

Intelligent Exhibition Hall-Research on Display Design in the New Era

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Abstract:

With the improvement of people's living standard, the pursuit of artistic aesthetics is also increasing. As the main mode of expression of modern exhibition, the development and evolution of the exhibition hall is also more and more rapid, the traditional exhibition hall can not satisfy people's daily needs, and the intelligent exhibition hall has also become the mainstream choice of the government and enterprises. This paper firstly expounds the concept of intelligent exhibition hall, then analyzes the comparison between traditional exhibition halls and intelligent exhibition halls, and through the observation and reflection of today's display design forms, it draws out the idea that the main element of display design is the humanistic consciousness, and looks forward to the development of future display design. It is hoped that this reflection will inspire and resonate with modern college students and future designers.

Keywords:

Intelligent Exhibition Hall, Display Design, Human-Centered Awareness

1. Evolution of the Exhibit Hall and Current Status of Research

1.1. The concept of exhibition hall

Exhibition hall is a kind of space, synthesizing people, objects and scenes used to convey the information of exhibits. Different kinds of exhibition halls have different functions and purposes, and can be divided into cultural exhibition halls and commercial exhibition halls. Improving enterprise economy and promoting consumption is the main purpose of commercial exhibition halls, while cultural exhibition halls are mainly used for cultural education and aesthetic appreciation. According to the exhibition time can be divided into temporary exhibition hall, short-term and long-term exhibition hall.

This article chooses the long-term exhibition hall for the purpose of cultural transmission as the main research object for display design research, i.e. museum exhibition hall.

1.2. Traditional Exhibition Hall

The traditional exhibition hall is the exhibits placed in the booth for people to visit, need to explain the narrator, but in the large space of the museum needs to explain the number of personnel, repeat the explanation not only explain the effect is not satisfactory, but also caused a waste of manpower and material resources; Secondly, in the effect of the display is not enough lively and interesting, the visitors take a look over, so it is difficult to give a deep impression of the exhibition mode.

The traditional exhibition hall has two main ways of display, static display form is mainly text pictures, basic display board, text layout, decoration for the main display. The display method is traditional, the display content is also single, the exhibition hall reuse cost is high, the content change is not convenient. Dynamic display is a video as the main form of exhibition, a large number of exhibits in the exhibition hall with the video form of summary display, combined with sound effects and the use of light, to create a combination of audio-visual kinetic space, this form of display compared to the static display can better attract visitors, the display form is rich and interesting, and to change the content of the simple and convenient. But the shortcomings are also obvious, the lack of interactivity with visitors, can not make visitors wholeheartedly into it.

1.3. Intelligent exhibition hall

Intelligent exhibition hall is designed with multimedia interaction, immersive experience, VR, AR, and many display methods. Controlled by a unified intelligent central control system, with smart phones and other operating devices to control the exhibition hall, the background can be cloud sharing on the exhibition hall analysis and monitoring. Intelligent exhibition hall intelligent remote compared to the traditional exhibition hall display advantages mainly lies in: a. Control function: the use of various technology control effects to display exhibits in an all-round way, without the need for a large number of physical display. And can let the exhibitors immersive, the process of viewing the exhibition as well as the exhibits to leave a deep impression. b. interactive function: in the wisdom of the exhibition hall display design, in order to more perfect realization of the interactive function, to be in the beginning of the design of the comprehensive consideration of the characteristics of the exhibits, the exhibitors' interest in the realization of a kind of visitors and designers and exhibits to fully communicate with the full interaction between the exhibits. From the visual point of view, the audience's first impression is particularly important, and should make full use of digital display technology.3. Display function: In order to make the exhibits have a fuller display effect at the beginning of the design of the intelligent exhibition hall, the excellent display design will make use of the space layout, display modeling and advanced exhibition technology to display the exhibits in various aspects. [1]

2. The Element of Display Design - Human Consciousness

From the smallest chopsticks to the largest rocket design, all the design output is to serve the needs of people. Maslow, the founder of humanistic psychology, suggested that human beings are organic wholes with multiple needs and motives, which include physiological needs, safety needs, social needs, the need for belonging and love, and the need for self-actualization, in order from the lower level to the higher level. [2] Therefore, according to this hierarchy of needs theory, it is important for designers to insist on human needs as the starting point of design in display design.

