

Exploration and Application Research on New Exhibition Models in the Digital Era

Guanqun Lin, Yanyan He

Wenzhou Polytechnic, Wenzhou, Zhejiang, China

Abstract: The utilization of digital technology has emerged as a fundamental aspect in the advancement of exhibitions. Through the incorporation of virtual reality, augmented reality, interactive devices, and multimedia displays, technology is harnessed to generate captivating and engaging experiences for visitors across various dimensions. The proficient integration of digital technologies within exhibitions has the potential to transcend the conventional limitations of temporal and spatial constraints associated with traditional physical exhibition models. This, in turn, leads to significant reductions in exhibition costs while concurrently offering novel exhibition and consumer experiences to patrons. The establishment of virtual reality consumer scenarios may serve as an extension of venue operations, thereby fostering the emergence of diverse business models for venues and revitalizing the scenes and value inherent in traditional exhibitions.

Keywords: Digitization, Exhibition, Scene reshaping.

1. Introduction

The development of technology and the challenges posed by the pandemic have accelerated the growth of digital exhibitions in China. The mature application of digital technologies can greatly reduce the costs of organizing and participating in exhibitions. At the same time, by embracing the fragmented exhibition viewing modes and widespread coverage enabled by digital technologies, the traditional physical constraints of space, distance, and time can be completely overcome.

With the further development of new technologies such as augmented reality, blockchain, cloud computing, and digital twins, the concept of a virtual exhibition "metaverse" may gradually become a reality. The emergence of the metaverse will propel digital exhibitions into a new stage, expanding the spatial and formal possibilities of digital displays, and bringing more diverse and comprehensive opportunities for brand showcasing and customer experiences.

2. The Impact of Digital Technologies on Exhibition Models

On February 7, 2020, NetExpo MAX responded to the pandemic by becoming the world's first online digital exhibition platform. The first overseas digital online exhibition, the China-Latin America (Mexico) International Trade Digital Exhibition, successfully took place on April 14, 2020, organized by Mio Expo, marking the official birth of a global digital online exhibition.

As the economy develops and people's living standards improve, the demand for exhibitions has evolved. Audiences are no longer satisfied with simple displays and promotions; they seek more interactivity and experiences, and they value personalized and diverse themes and content in exhibitions.

The rapid development of modern technology, especially the application of digital technologies such as mobile internet, big data, artificial intelligence, and virtual reality, has had a tremendous impact on traditional exhibition formats. Traditional exhibition forms are struggling to meet the demands of audiences, and the exhibition industry is

undergoing a period of rapid technological innovation and digital transformation.

Digital technologies have profoundly influenced traditional physical exhibition models. They have given rise to virtual exhibitions and online showcases. Exhibitors and visitors can participate in exhibition activities through virtual reality (VR) and augmented reality (AR) technologies, as well as online exhibition platforms, enabling broader participation, reducing time and geographical constraints, and lowering exhibition costs, benefiting both exhibitors and visitors.

Online showcases and live streaming eliminate geographical limitations, allowing exhibitors to reach a global audience. Exhibitors can convey product and brand information to audiences worldwide online, expanding their markets and increasing brand influence.

The development of digital technologies also provides audiences with more personalized and customized exhibition experiences. Audiences can customize their exhibition itineraries, receive recommendations for exhibits and activities based on their interests through digital guide systems, personal profiles, and preference settings, and enjoy personalized interactive experiences.

Data collection and analysis become more convenient and accurate in this context. By analyzing data from exhibitors and visitors, exhibition organizers can optimize the efficiency of exhibitions, provide exhibitors with information about audience behavior and market trends, and make more intelligent decisions.

Audiences can interact with exhibits through touch screens, interactive displays, virtual reality devices, and engage in interactive games, competitions, and experiences, as well as have real-time communication with exhibitors. This enhances audience engagement and satisfaction, providing more opportunities for interaction and participation.

