

Multimedia Technology in Broadcast News: Postprint

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Abstract

With the advancement of Internet and information technology, the application of multimedia technology in broadcast journalism has become increasingly widespread, making substantial contributions to the development of radio and television programs. This paper examines the application of multimedia technology in broadcast journalism, first elaborating on the necessity of multimedia technology for broadcast journalism; second, detailing the specific applications of multimedia technology in broadcast journalism, which mainly include computer technology, very large scale integration (VLSI) circuits, and storage technology; and finally, discussing the potential development directions of multimedia technology in broadcast journalism, which mainly encompass more flexible and versatile system configurations and transformations to the traditional production workflows and operational modes of the broadcast journalism industry.

Full Text

Preamble

Abstract: With the development of internet and information technology, multimedia technology is increasingly applied in broadcast news, making significant contributions to the advancement of radio and television programs. This paper examines the application of multimedia technology in broadcast news. First, it elaborates on the necessity of multimedia technology for broadcast news. Second, it details the specific applications of multimedia technology in broadcast news, primarily including computer technology, very large scale integration (VLSI), and storage technology. Finally, it explores potential development directions for multimedia technology in broadcast news, focusing on more flexible and rich system configurations and changes to the traditional production processes and operational modes of the broadcast news industry.

Keywords: Multimedia Technology; Broadcast News; Computer Multimedia

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With the development of information technology and internet technology, China's traditional media industries, including broadcasting, have made considerable progress under the guidance of these technologies. The application of high technology in broadcasting is numerous, with multimedia technology in particular injecting new vitality into the development of China's broadcasting industry. The popularization of computer technology plays a crucial role in the development of broadcast news. Although broadcast news relies on these small devices to complete the entire process of recording and broadcasting, the application of multimedia is constantly challenging traditional media, and the advantages of applying multimedia technology to broadcast news are becoming increasingly evident. Computers are developing at an astonishing speed, providing convenience in various fields, and we have every reason to believe that multimedia technology has a revolutionary impact on broadcast news.

Signal transmission quality has become a major challenge in broadcasting television news programs. Signal interruptions cause incomplete audio playback, but the application of multimedia computer technology to broadcast news can ensure signal transmission quality, shielding signals from external environmental interference. This satisfies audience demands for high-quality broadcast news and effectively solves technical problems in the development of radio and television engineering.

The development of multimedia computer technology has brought tremendous impact to traditional broadcast news. In response, broadcast news has actively sought transformation in various aspects. Integrating multimedia technology with broadcast news facilitates audience access to information. Many loyal broadcast news listeners may miss programs due to personal circumstances, but with multimedia computer technology, they can replay past broadcast news content or even download it from the internet, thereby meeting users' growing spiritual and cultural needs.

1. The Necessity of Multimedia Technology for Broadcast News

The concept of multimedia emerged from the rapid development of computer technology. When computers were first invented, they primarily performed digital calculations. As computers evolved at an increasingly fast pace, they began

to be applied to office work and word processing. Today, computers can process audio and video materials, profoundly impacting the development of radio and television. These applications have given rise to the concept of multimedia, known as the application of computer technology in the multimedia field.

Broadcast news transmission relies on the digital processing and control capabilities of computer technology. The perfect integration of electronic computer technology with broadcast news promotes the development of broadcast news. Broadcast news holds a high market share in China's comprehensive news market and represents one of the most listened-to and longest-listened broadcast programs. However, under the development of internet information technology, innovation in broadcast news has become an inevitable choice. To keep pace with the times, broadcast news must integrate with multimedia technology.

Traditional broadcast news is converted into analog signals for transmission, making it highly susceptible to external environmental interference during signal transmission. This affects information transmission speed and creates a "poor signal" phenomenon for listeners, resulting in an unsatisfactory listening experience. With the development of internet and information technology, people are no longer passive information recipients but actively search for information of interest or necessity, placing higher demands on the timeliness of broadcast news. Modern broadcast news has shifted from reporting an event once per day to multiple reports within a single day, with more diversified reporting formats. Live on-air connections and audience interaction ensure the timeliness of broadcast news, and the pace of news updates is accelerating to meet current demands for large volumes of information. Broadcast news needs to integrate vast amounts of news information—a process with enormous workload. Computer technology can integrate the large quantities of data required for broadcast news, selecting the most valuable news for audiences and thereby increasing the importance of broadcast news in people's minds.

2.1 Computer Technology

Computer technology is one of the fastest-developing areas of high technology. Within just a few short years, computers have undergone configuration innovations that are uncommon in other technical fields. These configuration changes have improved computer operational efficiency. The application of computers in various fields is not only due to continuous improvements in their mainframe components but also because their hardware facilities are constantly expanding, such as many professional network cards. The development of computer technology does not always pursue the upgrading of mainframes and hardware facilities; system stability is also a crucial factor in whether computer technology can be reasonably applied to broadcast news.

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2.3 Storage Technology

Storage technology is also one of the important technical components driving computer technology development. Computer hard drive storage capacity has greatly improved, with a single hard drive reaching capacities of 500GB, and prices have become increasingly affordable, unlike a few years ago when they were prohibitively expensive electronic products. Content that has already aired on television news is not immediately destroyed, as it accumulates material for future broadcast news. Among all current storage media, magnetic tape remains the cheapest, with no more cost-effective storage medium available. Although we use magnetic tape less in daily life, it remains the best storage tool for accumulating broadcast news material and preserving programs. As storage technology develops, computer multimedia technology continues to drive the development of broadcast news, injecting more vitality into it.

Listeners receive broadcast news information solely through sound, a singular form. Particularly when covering major events with long continuous reports, attracting listeners without images and relying only on sound is difficult, and listeners experience fatigue. The singularity of sound and lagging production techniques make the news experience increasingly bland for audiences. With the development of computer information technology, sound effects can be enhanced and subjects can be expressed in multiple forms. “News Panorama” is a flagship program of “China National Radio.” Before its revision, each episode consisted of 20 minutes of commentary plus sound effects. As listening rates declined, the program was reformed into a longer live news program divided into several modules with expanded comprehensive news content. Broadcast news holds significant meaning for radio media and can be said to determine audience selection of radio frequencies and listening rates, making innovation in broadcast news imperative under the development of multimedia technology.

3.1 More Flexible and Rich System Configuration

Currently, the post-production editing processes and equipment used in broadcast news are relatively well-developed. However, as information technology

continues to advance, broadcast news equipment must keep pace with the times; otherwise, being eliminated by audiences is inevitable. In addition to providing excellent editing technology for broadcast news, modern multimedia technology can also provide digital special effects to meet the needs of different audience levels. Storage technology is also advancing rapidly, and with the development of information technology, computer storage technology has become the fastest and cheapest storage medium.

3.2 Changing Traditional Production Processes and Operational Modes

After decades of development, the broadcast news industry has formed complete and fixed production processes and operational modes, with increasingly professional equipment for producing broadcast news. The development of multimedia computer technology is increasingly widespread in broadcast news applications, and equipment costs are decreasing as technology advances. Before reform, broadcast news production processes lacked support from advanced technology, resulting in relatively long production cycles. Timeliness is most crucial for disseminating news events to audiences, but traditional production processes could not guarantee information timeliness.

The application of multimedia computer technology in broadcast news has fundamentally changed traditional production processes and operational modes. With more flexible and rich system configurations, the development of multimedia computer technology, very large scale integration, and storage technology have all provided better performance for computers. The integrated development of broadcast news and multimedia technology is an important force in promoting the development of broadcast news.

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

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