In the investigation of the information for the wisdom of the exhibition hall, the domestic more sound wisdom of the exhibition hall is mostly concentrated in the application of commercial display, in the rapid development of science and technology in the modern era, China's museums comprehensive wisdom is also just around the corner.

In this paper, the National Palace Museum, Cleveland Museum of Art and Cooper Hewitt Museum in New York as an example, because the author found in the data survey, these museums are highly visible, the wisdom of the construction of a comprehensive and mature technology. Designers at the beginning of the design for people, objects, space, the combination of comprehensive considerations, and in line with the intention of this paper to elaborate in the wisdom of the exhibition hall display design of the main element is the human consciousness of this point of view.

2.1. Visitors are the base point of display design

Display design must be visitor-centered and focus on humanization. From the physical to the psychological, the design needs to take into account the height, age, mindset and interests of the visitors as the basis of the design. At the Cleveland Museum of Art, they introduced a costly display wall that presents all the exhibits using a 40-foot wide touch screen that categorizes the exhibits in a postcard format, including material, time, and theme. Visitors can click on exhibits to zoom in, while heart icons add favorite exhibits to a personal favorites list. This design approach allows visitors to customize their tour according to their personal interests and preferences.

And at the Cooper Hewitt Museum in New York, they have been using a magic pen since 2015. Not only does this pen function as an information store, but it is also interactive. Visitors get the pen after purchasing a ticket and can store information about exhibits of interest, materials, and the pattern style of the artwork in the pen. In the Immersive Room, visitors can also use the pen to design personalized artworks and save them at any time. The "magic" pen not only provides real-time interaction and sharing of information, but can also be viewed, downloaded and saved on the museum's website through a unique code. This human-centered design concept satisfies the visitors' self-awareness and exhibition needs, and reflects the humanistic concern of the designers.

The display design of these museums rejects the traditional uniformity and takes into full consideration the individuality and needs of visitors. Through the human-centered design concept, the display design not only makes it easier for visitors to understand and feel the exhibits, but also enhances their sense of participation and the enjoyment of viewing the exhibition.

2.2. Guiding visitors to change their identity

The purpose of exhibition design is information transfer, unlike traditional exhibition halls, the identity of the visitor in the intelligent exhibition hall gradually changes from a passive receiver to an active explorer through technology and interactive experience, and the process of information dissemination also strengthens the communication and interaction between the exhibition designer, the visitor and the exhibits.

In the Cleveland Museum of Art, there is a module that guides visitors to naturally carry out such a role change. Sculpture Lens utilizes limb and face recognition

systems to quickly connect visitors to the museum's exhibits. The hands-on experience explores how the body can inspire art, "make faces", facial expressions are recorded and matched to the exhibits, and the matched expressions are quickly displayed on the Collection Wall and can be shared in real time with friends and family. friends and family.

In the Palace Museum, based on the "Emperor Qianlong's Years of Morning Joy" in the baby piling snow lion scene to create the ice playground "pile of beasts" interactive experience. By waving their arms, the audience will make snowflakes fall from the air, and the infants will gradually pile up snow lions, snow elephants and snow cats. Audience waving amplitude, the greater the speed of the beasts pushed up, you can personally experience the joy of the ancient imperial palace snow year playful play.

2.3. Display design takes visitors' safety as a prerequisite

The final product of the display space in the intelligent exhibition hall is the crystallization of the designer's creativity, and also the necessary basis for the communication of the information of the display design, which is the fusion of science and technology and art. At the same time visitors in the space for artistic experience, due to the increase in the number of visitors in the space, how to make security and art, comfort unity, this time it is necessary to specialize in the design for different groups.

In the Cleveland Museum of Art, the designers have thoughtfully established workshops for children, starting from their physiological and psychological characteristics, and fully considering their cognitive limitations and curiosity about new things. Under the premise of ensuring safety, the program is fun and educational, so that visitors of all ages can participate in the interaction. It deepens the experiential cognition between the visitor's family and the exhibition. Children simulate the action of pinching ceramics, pinching their favorite shapes on the display screen and choosing their favorite colors to glaze. Safe and low-difficulty interactive methods not only do not reduce the viewing experience of visitors, but will make visitors concentrate, immersed in it. [3]

2.4. Display design environment guides the direction of visitor interaction

In the design of exhibition space, the space atmosphere as a guide for visitors is also a very important element. In the visitors actively explore the spatial atmosphere is particularly important, in the first time into the space, visitors usually with curiosity and desire to explore the observation space, how to create a spatial atmosphere to guide visitors through the visual elements in the display design, but also display designers need to fully think about in the design. Whether the effect is achieved with the help of new technology and media depends on the change of visitors' cognitive behavior before and after in the spatial environment.