The marketing methods of exhibitions have also undergone a significant transformation. Exhibitors can leverage social media platforms and online promotional tools to expand the influence and awareness of exhibitions through content marketing, interactive features, and social interactions. Audiences can share and interact with exhibition information through social media, increasing the exposure of exhibitions.

3. Development Directions of Digital Exhibitions

3.1. Integration of Digital Exhibitions with O2O2O Model for Scene Reshaping and Value Reinvention

In the O2O2O model, online and offline exhibition experiences are seamlessly integrated, creating a continuous exhibition journey for both exhibitors and visitors. Online exhibitions serve as a platform for pre-show promotion and engagement, allowing exhibitors to showcase their products and services to a global audience. Through interactive virtual booths, exhibitors can provide detailed information, product demonstrations, and even live chats with potential customers, generating leads and driving business opportunities.

Once the online exhibition phase is complete, the O2O2O model facilitates the transition to offline exhibitions. Exhibitors can leverage the connections and leads established during the online phase to plan and execute in-person exhibitions and events. The offline exhibitions provide an opportunity for face-to-face interactions, hands-on product experiences, and networking, which are essential for building trust and fostering long-term business relationships.

After the offline exhibition concludes, the O2O2O model extends the exhibition's impact through post-exhibition online promotion. Exhibitors can share highlights, product updates, and success stories on their digital platforms, keeping the momentum and engagement alive even after the physical event ends. This continuous online presence helps exhibitors maintain visibility and strengthen their brand image, attracting potential customers who may have missed the offline exhibition.

Furthermore, the O2O2O model enhances the overall visitor experience by providing convenience and flexibility. Visitors can explore exhibitors' offerings and engage with them at their own pace and convenience during the online exhibition phase. They can access the virtual exhibition halls and interact with exhibitors from anywhere, eliminating the need for travel expenses and time constraints. This accessibility encourages a broader audience to participate and increases the diversity of exhibitors and visitors.

Incorporating digital technologies into the O2O2O model opens up new possibilities for interactive and immersive experiences. For instance, augmented reality (AR) can overlay digital information and interactive elements onto physical exhibits, enriching visitors' understanding and engagement. Virtual reality (VR) can transport visitors to virtual environments, allowing them to explore and experience exhibits in a completely immersive way. These technologies create memorable and engaging experiences that go beyond what traditional offline exhibitions can offer.

Moreover, the O2O2O model enables exhibition companies to gather valuable data and insights throughout the entire exhibition journey. By tracking visitor behavior, engagement patterns, and preferences, exhibition organizers can refine their marketing strategies, tailor their offerings, and deliver personalized experiences. This data-driven approach helps exhibitors optimize their ROI and make informed decisions for future exhibitions.

As the O2O2O model continues to evolve, it is essential for exhibition companies to embrace innovation and adapt to changing trends. This includes leveraging emerging technologies such as artificial intelligence (AI) and data

analytics to enhance personalization and automation in the exhibition process. AI-powered chatbots can provide instant customer support and assistance, while data analytics can uncover hidden patterns and trends, enabling exhibitors to make data-driven decisions and tailor their offerings to specific customer segments.

In conclusion, the integration of digital exhibitions with the O2O2O model brings significant advantages to exhibitors and visitors alike. By transcending geographical boundaries, providing diverse exhibition formats, and leveraging digital technologies, the O2O2O model expands business opportunities, enhances visitor experiences, and drives the overall success of the exhibition industry in the digital era.

3.2. Popularity of Online Media Increases the Social Aspect of Digital Exhibitions

Various methods such as mobile applications, social media, and live streaming technologies can provide a complete digital exhibition experience, enhancing the social aspect of digital exhibitions and increasing user engagement and brand awareness. By constructing an online and offline traffic matrix, facilitating traffic monetization, and enabling synchronized interactive experiences, exhibition companies can achieve business transformation and revenue growth.

Before the exhibition begins, creating a dedicated social media page, such as a Facebook page or Weibo account, can be useful for showcasing exhibition information, including exhibits, dates, and locations. Relevant exhibition activities can also be announced on these platforms.

