

Exploration on the Development of Display Space Culture in the Digital Age of “Adaptation to Living”

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Abstract: In the digital age, the cultural construction and development of display space must also conform to the trend of the times. The development of digital technology is an important means of exhibition space design and construction. How to make good use of technology to inject more vitality into space culture is an urgent problem. This article mainly take the demonstration space culture as the breakthrough point, proposed “conforms to lives” the viewpoint. From the point of view of displaying space culture, this paper analyzes the development direction and current situation of displaying space culture under the background of the current era; from the perspective of “adapting to”, puts forward that it is necessary to have the sense of the times and foresight to explore and innovate the displaying space culture in the digital era; and seeks the development track of displaying space culture from the history, and at the same time explains the development direction of displaying space culture in the digital era in combination with the development trend and demand of the current era. Then it analyzes the innovative form of displaying space culture under the background of the digital age - the future mode of displaying space under the meta-universe view.

1. Introduction

On February 27, 2023, the Central Committee of the Communist Party of China and the State Council issued the “Overall Plan for the Construction of Digital China”, which stated that building Digital China is an important engine for promoting China's modernization in the digital age and a powerful support for building new national competitive advantages. Accelerating the construction of Digital China is of great significance and far-reaching impact for the comprehensive construction of a socialist modern country and the comprehensive promotion of the great rejuvenation of the Chinese nation. [Central People's Government of the People's Republic of China, “Central Committee of the Communist Party of China and the State Council Issue the Overall Plan for the Construction of Digital China”].

With the rapid development of digital technology in China, various industries are actively promoting digital transformation. The exhibition industry is no exception. The construction of digital display spaces is an important aspect of the digital transformation of traditional exhibition methods. In recent years, with the integration of digital technology with cultural heritage protection and cultural and creative industries, the phrase “adapt and thrive” has been used to describe the

current trend of digital display space construction. The current trend of digital display space construction is becoming increasingly diversified and fashionable, but it also poses new requirements and challenges for spatial design. In the future, the development of exhibition and display culture should follow the trend of the times and social development, and use new technologies such as digital technology to design more creative and rich digital display spaces, in order to attract more audiences and achieve greater dissemination and influence[1-2].

2. The Connotation of the Development of Display Space Culture

Display space culture refers to the combination of art and science manifested in exhibition halls and exhibition centers, including artistic creation and scientific research. Science refers to the use of scientific and technological methods to guide artistic creation. In a specific space, through exhibitions, conferences, and other means, the content to be displayed is presented in a concentrated manner. By introducing and explaining the exhibits, visitors are provided with aesthetic experience, cultural education, and spiritual enjoyment. Its forms can be physical displays, as well as electronic and multimedia technologies.

3. The Design Concept of “Adapt and Thrive” for Display Spaces in the Digital Age

The design concept of “adapt and thrive” requires us to adapt to the development needs of the times and the market, with “adaptation” as the foundation and “thrive” as the ultimate goal in the construction of display space culture. Currently, digital technology and information technology have become one of the most important resources in today's society, closely related to our daily lives, bringing us a lot of convenience. Digital technology uses computer programs to process information and data, making it intuitive and visual. The advent of digital technology has brought about earth-shaking changes to the world, greatly changing the way humans live and work. Nowadays, people's demand for information is becoming more diverse, so digital technology is gradually being applied in various industries.

Therefore, display space culture needs to achieve high-tech and high-quality display effects through digital technology. The application of digital technology in display space culture can enable audiences to understand information more intuitively and vividly, enhance their experience, and strengthen their understanding and cognition of the content and expression of the exhibits themselves. It not only breaks the limitations of traditional exhibition forms, but also allows visitors to experience the charm of “digital culture” on the spot. Through digital processing methods, the spiritual core that the exhibition hall or exhibition center wants to convey can be conveyed more clearly to the participants, helping visitors to better understand the history, culture, art, and other connotations behind the exhibits, and also promoting public communication and cultural exchange[3].

