Design and Communication of Digital Museum Based on Computer and Internet Technology

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Abstract. With the advent of the Internet era, the development of communication technology and virtual reality technology, and the increasing maturity of computer network technology, the Internet technology museum has gradually replaced the traditional museum and become a trend. With the rapid development of mobile terminal intelligence, the way of information transmission is no longer limited. The application of Internet technology to digital museums can change the fixed exhibition and single visiting mode, obtain different experience and interactive experience, and open up a new field for the development of digital museums.

Key words: Internet Technology, Digital Museum, Design, Communication

The fixed venue exhibition mode of museum can not meet the needs of visitors, and the exhibition form can not effectively transfer information and knowledge to the public, which makes cultural communication subject to many limitations. The Digital Museum of Internet technology can let people experience the feeling of immersive experience, add fun to visit and let visitors learn knowledge at the same time, which is a better choice.

1. The characteristics of Internet technology exhibition and the feasibility and value of Digital Museum Application

As one of the main ways to spread culture, museum integration into Internet technology is the main means to improve social services. Internet technology exhibition is mainly based on the Internet technology of exhibits and exhibition space, to build a interconnected network system, to establish a new type of exhibition mode with different exhibits, information sharing, content co construction and experience sharing among exhibitors and visitors. The foundation of Internet technology exhibition is the design of Internet technology concept, and the combination of physical exhibition and virtual exhibition should be done well[1-2]. Through some online museums, we can roughly summarize the characteristics of digital exhibitions, including the guidance of physical exhibitions on the Internet, and
supplement the deepening of different exhibition forms and interactive experiences. Internet technology exhibition adapts to the new trend of exhibition application development, creates a new platform and realizes the networking of information collection, the multimedia of information display, the real-time updating of information and the interaction of information experience. Statistics of visitors to China Museum in 2016 refer to Figure 1[3-4].

![Number chart of visitors to China museum in 2016](chart)

**Figure 1.** Statistics of visitors to China museum in 2016

Due to the emergence and popularization of smart phones, the application and influence of digital exhibitions have been greatly expanded through mobile Internet technology terminals. The public can watch the exhibition information without leaving the home through the smart phone, which breaks through the space restriction, can watch the exhibition content anytime and anywhere, upload the feeling of watching the exhibition, can also supplement the exhibition content and interesting things they see, and implement the online interaction. It is an irresistible trend to combine Museum and Internet to create Museum app. In China, many museums begin to develop digital museums to promote exhibitions, collections and other different services. With the continuous development of museum industry and the improvement of people’s cultural level, more and more digital museums of different types are being downloaded and used by people. Now there are two kinds of digital museums on the market, one is the Museum map and other tool app produced by museum enthusiasts, the other is the app specially produced by the museum entrusted by a professional company. Most of the digital museums contain the guide map, tour route and cultural relics introduction of each exhibition hall, which are displayed to the visitors in the form of video, pictures and words. For example, the application of Internet technology, 3D and virtual reality technology, can increase people’s different experience, make the digital museum more scientific, and make the combination of physical exhibition and virtual exhibition better[5].

2. Virtual reality exhibition in Digital Museum

Virtual reality technology will give people a sense of interaction, immersion and imagination. Through interaction in the virtual environment, it can produce a sense of reality in the real world, as well as its own imaginable space. When applied to the digital museum, it can not only create a 3D three-dimensional sense of space, but also experience the reality of the scene even if the visitors can not reach
the scene.

2.1. 3D picture exhibition

In the digital museum, virtual reality technology can be used. You only need to wear the VR matched with app, and long press the picture to see the 3D effect of the picture. The picture can rotate 360 degrees, so that the viewer can see every detail clearly. It is equipped with animation demonstration and sound explanation. You only need to wear a device, and you can watch the exhibits at home in a short distance. Virtual technology makes this matter simple, and it is also a collection Combined with all the audio-visual experience methods, it also adds some situations for viewing. All the experiences that can be obtained in the museum can be perfectly copied in the virtual reality world[6].

2.2. Virtual mobile context

Due to the limitation of geographical location, service time and site, the combination of new media technology and mobile terminal can not only improve the efficiency of Museum, but also bring convenience to the application of app. In order to meet the different needs of different people, the function of digital museum in China should include virtual visit, a virtual and mobile situation.

In the digital museum, users can visit dozens of national museums at home and abroad and watch the works of art, historical documents, etc. with the virtual reality head display. The digital museum should be equipped with a positioning and navigation system. 3DGIS allows users to choose their own routes in the visualized world of their mobile devices. Their physical location is represented by virtual 3D, and the virtual location is described according to the real world location. On the mobile devices, users can also search the whole place by themselves, understand their own area, and form Route map, easy to move in the virtual environment. The 3D virtual map is faster and easier to understand. Through the virtual view you see, you can experience a real sense of experience and interaction with cultural relics and exhibits in close contact. There are many kinds of collections in the museum. There is also information recommendation service in the app. According to the user's situation, location, mobile route, etc., the most suitable message will be sent to the user, making use of the interaction of the network to better realize information sharing.

Using virtual reality technology can save the most real and complete information of these works of art to the network, which can not only be used for protection, restoration and cultural exchange, but also attract more people to learn about museum culture, so that the museum collections can be spread out infinitely. Entering virtual reality and visiting museums have totally different experiences. When entering a certain historical scene, we can feel its significance, not a simple thing.

3. The development trend of Digital Museum

With the increasing demand of people, the methods of acquiring knowledge are increasing. In order to adapt to the social development, Internet technology will become the trend of Museum mobile terminal in the future. Internet technology uses virtual technology to process exhibits and information, and establishes a virtual environment in the network. Users can choose to visit according to their own needs, providing a sense of immersive experience, seeing more comprehensive information, which is conducive to enhancing knowledge, is no longer a single way of visiting, but also enables culture to play its value, enhances interest and protects exhibits. The development of internet Museum refer to Figure
2. The development of internet museum

![Figure 2. The development of internet museum](image)

Internet technology exhibition has opened a new chapter of Museum mobile terminal exhibition, changed a single way, increased human-computer interaction, and formed a multi sensory virtual experience environment. With the rapid development of economy, the development of museums should keep pace with the times. Through the processing of information by Internet technology, a huge virtual experience space is established, which can not only protect cultural relics, but also spread traditional culture. The virtual exhibition of Internet technology can make people get immersive experience and open a new way of Digital Museum exhibition.

4. Conclusion

The development of Internet technology and the popularization of smart phones have changed people’s life style. Internet technology exhibition has become the main way of viewing. Both exhibition and virtual tour are supported by digital technology. Internet technology will become a major change in the development of museums. Internet technology is a good way to protect cultural relics, and also the best way to spread culture, which can make the traditional culture pass on. Therefore, museums should seize this opportunity, make use of their own resource advantages, develop and produce more colorful apps, and improve the level of museum services for society.

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