Creating a unique hashtag allows visitors to share their exhibition experiences on social media platforms. By using the hashtag, visitors can easily share their photos and videos on platforms like Instagram or Twitter, engaging with other attendees and sharing their thoughts and perspectives.

Organizing social media activities can attract more visitors to participate in the exhibition. For example, organizing a contest for the best photo or video during the exhibition and rewarding the most popular participants or sharers.

During the exhibition, using live streaming features on social media platforms can broadcast live activities and performances worldwide. This can attract more attention to the exhibition and encourage greater participation.

By incorporating the use of social media into exhibitions, the level of engagement and interactivity can be increased, attracting more people to participate and expanding the influence of the exhibition.

3.3. Utilizing New Technologies for Virtual Exhibition Data

The digital transformation of exhibitions is a prevailing trend. Through virtual reality technology and online platforms, physical exhibitions can be transformed into virtual exhibitions. This means that visitors can explore exhibitions, browse exhibits, and engage in collaborations online.

AR and VR technologies can merge the virtual world of visitors with the actual exhibition, providing richer and more realistic experiences. For example, using AR technology within the exhibition, visitors can scan QR codes on exhibits or use smartphone applications to access more information and content. Leveraging virtual reality (VR) and augmented reality (AR) technologies, virtual exhibitions can be created, enabling exhibitors and attendees to participate in exhibitions without physical booths. Exhibitors can showcase products and provide demonstrations and interactive experiences

through VR/AR, while attendees can browse virtual exhibitions and interact with exhibits using headsets or smartphone applications.

Digital means also greatly assist in exhibition management. By digitizing exhibitor, exhibit, and attendee information, the efficiency and informatization of exhibition management are enhanced. Exhibition organizers can utilize this data to track attendee engagement, identify trends, and measure exhibitors' return on investment. This not only helps organizers better plan and arrange exhibitions but also allows exhibitors to accurately target customers and promote their products.

Furthermore, the application of artificial intelligence (AI) can enhance the effectiveness and value of exhibitions. Through data analysis and mining of visitor information, exhibition organizers can understand the needs and preferences of attendees, providing exhibitors with more targeted services and promotions. This personalized service and promotion not only meet the needs of attendees but also improve interaction and communication between exhibitors and visitors, thereby increasing engagement and satisfaction.

3.4. Creating Future Digital Exhibition Venues

By actively harnessing the power of information technologies such as big data, cloud computing, artificial intelligence, and 5G, exhibition venues can undergo a digital transformation, becoming intelligent facilities that offer advanced services and experiences. Through the deep integration of AI, AR/VR, and cloud-based technologies, virtual halls can be created, providing immersive remote services and enabling simultaneous online and offline exhibition activities. This integration gives rise to smart exhibition services that enhance engagement and convenience for both exhibitors and visitors.

Furthermore, the use of a dedicated mobile application for digital VR venues can greatly enhance user experiences. This application not only serves as a comprehensive and convenient platform for accessing exhibition information but also collects user behavior data for analysis. By leveraging this data, organizers can gain insights into user preferences and optimize the exhibition experience accordingly, ensuring that visitors have a personalized and engaging journey throughout the event.

Another innovative approach is the utilization of 3D reconstruction technology to create digital twin-linked exhibition venues. This revitalizes outdated facilities by integrating AI technologies such as AR and MR, resulting in the establishment of intelligent exhibition centers that bridge the virtual and real worlds. This combination offers a completely new digital and cloud-based intelligent service and experience that surpasses what traditional exhibition methods can provide.

To support these advancements, a robust technological infrastructure is crucial. By relying on a big data platform and leveraging technologies such as 5G, F5G full-optical network 2.0, Wi-Fi, and the Internet of Things, previously independent intelligent systems within the exhibition building can be seamlessly integrated into a unified digital smart building platform. This integration enables digitization and enhancement across six major aspects: smart epidemic prevention, smart security, smart transportation, smart operations and maintenance, AR smart services, and smart logistics.

