

## Museum Exhibition Planning Based on Big Data

Li Xingli

School of Fine Arts and Design, Chengdu University, 610106, China

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**Abstract:** The society, economy and science and technology are constantly developing. While people are pursuing material life, the demand for spiritual life and the improvement of cultural knowledge are also increasing. As an important place for cultural knowledge to be promoted, how to do exhibition planning in the context of current big data is crucial. This paper analyzes the impact of big data information technology on different industries and how to use big data to obtain effective information in museum exhibition planning.

### 1. Introduction

In recent years, museums have gradually transformed from a collection, protection, display and research site to a cultural institution that displays communication and public education services. From the past, museum exhibitions only showcased cultural relics and began to focus on “people-oriented“, paying attention to the needs and feelings of the audience, and striving to attract the interest of the audience and realize the exchange of “people“ and “things“.In this context, the exhibition staff of the museum can make full use of big data information technology to acquire and analyze the cultural needs and appreciation of the public, and plan and design an exhibition that is timely, close to the audience, and effectively communicate.

### 2. The Current Exhibition Situation of the Museum

There are about 4,000 museums in total in China, and about 35 million pieces of various cultural relics are collected. About 20,000 exhibitions are held every year, and more than 600 million people are visiting and learning. Museum exhibitions are one of the main ways of communicating with the society. This method is relatively flexible and can spread one or more cultures with the corresponding exhibition subjects. However, from the current situation, the museum exhibition content planning still can not meet the needs of the public. It is mainly reflected in the following aspects:

#### 2.1. Exhibition planning does not pay attention to the audience's feelings

At present, some museums are limited to the academic research of cultural relics when they are planning the content of the exhibition. They are more at the level of instrumental science, cultural relics and archaeology. They lack public behavior, opinions, and opinions throughout the exhibition planning process. Analysis of needs and surveys of the audience's actual experience after viewing the exhibition. If the museum exhibition only presents the object form of the cultural relics to the audience, and stays in the description of the basic information such as the era, name, size, and use, and cannot vividly tell and interpret the story of the cultural relics, it is difficult to attract the interest of the audience and promote the viewing behavior.

#### 2.2. The exhibition funds are tight

With the development of Internet information, people's understanding of knowledge is more convenient, and many people will have access to rich information on the Internet. Over time, the requirements for museum exhibitions have also increased. The audience of the museum is also one of the important indicators for assessing the exhibition. In this case, when the museum is planning the exhibition, it needs to have the latest concept and theme to meet the diverse needs of the public

and achieve their intended purpose. Correspondingly, this also requires the museum to invest more funds in organizing exhibitions. If the funding is insufficient, the final effect of the exhibition will not be able to achieve the desired state, and the exhibition content will not be displayed well, thus losing the meaning of the exhibition.

### **2.3. The homogenization of the exhibition content is high**

The exhibition content of the museum must attract the attention of the audience and stimulate the interest of the visit in order to achieve good results. At present, museums in China have similar collections of articles and articles. In the planning of exhibitions, there is a lack of research on local history and culture, which makes it difficult to form their own characteristics. This has caused the content planning of many exhibitions to be relatively simple, and the audience feels monotonous and boring, and it is difficult to stimulate the desire to appreciate. Therefore, in order to create an excellent museum exhibition, it is necessary to dig out the stories related to the local history and culture behind the cultural relics, and combine the cultural relics stories with the public's points of interest to conduct the topic selection, theme refinement and content interpretation to plan the independence. A distinctive, lively and interesting exhibition.

## **3. What is Big Data**

Big data refers to a large collection of data collected, managed, and processed by multiple sources in a multi-dimensional form. It requires a new processing model to have stronger decision-making power, insight, and process optimization. Massive capacity, high growth rates and diverse information assets. Big data needs to undergo a certain processing mode to better perform information mining and information processing. This processing mode is also different in different industries. The mastery of big data technology for a large amount of information also needs to be able to specialize in relevant industry information.

