Postprint of Research on News Program Production in the Context of Media Convergence

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Abstract

In the contemporary era, various new media continue to emerge, while old and new media exhibit a trend of integrated development, prompting traditional media to transform in response to the impact of new media. For news programs, the evolving media environment has diversified both the forms and channels through which audiences access news, compelling news media to innovate in program production to re-attract audiences and adapt to the new era context. Accordingly, this paper first analyzes the intrinsic relationship between new media and television news production, then identifies the production characteristics of news programs within the media convergence framework, and finally elaborates on the application of emerging technologies in news production under this context, for reference.

Full Text

Research on News Program Production in the Context of Media Convergence

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Abstract: In today' s era, various new media platforms continue to emerge, presenting a development trend of integration between old and new media. Traditional media are transforming to cope with the impact of new media. For news programs, changes in the media environment have diversified the forms and channels through which audiences access news, forcing news media to innovate in program production to re-attract audiences and adapt to the new era. Based on this, this paper first analyzes the intrinsic relationship between new media and television news production, then points out the characteristics of news program production in the context of media convergence, and finally explains the application of emerging technologies in news production for reference.

Keywords: media convergence; news programs; news production; news dissemination

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Media convergence refers to the fusion of two or more communication technologies into new communication technologies, whose functions and communication effects must necessarily be superior to the original technologies and media. Following convergence, various media exhibit a development trend toward multifunctionality and integration [1]. With the continuous development of internet technology, new media has gradually entered people' s field of vision. According to the "China New Media Development Research Report," new media refers to "media based on computer technology, digital broadcasting technology, and communication technology, utilizing wireless communication networks, the internet, and other channels, with mobile phones, televisions, computers, and other devices as terminals." Today' s news programs have widely begun to apply new media technologies, allowing audiences to experience the charm of new news communication methods. However, news professionals must note that in the new media era, various new media forms emerge endlessly. Only by keeping pace with technological development and continuously innovating in program creation and content settings can news programs become more watchable and influential [2-3].

1. Media Convergence and News Programs

Broadcasting and television media have close ties with technological progress, and each technological revolution drives changes in communication methods. Television news, as an important media form, should adapt its production and communication methods to technological development. In recent years, thanks to advances in internet technology, media convergence has become increasingly common. Traditional broadcast and television news are merging with internet services to form more diverse news communication methods [4]. In response, we should redefine television news production models, establish efficient and supporting technical architectures, achieve deep integration between television news and various media platforms, and occupy the high ground in fierce market competition.

2. Characteristics of News Program Production in the Context of Media Convergence

2.1 Omnimedia Collection and Broadcasting

First, omnimedia collection of news materials. In the past, news producers had to send reporters to the scene for interviews or understand events through telephone calls, which already involved a certain time lag from the event itself. Even eyewitnesses might forget some details, and relaying news facts through multiple people often resulted in discrepancies from the truth, compromising the authenticity and comprehensiveness of news [5]. In the context of media convergence, news subjects themselves can use mobile phones to film specific situations at the scene, objectively reflecting the truth. News informants have, to some extent, assumed the role of journalists. Simultaneously, news programs can solicit news clues nationwide and globally through the internet, and using online hotspots as news materials has become a common practice for many news programs.

Second, omnimedia broadcasting of news programs. The carriers for news program broadcasting have expanded from television sets to various intelligent terminals. News program broadcasting is no longer limited by time or location; as long as the network is accessible, audiences can watch news programs. Traditional signal transmission required facilities such as satellites and signal towers, making it difficult to achieve news transmission and coverage in areas with poor infrastructure, which to some extent limited the quality and quantity of television programs. Now, digital signal transmission can utilize P2P, C/S, and other technologies to transmit information, making news program coverage broader and information transmission faster through increased bandwidth [6].