In terms of smart epidemic prevention, technologies such as thermal imaging cameras, AI-driven temperature screening,

and contactless access control systems can be implemented to ensure the health and safety of exhibitors and visitors. By leveraging real-time data analysis and predictive modeling, potential risks can be identified early on, enabling timely preventive measures.

Smart security measures can be strengthened through the use of AI-powered surveillance systems that can detect and respond to potential security threats. Video analytics and facial recognition technologies can enhance security monitoring and provide real-time alerts in case of any suspicious activities.

In terms of smart transportation, digital solutions can optimize traffic flow and parking management within the exhibition venue. Real-time information on parking availability, shuttle bus schedules, and public transportation options can be provided to enhance convenience for visitors.

Smart operations and maintenance involve leveraging IoT devices and sensors to monitor the condition of exhibition facilities, enabling predictive maintenance and reducing downtime. Additionally, energy management systems can optimize resource utilization and contribute to sustainability efforts.

AR smart services can enhance the visitor experience by providing augmented information and interactive content related to exhibits. By using AR technology, visitors can access additional details, multimedia content, and interactive experiences that enrich their understanding and engagement.

Lastly, smart logistics solutions can streamline the transportation and distribution of exhibition materials, optimizing efficiency and reducing costs. By leveraging technologies such as real-time tracking, inventory management systems, and autonomous vehicles, exhibitors can ensure that their materials are delivered accurately and promptly.

In conclusion, by embracing information technologies and integrating them into the exhibition industry, digital venues can be transformed into intelligent facilities that offer enhanced services and experiences. The utilization of AI, AR/VR, big data, and other cutting-edge technologies enables the creation of virtual halls, digital twin-linked venues, and unified smart building platforms. This digital transformation revolutionizes various aspects of exhibitions, including epidemic prevention, security, transportation, operations, services, and logistics. With these advancements, exhibitors and visitors can enjoy a seamless and immersive exhibition experience that combines the physical and digital realms.

3.5. Shaping New Scenarios for Exhibition Consumption, Creating Diversified Business Models, Expanding Revenue Channels, and Enhancing Risk Resistance

Creating spaces for industry exchanges is the core function of venues, especially when simple exhibitions and displays no longer meet the deeper communication needs. Many venues are incorporating functional spaces such as coffee bars, coworking spaces, libraries, lounges, and small meeting rooms from the initial construction or development phase, aiming to create a more comfortable and convenient communication atmosphere for clients. In addition, interactive agendas with unique features have become a prominent trend in exhibition activities, including small cocktail parties, afternoon tea events, late-night cafeterias, and themed parties. These events can be implemented under controlled attendance numbers, facilitating communication

during exhibitions even in the context of the pandemic.

Establishing spaces for lifestyle consumption is an extended aspect of venue space operations. Venues are not only participants in industry development but also, to some extent, creators of urban life. Hangzhou International Expo Center was once recognized as a "leading enterprise in Hangzhou's new consumption," which reflects the convergence of venue operations and new consumption. For example, the COEX CENTER in Seoul integrates an international exhibition center with high-end hotels, an aquarium, theaters, cinemas, duty-free shops, and even an urban airport, truly integrating the exhibition venue into city life. On the other hand, grasping the "flow code" and focusing on new consumer trends, various consumer hotspots such as pop-up stores, special exhibitions, and internet-famous shops can serve as clues for venue space operations. By providing rich cultural displays and scene services, new ways of urban life can be created, not limited to traditional exhibitions, making the value of the venue more diversified.

Many exhibition halls and convention centers around the world have adopted diversified business models to meet different types of event needs. For example, the Shanghai New International Expo Center, located in Shanghai's Pudong New Area, is one of Asia's largest exhibition halls. In addition to exhibitions, the center offers various services such as dining, shopping, and entertainment, attracting numerous tourists and business professionals. The Tokyo International Exhibition Center (Tokyo Big Sight) in Japan, one of Asia's largest convention centers, has over 20 conference rooms and various types of exhibition halls. It also provides services including dining, shopping, and accommodation, allowing visitors to have a complete travel experience. The Koelnmesse in Cologne, Germany, as one of Europe's largest exhibition centers, offers not only various exhibition halls but also many other services such as entertainment, shopping, dining, and accommodation. Moreover, it hosts many internationally renowned exhibitions and events, attracting exhibitors and visitors from around the world. These venues have adopted diversified business models, attracting a broader audience and customer base through a range of services and activities, providing strong support for economic development and city image.