4. Upgrading the Display Space Model with Digitalization as the Carrier - Digital Exhibition Hall

The arrival of the digital age has brought new opportunities for the development of display space culture. The positive role of digital technology, multimedia technology, and others in cultural construction has also provided a new direction for display space to upgrade to digitalization and led to the emergence of digital exhibition halls.

4.1 The Importance of Digital Technology Application

Compared with traditional exhibition spaces, the digital exhibition hall not only reduces operating costs and improves efficiency but also enhances the work efficiency of staff and enriches the experience of visitors. These are the advantages of digital exhibition hall construction. With the continuous development of the times and the advancement of technology, digital technology is constantly evolving and improving. The “digital +” model has become a core strategy in the development of the digital economy. In the process of social change, only by keeping pace with the times and seizing opportunities can we win the future. Therefore, accelerating the construction of digital exhibition halls is an important task for the current development of the exhibition industry.

4.2 Case Presentation of Digital Exhibition Halls

In 2020, the author collaborated with a company to complete the construction of the Inner Mongolia Autonomous Region Discipline Inspection Commission's online digital 3D clean governance education exhibition hall. The project mainly applied 3D exhibition hall design technology, 3D modeling technology, 3D development technology, server-side development technology, HTML5 development, etc., to build an online digital party building exhibition platform. In the project, users can interact with the exhibition hall through scene roaming, 3D object interaction, video viewing, and audio commentary while in the digital exhibition hall on a mobile platform[4]. In terms of roaming settings, users can choose to automatically roam or manually roam and interact with the exhibition panels, integrated media, databases, and video players in the digital exhibition hall (See Figure 1).



Figure 1: Effect Picture of the Inner Mongolia Autonomous Region Discipline Inspection Commission's Online Digital 3d Clean Governance Education Exhibition Hall

In the follow-up planning of the digital exhibition hall, exhibition halls in various cities and counties of the Inner Mongolia Autonomous Region can be interconnected with the digital exhibition hall. Through the entrance of the digital exhibition hall, users can enter the sub-exhibition halls of various cities and counties, or quickly jump through IP positioning. Editing personnel can manage the exhibition materials by logging in to their account, and can add, delete, view, and modify exhibition materials[5]. They can also view the browsing volume of the exhibition hall, and analyze and count the browsing data through MTA big data, including the browsing volume of the exhibition hall in various cities throughout the country and the basic information of browsing users, such as gender, education level, occupation, etc (See Figure 2).

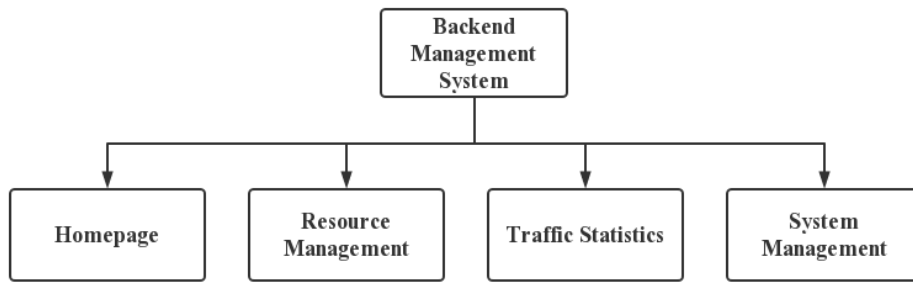


Figure 2: Data Editing Terminal

In addition, the user interface of the digital exhibition hall adopts a responsive layout design. The overall style of the interface is simple, and UI elements such as buttons, text boxes, and windows are designed with color blocks. This method can maximize the reduction of network bandwidth pressure, and the browsing method of data is mainly chart-based. The design of the data editing terminal and the management terminal is more practical and concise. Java is used as the main development language for the proposed development language and database system backend. The database uses MYSQL, and the front-end uses JS to develop related data functions and interface interactions, while the front-end 3D page is based on the Unity3D engine (See Figure 3).