2.2 Integrated Application of Big Data

Relying on highly developed network platforms, news producers can understand public opinions on news events before program broadcast or obtain statistical data from backend systems to gauge public opinion trends. This helps news producers avoid sensitive areas and grasp public concerns, providing data support for in-depth reporting. On the other hand, news producers can also collect audience feedback and comments to improve programs [7-8]. For example, CCTV has established a presence on platforms such as “Bilibili”and “TikTok,”becoming a “content creator” (UP 主), changing its previously serious and rigid reporting style, accepting netizens’ “roasts,” and improving communication content and forms based on audience comments with good results.

2.3 Audience Participation in Programs

Audience participation in programs is reflected in the fact that news program content is not entirely determined by producers but is instead based on audiences independently selecting hot topics they want to watch, after which producers

determine content and sequence. Simultaneously, news programs also display audience comments during broadcast and answer audience questions. This approach not only consolidates existing news audiences but also better captures current news hotspots [9]. For example, CCTV International' s "China Public Opinion Field" program sets topics based on audience attention indices, displays heat indices for various topics, and has experts answer audience comments in real-time, achieving good ratings.

3. News Production Models in the Context of Media Convergence

In the context of media convergence, how can news programs achieve the communication effects described above? The author believes that new production models must be adopted, namely "converged media production" centered around news content, blurring the boundaries between television stations and the internet to achieve "integrated station-network operation."

3.1 Model Characteristics

First, converged media communication. This uses converged media as channels to achieve multi-platform, multi-media, and multi-channel release of news content, enabling comprehensive docking of various media to cover broader regions and target groups.

Second, converged media collection and editing. This reconstructs the collection and editing process based on equipment and channels to achieve real-time news material acquisition and rapid editing, incorporating audiences into the material collection and editing process.

Third, converged media operation. While broadcasting news programs through media platforms, this integrates information content with commercial elements, embeds value-added services into the system structure, improves advertising performance, and generates revenue from multiple sources.

3.2 Model Design

As shown in Figure 1 [Figure 1: see original paper], the news production model includes three major modules: "content aggregation," "program production," and "distribution organization," encompassing both traditional news production methods and converged media internet news collection and release.

Figure 1: Converged Media System Design for News Programs

First, the converged media content library. The functions of the converged media content library include content aggregation, content organization, content processing, and content presentation. The system builds a content-based news production model around the converged media content library, which not only supports uploading and recording of traditional news materials but can also

intelligently capture materials from internet sources, with multi-directional and real-time updated information sources.

Second, the converged media production management platform is the system' s focus. Its functions include news planning management, production process monitoring, and release channel management. The management scope of this platform includes not only traditional channels such as scripts and rundowns but also unified planning and management of news production for various media types [10-11].

Third, production tools are the technical carriers for implementing system functions and the main embodiment of the system' s technical value. In traditional news production, recording, uploading, packaging, and non-linear editing were all implemented within the station, and news release was also conducted within the television station. In the converged media architecture, production tools continue to innovate, enabling station-network linkage. The emergence of UGC/PGC tools, video editing tools, and large-screen interaction tools has brought new vitality to news production. The following introduces converged media news production using UGC/PGC tools as an example: (1) Data information is transmitted back through PGC terminals using wireless networks [12]; (2) Media data receives the transmitted data; (3) Media inventory management processes the returned data; (4) Data is aggregated into the content library (as shown in Figure 2 [Figure 2: see original paper]). On-site journalists use mobile phones and other devices to shoot video and image materials, uploading them to the portal in UGC/PGC form. After entering the inventory, all news producers can download the materials.

Figure 2: PCG (Presumably PGC) Reporting Process

The operation flow of the above system achieves, on the one hand, multi-channel material acquisition and shared material application, and on the other hand, multi-platform news output, covering as many existing media platform types as possible to meet the viewing needs of different audience types [13].

4. Application of Emerging Technologies in News Production in the Context of Media Convergence

The above section elaborated on a converged media news production system covering three core stages: material acquisition, news production, and news release. In specific news production, some emerging technologies can enhance news programs. Several widely applied technologies are introduced below.