3.6. Construction of Digital Exhibition Information Platforms

The digital transformation will drive the construction of digital exhibition information platforms, enabling exhibition companies to manage exhibition information more conveniently and provide convenient exhibition services. A digital exhibition information platform can integrate exhibition information, exhibitor information, visitor information, and venue information to achieve comprehensive information sharing and management. Additionally, the platform can facilitate the digital storage and sharing of exhibition resources, improve resource utilization, reduce exhibition costs, and promote the development of the exhibition industry.

Moreover, the construction of a digital exhibition information platform can help organizers organize high-quality customer demand data, which is the foundation for precision marketing. Organizers can collect online and offline visitor data, including the number of visits, on-site behavior patterns, duration of stay, and post-exhibition satisfaction feedback through digital means. Analyzing visitor behavior

patterns is valuable for understanding visitor demands and developing precise marketing strategies, similar to analyzing browsing patterns of e-commerce members on websites.

Based on this data, organizers can establish a membership system based on an integrated marketing system, providing personalized services and enhancing marketing capabilities. Through precise marketing strategies and personalized services, organizers can better meet the needs of visitors, improve the exhibition experience, and increase visitor participation and satisfaction.

4. Enhance Brand Image and Market Influence of Exhibition Using Digital Technology

Moreover, digital technology offers exhibitors the opportunity to enhance their brand image and market influence through continuous interaction with the audience. Exhibitors can leverage email marketing campaigns to provide updates on new products, upcoming events, and special offers, keeping the audience engaged and informed. Social media platforms can be utilized to create online communities and foster conversations around the brand, encouraging attendees to share their experiences and opinions.

In addition to online interactions, digital technology enables exhibitors to extend the exhibition experience beyond the physical boundaries of a traditional trade show. For instance, exhibitors can organize webinars, live streams, or virtual product demonstrations, allowing attendees from anywhere in the world to participate and engage in real-time. These virtual experiences provide a convenient and accessible way for attendees to explore products and services, ask questions, and make informed decisions, regardless of their physical location.

Furthermore, digital technology empowers exhibitors to gather valuable insights through data analytics. By tracking and analyzing user behavior, such as website traffic, social media engagement, and content consumption patterns, exhibitors can gain a deeper understanding of their target audience. This information can help exhibitors refine their marketing strategies, tailor their messaging, and identify new opportunities for growth and expansion.

However, along with the opportunities, there are also challenges associated with the development of digital exhibitions. One major challenge is the need for stable and high-speed internet connectivity and advanced technical equipment. In some regions or exhibition venues, inadequate network coverage, insufficient bandwidth, or outdated equipment may hinder the smooth execution of digital exhibitions. Therefore, ongoing efforts should be made to improve and upgrade the network infrastructure, ensuring stable connections and optimal user experiences.

Moreover, ensuring data security and privacy protection is crucial in the digital exhibition landscape. With the collection and storage of large amounts of personal information from exhibitors and attendees, appropriate security measures such as data encryption, identity verification, and access control must be implemented to prevent data breaches and unauthorized use.

Additionally, maintaining a high level of audience engagement and interactivity is vital for the success of digital exhibitions. Compared to physical exhibitions, digital events may face challenges in capturing and sustaining audience attention and participation. Exhibitors must continuously

innovate and offer compelling interactive content and technologies to keep attendees engaged throughout the virtual experience.

Lastly, while digital exhibitions provide opportunities for online communication and interaction, they may lack the face-to-face networking and relationship-building experiences of physical trade shows. In-person exhibitions allow exhibitors and attendees to establish genuine personal connections, engage in in-depth business negotiations, and foster collaborations. Digital exhibitions need to find innovative ways to compensate for this absence, such as providing online networking tools and social interactive activities to facilitate business cooperation and the establishment of interpersonal networks.

