Original Research Article

The impact of new media platforms on the digital transformation of museums

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Abstract: With the rapid development of information technology, new media platforms have gradually become an important channel for people to obtain information and engage in cultural exchanges. In this context, museums are also facing challenges and opportunities in digital transformation. This article analyzes the characteristics and advantages of new media platforms, and explores their impact on the digital transformation of museums, including improving the dissemination effect of exhibitions, enhancing audience participation, expanding educational functions, and promoting cultural inheritance and innovation. At the same time, it also pointed out the possible problems that museums may face in the process of digital transformation using new media platforms, and proposed corresponding solutions. Through in-depth research on new media platforms and digital transformation of museums, useful references have been provided for the future development of museums.

Keywords: New media platform; Museum; Digital transformation

1. Introduction

In today's digital age, the rise of new media platforms has brought profound changes to various fields. Museums, as important institutions for cultural heritage and education, are also actively exploring the path of digital transformation to adapt to the development of the times and the needs of audiences. The digitalization of museums refers to the reproduction of art works by means of plane scanning, photography, video recording, 3D scanning and other digital means, and the instantaneous transmission of digital works worldwide through the Internet. New media platforms, with their interactive, real-time, and multimedia features, provide new opportunities and challenges for the digital transformation of museums. This article aims to explore the impact of new media platforms on the digital transformation of museums, analyze their advantages and challenges, and propose corresponding development strategies.

2. Characteristics and advantages of new media platforms

New media platforms have broken the one-way communication mode of traditional media, allowing audiences to interact with museums and express their views and feelings through comments, likes, shares, and other means. This interactivity not only enhances the audience's sense of participation and experience, but also provides a channel for museums to understand audience needs. New media platforms can achieve real-time release and dissemination of information, and museums can timely release exhibition information, event previews, and other content through platforms such as Weibo and WeChat, allowing visitors to understand the dynamics of the museum at the first time. New media platforms support the display of various forms of content such as text, images, audio, and video. Museums can use these multimedia means to more vividly showcase cultural relics and exhibitions, enhancing the attractiveness of the audience. New media platforms have a global reach, and museums can promote their exhibitions and cultural resources to various parts of the world through the internet, attracting more audiences.

3. The impact of new media platforms on the digital transformation of museums

3.1. Promote the digitalization process of museums

New media technology is an important part of digital technology, and the digital construction of museums naturally relies on the application of new media technology. The content and information contained in new media platforms are very rich. When applied to the digital construction of museums, they can provide a large amount of information for museums, allowing their collections to be displayed in various forms such as text, images, audio, video, etc., thereby improving the information retrieval function of museums.

3.2. Innovative museum exhibition orm

The new media platform provides museums with a completely new form of exhibition. Through digital modeling, 3D animation, digital capture and other technologies, museums can achieve scene restoration and three-dimensional display, making exhibits more attractive and infectious. For example, the Palace Museum has launched the immersive digital voice display project "Walking into the Qingming Riverside Garden", which simulates multiple image scenes and character dialogues, allowing viewers to click on the screen according to their interests, appreciate any details of the picture, and obtain a diversified experience of viewing, listening, and touching. In addition, the Digital Dunhuang Museum also utilizes a 3D display system to allow visitors to experience more stunning Dunhuang murals in a virtual environment.

3.3. Expand the dissemination channels of museums

New media platforms have broken the limitations of traditional museums in terms of time and space, enabling the cultural resources of museums to be more widely disseminated. Through official websites, Weibo, WeChat and other new media platforms, museums can release exhibition information, collection stories, event previews and other content to attract more potential audience attention. At the same time, these platforms also provide convenient ways for viewers to book visits, exchange meetings, and other interactive activities, increasing their participation and loyalty.

3.4. Improving the quality of museum services

The new media platform has also improved the service quality of museums. By utilizing technologies such as big data and cloud computing, museums can achieve precise analysis of audience behavior and provide more personalized services for visitors. For example, Internet applications such as the Digital Palace Museum Community not only enable users to access all resources at one stop, but also enable users to deploy resources independently and build personalized Palace Museum according to their own wishes. In addition, new media platforms also provide convenient online payment, electronic tickets and other services for museums, improving the visitor experience.

3.5. Promote the dissemination of museum culture

New media platforms contribute to the widespread dissemination of museum culture. Viewers can learn about museum collections, exhibitions, and event information through new media platforms, and then enter the museum to participate in related activities. At the same time, new media platforms also provide opportunities for museums to communicate and collaborate with other cultural institutions, scholars, and the public, promoting the diversified dissemination of museum culture. The new media platform provides a vast space for cultural

innovation in museums. Museums can utilize the interactive and multimedia features of new media platforms to carry out cultural and creative activities, such as cultural and creative product development, cultural themed games, etc. The demand for local cultural development in museums and the transformation of regional cultural industries are both stimulating the development and design of cultural and creative products. At the same time, it is hoped that cultural and creative products can contribute to the local economic development.

3.6. Inspire innovation vitality in museums

The new media platform has also stimulated the innovation vitality of museums. In the new media environment, museums need to constantly explore new communication methods, exhibition forms, and service models to adapt to changes in audience needs. For example, by utilizing advanced technologies such as VR and AR, virtual exhibitions and interactive experiences can be created to provide audiences with a richer cultural experience. New media platforms also play an important role in promoting the inheritance and promotion of museum culture, meeting the needs of tourists, and supporting the development of museums. Museum stores aim to expand the functions of museums, not only increasing their revenue, but also promoting cultural innovation and development.