The development of information technology to a certain extent has evolved the concept of big data. Now, it has begun to be widely used in various industries. Based on a large amount of data, regular statistical analysis is performed on all data to obtain certain results. First of all, to ensure that the amount of data is large enough; in addition, all data needs to be analyzed, rather than random selection or specific parts; in addition, the basic data and analysis results that make up big data are not necessarily causal, but related relationship. Today, big data has the following characteristics:

### **3.1. Wide range of data impact**

The popularity of the Internet is relatively high in the world. On January 30, 2018, there were more than 4 billion Internet users worldwide, accounting for 52.63% of the total population. This is a fairly large population base. If the information can be disseminated to these people at the same time through the corresponding methods, the impact will far exceed the traditional mode of communication.

### **3.2. The total amount of data is huge**

Every day people use the Internet to create a lot of information. This information contains a wide variety of ingredients, and the growth rate of this data is accelerating. From 2011 to 2012, during the year, the information generated by the world actually exceeded the information created by humans all the time. This phenomenon is not negligible, so we need to set up the corresponding analysis mode for these related information to analyze, so as to find certain rules between different information, and get a better way to serve humans.

### **3.3. Complex data categories**

The data created by human beings is mainly created according to behaviors such as work and life. Since the behavior is relatively complex, the overall complexity of the information is correspondingly high. In addition, the information generated by different devices is also different.

Therefore, this information needs to be simulated and analyzed according to a certain processing method, so as to obtain corresponding information of human behavior, in order to correspond to the information processing of different industries.

### **3.4. Effective data quality**

The so-called data quality refers to effective data information. At present, the total amount of big data is very large. Under such a large amount of data, it is very necessary to identify the accuracy, consistency and integrity of data information. For example, when someone buys an item in an online supermarket and constantly learns and pays attention to a certain type of item, the information is valid, and the person has a demand or interest in the item. If someone appears in the online supermarket to buy an item and stays on a page for a day, this information can not directly determine whether it is valid information, or the computer may have forgotten to shut down. These data information needs to be analyzed and processed according to certain rules in order to obtain reliable and real information.[1]

## **4. How Big Data is Used in Various Industries**

In recent years, with the popularity of big data concepts, more and more industries have been affected by big data technology, which has undergone earth-shaking changes.

### **4.1. The impact of big data on traffic**

In big cities, people's travel is often affected by traffic jams. This effect is mainly caused by some uncontrollable factors. Now in all the mainstream map software, the traffic flow situation of each lot can be clearly and clearly marked in real time, and differentiated by different colors. In this way, people can make map references when they are traveling, and can find out the current traffic situation of the route that needs to be walked in time. When the route is found to be blocked, it can be adjusted according to the actual situation of other routes, thereby reducing the impact of traffic jams on your own travel and work.

### **4.2. The impact of big data on the retail industry**

The traditional retail industry mainly relies on the operator to conduct a subjective analysis of the sales of various products to determine which products are more popular and which products need to be eliminated. This approach can improve sales performance to a certain extent, but it is relatively limited and limited to some commodities. With the use of big data technology, the retail industry can combine the placement of various products, brands and other information to clearly understand the circumstances in which the products are more popular. In addition, it is also possible to make analysis and judgment according to different seasons and weather conditions, and has decided which products are more suitable for promotion in different weather. These are the analysis of the phenomenon of inevitable causality through big data means, and the conclusions are that the service industry has been significantly improved in terms of timeliness and efficiency, and can create a lot of value for retail companies.

### **4.3. The impact of big data on the museum industry**

Combined with the characteristics of big data, the museum sorts out the information that it needs and incorporates it into the big data category to analyze and mine effective information. The museum leverages the advancement of big data to provide better service and energy efficiency. The main target of the museum is the public. Therefore, when the museum conducts big data type analysis, it should consider more public influence factors. These data analysis include the ways, methods, and points of interest of the public to understand the museum and cultural relics before entering the exhibition hall. When the audience enters the venue, they can analyze the audience's interest in which cultural relics, and the stay time is longer. More, higher evaluation; and after the completion of the exhibition, the feedback information to the audience, the analysis of online public opinion information, etc., can obtain the exhibitors' exhibits, content evaluation, recommendation,

etc. for each exhibition. These can use big data to effectively analyze the exhibition effect information from the public level [2].