As the digital exhibition industry continues to evolve, an increasing number of digital exhibition platforms and solutions are emerging in the market. This intensifies the competition and may lead to market saturation. Exhibitors and attendees face the challenge of choosing the most suitable digital exhibition platforms and activities, requiring time and effort to evaluate and select the optimal options.

To fully realize the potential of digital technology in the exhibition industry, it is essential to address the existing limitations and embrace a comprehensive approach. This includes cultivating a wider application of digital media technology in exhibition space design, promoting integrated strategies that leverage design to enhance exhibition brand construction, and fostering interdisciplinary collaborations to tap into the full potential of digital experiences in exhibition design. Additionally, attention should be given to addressing the practical needs and technical costs of exhibitors and attendees, strengthening data security and personal privacy protection, and incorporating sustainable practices into digital exhibition design. With these measures in place, the level and competitiveness of digital exhibitions can be elevated, leading to a more vibrant and impactful industry.

5. Opportunities and Challenges of Digital Exhibitions in China

Digital new media technology offers advantages in delivering information quickly, conveniently, and accurately. Additionally, the application of digital technology enriches the forms and means of communication. Through digital exhibitions, holographic projections, VR technology, and other means that combine visual, auditory, tactile, and even olfactory elements, exhibition venues can present their image to the audience, creating a comprehensive experiential atmosphere and effectively conveying the concepts and essence of the exhibition brand, allowing the audience to truly feel the charm of exhibitions. Such digital displays not only make exhibition spaces more appealing but also bring more risks and challenges to exhibition communication.

Digital exhibitions rely on stable and high-speed internet connections as well as advanced technological equipment. In some regions or exhibition venues, there may be issues with incomplete network coverage, insufficient bandwidth, or outdated equipment, which could hinder the smooth operation of digital exhibitions. Therefore, continuous improvement and upgrading of network infrastructure are necessary to ensure stable connections and a good user experience.

Digital exhibitions involve a large amount of data transmission and storage, including personal information of exhibitors and attendees. Ensuring data security and privacy

protection is a crucial challenge. Appropriate security measures such as data encryption, identity verification, and access control need to be implemented to prevent data breaches and unauthorized use.

While digital exhibitions provide opportunities for online communication and interaction, they lack the face-to-face communication and networking experience of physical exhibitions. In physical exhibitions, exhibitors and attendees can establish real interpersonal relationships and engage in in-depth business negotiations and collaborations. Digital exhibitions need to compensate for this by providing innovative ways such as online negotiation tools and social interactive activities to facilitate business cooperation and the establishment of interpersonal networks.

With the development of digital exhibitions, there is an emergence of numerous digital exhibition platforms and solutions in the market. This increases market competition and may lead to market saturation. Exhibitors and attendees face the dilemma of choice and need to invest time and effort in evaluating and selecting suitable digital exhibition platforms and activities.

Despite China's potential in digital technology, the application of digital exhibitions is not yet widespread and deep enough, and the level of application needs to be improved. Traditional concepts hinder the development of new exhibition models. Digital exhibitions require collaboration among professionals, but the integration is not high enough. Consideration should be given to the actual needs of exhibitors and attendees, as well as the technological costs, strengthening data security and personal privacy protection. Sustainable practices should be incorporated into the design. Strengthening measures and improvements are necessary to enhance the level and competitiveness of digital exhibitions.

6. Conclusion

In conclusion, the exploration and application research on new exhibition models in the digital era have brought significant advancements and opportunities to the exhibition industry. Digital technology has revolutionized the way exhibitors and visitors interact, offering enhanced brand exposure, immersive experiences, and global reach.

Overall, the exploration and application of new exhibition models in the digital era have transformed the exhibition industry, offering innovative opportunities for brand promotion, global engagement, and personalized experiences. As technology continues to advance, the potential for further growth and development in the digital exhibition landscape is vast, paving the way for an exciting future in the exhibition industry.

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