3.7. Enhance audience engagement

New media platforms provide audiences with various interactive experiences, such as online tours, virtual visits, and cultural relic appreciation. Viewers can share their museum visit experiences, photos, videos, and other content through new media platforms, while also participating in cultural creation activities such as essay writing and painting. This way of audience creation and sharing can not only enhance the audience's sense of participation and belonging, but also bring more publicity and promotion to the museum. Museums can conduct audience surveys and feedback activities through new media platforms to understand audience needs and opinions, providing a basis for improving exhibitions and events. At the same time, audience feedback can also promote communication and exchange between museums and audiences, enhancing audience satisfaction.

3.8. Expand educational functions

The new media platform provides convenience for museums to carry out distance education activities. Museums can collaborate with schools, communities, and other institutions through online live streaming, video conferences, and other means to release online educational resources such as lecture videos, course materials, etc., allowing audiences to learn anytime and anywhere. The provision of such online educational resources not only meets the learning needs of audiences, but also expands the educational functions of museums, allowing more people to benefit from the educational resources of museums.

4. The problems faced by new media platforms in the digital transformation of museums

4.1. Limited technical level

The application of new media platforms requires certain technical support, and some museums cannot fully leverage the advantages of new media platforms due to limited technological capabilities. For example, in the production and display of digital exhibitions, professional technicians and equipment are required, which some museums may lack.

4.2. The content quality is not high

The content quality of new media platforms directly affects the audience's experience and satisfaction. Some museums may encounter problems such as single content, dry form, and lack of creativity when using new media platforms for promotion, which cannot attract the attention of audiences. The vast amount of information on new media platforms can easily lead to audience distraction, making it difficult to focus on museum exhibitions and artifacts. Museums need to produce high-quality content to attract audience attention and retain them.

4.3. Imperfect management mechanism

The management of new media platforms requires a comprehensive mechanism, including content review, user management, interactive response, copyright protection, and other aspects. Some museums may have imperfect mechanisms and inadequate management in the management of new media platforms, resulting in poor operational effectiveness of the platforms. Content creation and sharing on new media platforms can easily lead to copyright protection and intellectual property disputes. Museums need to establish a sound copyright protection mechanism to ensure the legality and originality of digital content.

4.4. High security risk

The openness and interactivity of new media platforms also bring certain security risks, such as network attacks and information leaks. Museums need to strengthen security management and prevent security risks when using new media platforms for digital transformation. Data breaches, privacy violations, and other issues frequently occur on new media platforms, posing a potential threat to the digital transformation of museums. Museums need to strengthen data security protection to ensure the security and privacy protection of user information.

5. The development strategy of new media platforms in the digital transformation of museums

5.1. Strengthen technological investment

Museums should increase investment in new media technology, introduce professional technicians and equipment, and improve the production and display level of digital exhibitions. At the same time, we can also collaborate with universities, research institutions, and other organizations to conduct research and application of new media technologies, providing technical support for the digital transformation of museums.

5.2. Strengthen content innovation and quality control

Museums should focus on building new media platforms to improve the quality and creativity of their content. We can enrich the content format of the platform through cultural and creative activities, collecting audience works, and other means. At the same time, cooperation with professional media organizations can also be strengthened to improve the production level and dissemination effect of content. Museums need to produce high-quality and attractive content to stand out on new media platforms, encourage employees and volunteers to participate in content creation, and enhance the diversity and innovation of content.

5.3. Strengthen data security and privacy protection

Museums should strengthen the security management of new media platforms and prevent security risks. Network security measures such as firewalls, encryption technology, etc. can be taken to ensure the secure

operation of the platform. At the same time, it is also necessary to strengthen the protection of user information and avoid information leakage. Museums need to establish a comprehensive data security protection mechanism to ensure the security and privacy protection of user information. Regularly provide data security training to employees to enhance their security awareness and prevention capabilities.

5.4. Establish a copyright protection mechanism

There is considerable controversy over whether the three-dimensional images of cultural relics collected through 3D scanning can become new works. At present, the mainstream view in academia holds a negative attitude towards the copyright protection of 3D imaging works, especially the use of technological means to accurately restore and present the original appearance of objects in 3D scanning for preservation purposes, because "it lacks the originality and creativity usually required by copyright law"[4]. Museums need to establish a sound copyright protection mechanism to ensure the legality and originality of digital content, cooperate with new media platforms, jointly combat infringement, and safeguard the legitimate rights and interests of museums.

5.5. Strengthen cross platform cooperation and resource integration

New media platforms provide museums with opportunities for cross-border cooperation with other industries. Museums can collaborate with other institutions, enterprises, etc. to jointly develop products and services on new media platforms, integrate resources from different platforms, enhance the influence and competitiveness of museums on new media platforms, and promote innovative development of the cultural industry.

5.6. Pay attention to user feedback and continuous optimization

Museums need to pay attention to users' feedback and opinions on new media platforms, and make timely adjustments and optimizations. By utilizing data analysis and other methods, we can understand user behavior and needs, providing strong support for future digital transformation.

6. Conclusions

The rise of new media platforms has brought new opportunities and challenges for the digital transformation of museums. Through the application of new media platforms, museums can enhance the dissemination effect of exhibitions, stimulate innovative vitality, increase audience participation, expand educational functions, and promote cultural inheritance and innovation. However, in the process of utilizing new media platforms for digital transformation, museums also face issues such as limited technological capabilities, low content quality, imperfect management mechanisms, and significant security risks. In order to fully leverage the advantages of new media platforms, museums should strengthen technological investment, enhance content innovation and quality control, strengthen data security and privacy protection, establish copyright protection mechanisms, strengthen cross platform cooperation and resource integration, pay attention to user feedback and continuous optimization, and provide visitors with better cultural services. I believe that with the help of new media platforms, the digital transformation of museums will achieve more significant results and make greater contributions to the development of cultural undertakings.

About the author

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