Figure 3: Integrated Interface Design

Currently, the number of visits to this project has exceeded 200,000. The digital exhibition hall can be easily deployed, opened to the public without limits, and expanded without restrictions, breaking through the limitations of time and space, enabling visitors to receive clean governance education at any location and time.

As can be seen, under the guidance of digital technology, digital exhibition halls have gradually entered people's field of vision with their unique advantages. At the same time, digital exhibition halls can be upgraded from offline exhibition halls to online ones in a short time with the support of digital technology. As an important way and channel of digital cultural dissemination, digital exhibition halls have also become an important direction for the transformation and upgrading of offline exhibition halls. Digital exhibition hall culture is an inevitable product of the development of the times. Through the analysis of the current situation and trend of digital exhibition hall culture, the inherent laws and logic behind it can be explored, which has positive significance for the development of China's digital cultural industry[6-7].

5. The Future Model of Display Space in the Metaverse Perspective: Coexistence of Virtual and Real

2021 to 2022 has been referred to as the first year of the metaverse, which is a virtual world based on the internet and a parallel virtual space-time with the real world. People can engage in all activities in the virtual space that they would in the real world. Therefore, the display space has a new development trend under the metaverse perspective, with significant changes in concepts, application areas, presentation forms, and more.

5.1 The Expression of Display Space under the Metaverse Perspective

The metaverse is an infinitely open and inclusive new ecosystem where users can experience all scenes of their physical space in a complete virtual space with interactive, immersive, and independent features. Therefore, the metaverse is also called “digital twin” or “integration of virtual and real,” which is a simulation, representation, and mapping of human life in a virtual space. Under the metaverse perspective, display space exists as the subject, providing various application models and new values in information dissemination, including two development models: the “avatar” model represented by digital humans and the “mirror” model represented by holographic projection.

5.2 Display Space in the Metaverse is Digital Interactive Display

In the metaverse, virtual scenes can be rendered in real-time using 3D technology, giving users a sense of presence. People enter the metaverse through digital identities and create different digital scenes, including virtual reality (VR), augmented reality (AR), mixed reality (MR), or digital virtual images appearing in the metaverse. Therefore, display space in the metaverse is a holographic projection that can be interacted with, constructed, and content-generated. Brands can create content and set up scenes as required and achieve immersive brand experiences in the virtual digital world. Display space is not only for viewing but also as a brand's digital technology support center, providing product information, data, videos, etc., to interact with consumers in depth. People can experience products in the display space, giving products new life in the virtual digital world. At the same time, display space in the metaverse can also cooperate deeply with brands to create a new mode.

5.3 Display Space in the Metaverse can Achieve Multi-Person Collaboration Online

Display space in the metaverse is a digital virtual space that can be collaboratively created and developed online by multiple people. Multi-person collaboration in display space online requires different requirements for different users, such as identity verification and recognition of virtual items in the virtual space. As metaverse technology evolves, people will no longer need digital identities but only a real digital identity to enter display space. In this virtual digital space, people can complete tasks or communicate through their real identities.

The arrival of the metaverse era will promote the development of digital display space and further integrate real-world space into the metaverse. Digital display space can become a platform for brand, user, and other stakeholders to communicate and interact, constantly creating and enriching display content. In the future, display space can not only present exhibition content in digital form in cooperation with digital humans but also achieve interactive and fusion displays of different cultures.

6. Conclusion

As a product of the integration of technology and culture, digital exhibition halls provide strong support for achieving the goal of building a strong cultural country. As an important carrier of national culture, the exhibition space should use digital technology to optimize content display, innovate exhibition forms, and create a diversified digital exhibition system.

The emergence of the “digital + culture” model is not only a requirement of the digital age but also a growing spiritual and cultural demand of the people in the new era. Exhibition spaces should use the “digital + culture” model to create high-quality exhibition halls that meet the aesthetic and needs of the people while actively exploring digital development ideas and improving the level of digital exhibition hall construction in terms of dissemination and service.

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