Therefore, at the beginning of the museum's display design should be "not create a technological ghetto" as the starting point for the design, technology hidden in the exhibits, so that every visitor who does not understand the art and museums can participate in the creation of art through interaction and experience to remove the disguise and constraints.

3. Collision and Integration-Tradition and Technology

Museums around the world use existing digital resources to launch exciting online exhibitions, creating a smart exhibition hall has also become an inevitable trend, so in the face of the fusion and collision of traditional exhibition halls and smart exhibition halls, what do we need to pay attention to?

3.1. Spatial form

First of all, in the use of color, vision is people's most direct senses and can directly affect the way of thinking. Different from the traditional showroom warm lighting, cold colors have become the first choice for designers to design the showroom space with strong sense of science and technology, and they want to create the atmosphere of the future by using a large area of cold colors and dark colors.

Secondly, from the beginning of the exhibition design on the choice of materials and lights, the lights usually do not choose bright colors, but will use hazy lighting effects to create the desired atmosphere. The material is also more inclined to translucent, increasing the sense of technology in the display space to enhance the overall sense of quality. In the display design, the fonts and typography on the plane are more inclined to sans-serif fonts with hard lines, which can better create a sense of technology and a sense of distance. The design of the exhibition hall also utilizes a large number of sound, light and electronic forms, which are no longer limited to the exhibition board.

Finally, in the beginning of the design for the flow of people in the planning of the line, pay more attention to the mobility of visitors, and the difference between traditional exhibition halls is that the flow of people in traditional exhibition halls is usually fixed, unchangeable. The difference between traditional exhibition halls and intelligent exhibition halls is that the flow of people is usually fixed and unchangeable, while intelligent exhibition halls must be dynamic, and the exhibits displayed by the museum may be a certain culture or service. This requires designers to reasonably divide the limited space, strengthen the user experience in the exhibition hall, so that visitors are completely immersed in it.

3.2. Cultural heritage

The design of the smart showroom can not focus on the application of science and technology and ignore the cultural connotation and display content of the exhibits themselves. The design of the exhibition hall can combine the history and culture of the exhibits, visual symbols and the space of the exhibition hall, so that visitors can receive richer information in the process of visiting the exhibition hall, so as to better understand each piece of the exhibits, and make the exhibition hall play out the maximum value.

4. Conclusions

By comparing and analyzing the traditional exhibition hall, intelligent exhibition hall, static and dynamic display as the main display mode of the traditional exhibition hall, it can be seen that the traditional exhibition hall exists in the traditional way of displaying, displaying the content is also a single, the exhibition hall reuse cost is high, the content is not convenient to change, the lack of interactivity with the visitors and can't make the visitors wholeheartedly devoted to all kinds of defects. It can be seen that the advantage of the wisdom exhibition hall for the traditional exhibition hall is

the use of a variety of control effects to all-round display of exhibits, without the need for a large number of physical display, and can make the exhibitors immersed in the scene. Through the research on the development trend of intelligent exhibition hall, including the current situation of domestic development, the development of constraints, proposed in the intelligent exhibition hall display design should pay attention to: design humanization, virtual reality, design means of diversification. On the basis of the above analysis, the Forbidden City Museum, Cleveland Museum of Art and Cooper Hewitt Museum in New York, from four aspects of the specific analysis of the museum display design elements - human consciousness. Based on the premise of intelligent exhibition hall display design technology application, how to make intelligent exhibition hall and traditional exhibition hall better collision and integration of analysis and research. Analyze the advantages of intelligent exhibition hall and the main elements of exhibition hall display design, improve the deepening of the knowledge and understanding of the exhibition hall display design. Both for display designers and personal development have reference significance.

Conflicts of Interest

The author declares that there is no conflict of interest regarding the publication of this article.

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