence is the digital real-time synthesis of computer-generated virtual three-dimensional scenes with live footage of people filmed by television cameras, enabling synchronized changes between people and virtual backgrounds to achieve seamless fusion. This simulates perfect news scenes or composes news elements, greatly enhancing the sense of news presence. Virtual studios can effectively improve space utilization, reduce costs, and revolutionize television program production. Xinhua News Agency's studio is equipped with a virtual studio system featuring virtual display scenes and host virtual presentation areas. It generates virtual three-dimensional backgrounds and props, obtains motion parameters of foreground cameras through sensor devices installed on camera lenses and tracks, uses pre-positioning and parameter settings, then synthesizes hosts with virtual elements through a video compositing system to generate fully three-dimensional effects fusing real people with virtual backgrounds, foregrounds, and props. Xinhua has already applied this

technology in some news reports, achieving visually impactful results.

3. Live Broadcast Implementation

Live reporting involves numerous technical issues throughout the entire process, including signal acquisition, switching, transmission, and broadcast. The development of digital technology has enabled full digitalization of video news production. Signal acquisition can be accomplished through digital cameras, mobile phones, and other devices. 4G backpacks bound with SIM cards, together with cameras or mobile phones themselves, can complete both audio-video acquisition and transmission. Large-scale live broadcasting requires multi-channel signal acquisition, with multiple cameras simultaneously collecting audio-video signals from multiple positions, which are then switched by directors and transmitted back to the news studio. As an information convergence center, the studio can receive digital audio-video signals in real-time while also obtaining video, text, image, and audio information from satellites, the internet, mobile terminals, and social media channels. Through multi-scene functionality and live program design, these materials are processed with real-time packaging and organic integration to produce a live news program, which is then distributed to users and audiences through the internet, fiber optics, satellites, mobile terminals, and social media channels.

3.1 Live Implementation at Xinhua News Agency's Studio

To meet live reporting needs, Xinhua News Agency's studio has undergone high-definition transformation while strengthening technical infrastructure for live broadcasting. In terms of information convergence, it has achieved the aggregation and deployment of video, audio, text, and image signals from satellites, fiber optics, 4G transmission, IP streams, web pages, WeChat, and mobile phones. Through real-time packaging and processing in various functional scenes and hosts' organic integration according to program scripts, rich live programs are produced. To enhance visual appeal and demonstrate audience interaction and participation, the studio features multi-scene stage art design, multimedia display large screens, touch-screen commentary areas, and virtual presentation areas. Through on-site organization and coordination by hosts, news scenes, remote connections, multimedia materials, and audience interaction effects are fully displayed.

To ensure smooth live broadcast command, Xinhua News Agency's studio has built a command communication system that can accommodate 120 journalists, editors, directors, and technical staff online, greatly improving communication efficiency. For safety assurance, the studio has constructed a "dual-system hot backup + emergency" system structure. During live broadcasts, if the main system fails, it can automatically switch to the backup system; if both fail, the emergency system can be activated. In news reporting, Xinhua News Agency's studio can meet the requirements of integrated all-media news reporting, massive information aggregation, comprehensive coverage, and multi-channel dis-

tribution, achieving safe and efficient multimedia live broadcasting that makes reporting more compelling.

4. Conclusion

News studio reporting method design should follow the design philosophy of “all-media, all-live, multi-scene, multi-functional, and process-oriented,” while integrating all-media technologies including broadcasting, television, communications, IT, and IP to achieve multi-source collection, multi-media interaction, multi-scene space sharing, and multi-platform distribution. This meets the development needs of media in the new era and achieves the strategic goal of an all-media production and broadcasting platform.

In news studio reporting practice, on the one hand, rigorous and efficient business processes should be established according to program requirements to ensure safe and effective news reporting. On the other hand, extensive experimentation with new video production technologies and methods to explore how to coordinate technical resources such as large-screen interaction, touch-screen commentary, virtual synthesis, and online packaging to improve news program visibility remains a worthy research topic. Faced with the demands of various new media broadcasting platforms, how to perfectly apply these new technologies and systems to studio news production in the all-media era merits careful consideration.

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

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