4.1 Using Clip-Splitting Technology to Achieve News Program Sharing

The clip-splitting system is a network product developed by Sobey, a comprehensive multimedia network system that provides technical support for television news program production on the one hand and achieves full-station sharing

of news materials on the other, thereby improving news program production quality. In the converged media era, news programs are usually launched simultaneously on traditional and new media platforms. Programs on new media platforms are generally reprocessed versions of traditional platform programs, usually requiring no complex animations or special effects, only splicing or cutting to transform discontinuous programs into convenient continuous reading wholes or multiple continuous segments. In this process, the clip-splitting system can provide an editing workflow of "splitting → main station media library → sub-station media library → content release," achieving resource integration and process optimization [14-15]. For example, Lanzhou Television' s "Colorful Lanzhou" program uses clip-splitting technology to integrate video resources from programs such as "Lanzhou News," "First People," and "Lanzhou Zero Distance," repackaging and re-editing them for launch, with its audience share continuing to rise.

4.2 Using Cloud Computing Technology to Reduce News Production Costs

Cloud computing is a service that centralizes computing resources and performs automatic software management. In simple terms, it can "turn televisions into computers and computers into televisions." Cloud computing can establish television news nodes nationwide using relatively inexpensive server clusters with multi-location backups, accomplishing at low cost what previously required mainframe computers. Users can "enjoy the benefits" of accessing various data, reducing news program production costs [16]. To some extent, applying cloud computing to news program production can provide shared resources and quality news information for collection, editing, and production personnel, while also leveraging advantages in timeliness, interchangeability, and richness to broaden news program communication scope [17].

4.3 Using Virtual Reality Technology to Improve Viewing Experience

Virtual reality technology can use computers and various output devices to provide audiences with more realistic feelings when watching news. Different sensory stimulation methods bring different viewing experiences to audiences. The same news story has far greater impact when presented through video than through text alone. As technology develops, video news also shows certain limitations: audiences can only passively follow the camera's perspective and cannot make independent choices regarding preferences or viewing angles. Using virtual reality technology allows news images to change according to audience perspective, enabling audiences to freely switch viewing angles for a better viewing experience [18-19]. For example, CCTV' s VR channel launched the program "Live: Underwater Archaeology in Beibu Gulf · Tracing Maritime Silk Road," which used VR technology for recording. Audiences could adjust camera angles using mice, keyboards, or gestures to gain stronger immersion.

4.4 Using AI Writing Robots to Enhance News Production Efficiency

AI robot writing refers to inputting news writing algorithms into fixed programs that can automatically capture news data from the internet and then write initial drafts in news language. In today' s information explosion, there is increasingly more news data and events online. Relying solely on limited collection and editing personnel makes it difficult to accurately retrieve the most newsworthy clues from massive information, and manual news collection and creation also face efficiency issues. Using AI writing robots can quickly screen hot news clues in specific fields, automatically write articles, and automatically match them with images. News creators only need to re-edit and post-produce news drafts, greatly increasing news output quantity [20].

AI writing robots are mainly applied in the following stages: First, direct use in writing news initial drafts, where robots automatically retrieve hot topics within a certain period, organize language to write news drafts, which are then polished by news production personnel. Second, automatic delivery of personalized news. When audiences visit news websites or apps, the system automatically statistics audience preferences and then automatically delivers news content that audiences like. Third, AI television anchors, which use AI technology to synthesize "avatars" with capabilities similar to real television anchors. This not only greatly improves news broadcasting accuracy and efficiency but also significantly reduces the workload of television anchors [21].

In summary, in the media convergence environment, news program production methods have undergone earth-shaking changes. Relying on converged media platforms for material acquisition, information editing, and news release has become possible. News workers should actively transform their thinking, accelerate the digitalization, informatization, and networking of news production, actively adapt to current population information acquisition habits, continuously improve news program production quality, and occupy a place in the overall media convergence landscape.

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