

Balancing Information System Security Protection and Convenient Access in the Media Convergence Era: A Case Study of Beijing Daily Press (Postprint)

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Abstract

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Full Text

How to Balance Information System Security Protection and Convenient Access in the Era of Media Convergence—A Case Study of Beijing Daily

Reporter: Chen Xuguan

The internet is a double-edged sword. While it brings numerous conveniences to our lives, incidents such as website attacks, data breaches, malware, and program tampering occur frequently. As the internet has evolved into essential infrastructure for human society, cyberspace has become the nation's fifth domain after land, sea, air, and space, making cybersecurity protection particularly critical. Yang Zhen, Executive Vice Chairman and Secretary-General of the China News Technology Federation, points out that information security has risen to a national strategic level, with increasingly severe cybersecurity challenges across all industries, including the media sector. The news media is a highly time-sensitive industry whose operations inherently demand convenient access, and mobile work has become the norm in the internet environment.

These factors have increased the difficulty and complexity of security management for technical departments, presenting new challenges and tests for every technology manager on how to leverage technological and application innovation to drive business model innovation.

In 2014, President Xi Jinping emphasized at the first meeting of the Central Leading Group for Cybersecurity and Informatization that “without cybersecurity, there is no national security; without informatization, there is no modernization.” This important judgment elevated cybersecurity to the level of national security, providing direction for establishing China’s cybersecurity system and fostering correct cybersecurity perspectives. As a crucial public opinion front for the Party and the state, news media organizations face the pressing question of how to coordinate development with security. How can they achieve both security and convenience in information protection? This is an urgent problem that every media technology department must solve.

Earlier this year, the China News Technology Federation (hereinafter referred to as “the Federation”) organized a national launch meeting on guidelines for cybersecurity classification protection in newspaper organizations, offering assistance and recommendations on how to classify and protect newspaper information systems. To further advance cybersecurity development in the media industry, on October 23, 2019, the Federation convened a symposium on “Information System Security Protection and Convenient Access in the Media Industry,” inviting technical experts, cybersecurity specialists, and enterprise representatives from Beijing Daily, PLA Daily, China Youth Daily, Science and Technology Daily, and other newspaper media to explore from multiple dimensions how to facilitate convenient user access while strengthening cybersecurity protection and control, thereby promoting the development and innovation of converged media businesses.

Beijing Daily has taken the industry lead in adopting WebVPN, an unprecedented access control method. After more than a year of use, the organization has developed innovative applications that balance security with convenience. Li Yankui, Director of the Technology Department at Beijing Daily, explains that in advancing media convergence, Beijing Daily has successively completed supply-side structural reforms in its institutional mechanisms, organizational restructuring, and editorial department integration. Faced with new editorial business requirements, the technology department needed to support editorial work and establish a technical support and guarantee system for media convergence. Beijing Daily has thus established the “126 Model”: one platform, two databases, and six systems. Specifically, this comprises one physical platform—the all-media chief editor’s office; two databases—content and user databases; and six systems—editing, publishing, performance evaluation, dissemination index, multi-format advertising publishing, and command systems.

To meet editorial business requirements, Beijing Daily began using VPN equipment in 2004 to access publishing business systems from outside the organization. The organization has used various VPN products, including L2TP, IPSec,

and SSL VPN. However, none proved ideal in terms of convenience or security, suffering from slow speeds, required plug-in installations, high account theft risks, and cumbersome verification—issues that failed to meet editorial business needs. According to reports, Beijing Daily began trialing WebVPN equipment in 2017, testing various functions on a small scale. The trials primarily covered WEB application businesses, including composite editing and publishing systems, remote desktop services, newspaper editing systems, and equipment management.

Testing revealed that WebVPN solves the dual challenge of ensuring security while maintaining convenience. First, it offers convenient usage, requiring no installation and allowing direct browser-based access with excellent compatibility. Second, it improves efficiency. The WebVPN device converts all services to web-based access, particularly enhancing the efficiency of previously C/S architecture business systems and enabling previously impossible work scenarios. For instance, with Beijing Daily's newspaper editing system, WebVPN allows users to access their office computers directly through browser windows via a dedicated terminal device using remote desktop or VNC. Thanks to compression technology, not all viewed content needs to be transmitted over the network to the local machine, significantly reducing bandwidth requirements and improving access efficiency. Simultaneously, it ensures security. WebVPN offers multiple authentication methods, including basic local authentication, enterprise WeChat authentication, single sign-on, domain user authentication, and radius authentication. These can be used independently or in combination for two-factor authentication to ensure secure business system access.

After more than a year of exploration, VPN-based remote access has become essential for Beijing Daily's new media platforms. Lu Bo, System Supervisor of Beijing Daily's Technology Department, notes that WebVPN has addressed numerous specific organizational needs.

First, it significantly improves efficiency in converged media editing systems. Previously, manuscripts were transmitted back to the organization via email or WeChat, then copied into the editing system by duty personnel—a low-efficiency process with delayed information handling. WebVPN enables direct login to converged media editing systems anytime, anywhere, allowing operations based on individual permissions. Time-sensitive manuscripts can be directly published to new media channels such as WeChat, Weibo, clients, and websites, simplifying journalists' operations and improving publishing efficiency.

Second, it enhances internal information transmission efficiency. The organization's internal website, where notices and announcements are posted, previously required wired connections within the building, creating significant inconvenience for departments located off-site. WebVPN enables mobile-based user authentication, allowing external department users to access these resources.

Third, it addresses special business systems with extremely high security requirements. These systems require not only user password login but also encrypted

key verification using Ukey certificates. Remote desktop access cannot read these certificates. After ensuring physical computer security, WebVPN enables remote connections. WebVPN offers not only remote desktop but also VNC, SSH, and Telnet access. Using VNC successfully solved the need for external access to such business systems.

Fourth, it facilitates system management. WebVPN's remote connection functionality easily meets off-site management needs, and by binding sites with users, it can limit the range of devices visible to each administrator. This fulfills remote management requirements while preventing security risks from excessive permissions.

Zhi Bin, General Manager of Ruizhi Kangcheng, explains that WebVPN employs a split design with separate DMZ and intranet deployments. Its basic architecture uses two hardware devices—one before the intranet server and another in the firewall's DMZ zone. The key difference from traditional VPNs lies in its split architecture and reflective connection, which ensures greater system security while satisfying convenient access needs.

Zhang Hui, Professor and Doctoral Supervisor at Beihang University's School of Computer Science and Deputy Director of the State Key Laboratory of Software Development Environment, emphasizes that security is the prerequisite for open sharing. VPN is not a new technology as a flexible and convenient protection method, but traditional access methods were cumbersome. WebVPN's zero-configuration, encrypted, no-system-modification features meet current business needs while ensuring security.

Media technology bears responsibility for media security. In recent years, the Party Central Committee has attached great importance to cybersecurity issues. This September, President Xi gave important instructions during the National Cybersecurity Awareness Week, emphasizing the need to maintain both security and controllability alongside open innovation to enhance the public's sense of gain, security, and happiness in cyberspace. The Federation specially organized this event to provide a learning and exchange platform for media technology workers and address industry pain points, remaining true to its original aspiration of "serving members" and its mission of "promoting the development of China's news and information industry."

About This Journal

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Progress,” it is committed to independent judgment and in-depth analysis of contemporary Chinese media technology development issues, with focused attention on innovative achievements and applications, and active promotion of industry-academia exchanges. It serves to cultivate outstanding media professionals and application talents at all levels, and supports reform and development in the media industry.

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