## **5. The Use of Big Data for Museum Exhibition Planning**

With the rapid development of the museum industry, the number of exhibitions in museums has increased, and cross-regional exchanges have become more frequent [3]. How to stand out and attract audiences in many exhibitions? Exhibition content planning is particularly important, and its level is high. It often determines whether the entire exhibition is successful or not [4]. In the new era, the mature big data has provided new ideas and new possibilities for museum exhibition planning [5].

### **5.1. Analyze audience needs with big data**

When many museums plan their exhibitions, they are more likely to start from the cultural relics themselves and the opinions of experts, resulting in the phenomenon of homogenization in exhibitions [6]. Such exhibitions are often a habit that does not fully understand the changes in audience needs and the consumption of public culture. The audience will have great interest in the first visit to similar exhibitions, but the interest will be greatly reduced by repeating the exhibitions with similar contents. Therefore, when planning museum exhibitions, we can make full use of big data technology to understand which areas of the cultural knowledge and information the public is most interested in, and most concerned, to help plan writers to combine content themes, communication goals and audience needs. In this way, the actual needs of the audience can be matched more quickly, the points of interest can be captured in time, and the content of the exhibition with both knowledge and fun can be planned.

### **5.2. Set up venues based on big data**

Many exhibitions are usually divided according to the size of the city, which is not accurate for the precise crowd. At the time of exhibition planning, the data of the viewers browsing the relevant information can be statistically analyzed by means of big data, and the regional distribution of the viewers can be analyzed to determine which audiences are interested in the exhibition content. According to the results, the exhibition venues are located in a place where a large number of interested audiences gather to suit the public's proximity to the public, adapt to local conditions, adapt to the local conditions, and promote and supplement the exhibition to carry out related activities to effectively ensure the visitors of the exhibition. Traffic and inspire more people to visit the exhibition.

### **5.3. Use big data to optimize publicity**

Before the public visits the exhibition, it is generally necessary to obtain the corresponding exhibition information before they know the exhibition situation and then decide whether to visit. This process, the propaganda method has a very big role in the judgment of the public. The traditional propaganda method does not know which public interest is, so it cannot be accurately publicized, and the promotion content is not attractive enough. Of course, it is impossible to achieve good publicity. In the Internet age, we can open up a new platform for exhibition communication based on the analysis of big data information. For example, the exhibition information can be promoted on the relevant media platform to expand the publicity; or the directional push for the viewers who are inquiring about the relevant cultural relics, so that the audience can accurately obtain the exhibition content and related information, and generate the exhibition. Interest, enhance the publicity effect of the exhibition.

### **5.4. Summary service based on big data**

A good exhibition content planning will make the exhibition's exhibition design and production smoothly completed, and the vivid cultural relics story and diverse display forms will attract the audience to conduct effective visits. During the visit, the audience will often use the cultural relics

guide (artificial guide, audio guide, app guide) to watch and listen to the lectures, and to understand the cultural significance and historical background of the cultural relics. However, due to the different ways of presentation and interpretation, not all exhibition design and explanation words can be well received by the audience. Therefore, through the means of big data, statistics and analysis can be made on the results of the audience's observations, and the audience's understanding of the cultural relics and the manner in which they are displayed are relatively high, and the forms of storytelling and dissemination of the cultural relics are constantly innovated. The way the audience provides better service, and strive to make corresponding adjustments in the subsequent exhibition process, so that the audience can get a better viewing experience.

## **6. Conclusion**

The current use of big data technology is very common. In this respect, museums need to follow the pace of the times. They use big data to manage the museum, so that when the audience wants to acquire relevant knowledge, they can go to the museum to visit the exhibition and make the museum more exist. Important and more meaningful. In the exhibition planning stage of the museum, it is necessary to make full use of big data information technology to understand the needs of the audience, expand the publicity effect, accurately locate the audience, summarize the service methods, and effectively enhance the exhibition effect to achieve good cultural exchange and information promotion. purpose.

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