Research on Information Visualization of the Land Silk Road

—In the Case of Xi'an

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Abstract

In the information age, text is no longer the only way to receive information. This way of information visualization is more able to attract the public's interest in visual reading. On this basis, it also has the characteristics of graphic, intuitive, interactive, visual, interesting, and so on, which is a good form of displaying information. The first part is the analysis of information visualization and the present situation at home and abroad. The second part is the further analysis of information visualization.

Subject Areas

Art and Design

Keywords

Xi'an, The Overland Silk Road, Information Visualization, The Traditional Culture

1. The Research Reviewed

1.1. Background and Significance

Among the cultural cornerstone of the Chinese nation with a long history, the Silk Road is not only a synonym for excellent traditional culture, but also a spiritual treasure of our national culture. It is a symbol of independence, confidence, affluence, peace and creativity. However, modern people know little about the culture of the Silk Road, and most of the presentation of the culture of the Silk Road is based on a large number of historical documents and relevant texts. Understanding the culture of the land Silk Road from these aspects is boring and is not beautiful or interesting. The way of presenting information with

images has great advantages compared with the way of presenting information with words. It can transform complicated text information into static images or dynamic images, and bring more intuitive visual effects to the public. Under modern development, information visualization has become a new trend that attracts the public's vision and a change brought by the information age [1].

1.2. Current Situation Analysis and Summary

Under the belt and Road Initiative in China, the research on the Silk Road has also increased greatly. It can transform boring text into graphics, symbols, colors and other elements, which is the convenience and attraction brought by information visualization.

1.3. Review of Development at Home and Abroad

China first proposed the "Belt and Road Initiative" in 2013. Since then, the research results on history, society, economy and culture surrounding the Silk Road have been increasing year by year all over the world, and even the research of other countries on the Silk Road has also increased a lot [2]. Secondly, with the proposal of the Belt and Road Initiative, the number of books, literature, journal articles and academic papers related to the Silk Road gradually increased [3].

2. Introduction to Information Visualization

Information visualization is a highly developed product of modern society. It can convey information more effectively and understand the content of abstract information in a more intuitive form, so that the general public can easily understand the increasing number of complex data and information [4]. Information visualization can accurately condense, sort out and classify complex information, and on this basis, through the rational use of visual symbols, images, words, colors, illustrations and other elements, the content is presented to the general public in a visual way, so as to realize the transformation of information. In this way, information can be communicated more effectively, the reception of information can be improved, and the public can understand it more easily [5].

Features of Information Visualization

There are various forms of information visualization, such as transforming text description into icon representation, data analysis into image representation, and color illustration into graphic representation. In order to achieve high recognition and improve the experience convenience, ICONS, graphics, colors, tables, illustrations… Etc can provide more effective visual experience for information and enrich the way of information presentation [6].

3. Visual Analysis of Information on the Land Silk Road

The Silk Road refers to the ancient economic and cultural communication routes

that started in China and connected Europe, Asia and Africa. The whole line of the overland Silk Road is about 7,000 kilometers. The Overland Silk Road, formed in the 2nd century BC, was an overland economic, trade and cultural exchange road connecting China with various regions of Eurasia and Africa. After its opening, it was still in use until the 16th century. The overland Silk Road was a channel for political, economic and cultural exchanges [7]. China is rich in silk, so silk has played a very important role in the history of the Silk Road for a long time. Therefore, in the 19th century, the German geographer Richthofen named it "Silk Road", which has been widely accepted by the public and spread to this day. The ancient routes of communication between the East and the West based on China are now known as the "Silk Road" [8].

Gaochang City, Jiayuguan, Yangguan, Yumenguan, Weiwu, Zhangye, Jiuquan, Dunhuang, Camel City, Suoyang City, Xuanquanzhi.They are all famous scenic spots and historical cities along the Silk Road.

4. Silk Road Information Visualization Modeling Presentation

4.1. Silk Road Color Design Analysis

The reappearance of the beautiful scenery along the Silk Road also arouses people's imagination and thinking about culture [9]. Blue tone is more suitable for the state of natural environment, showing more suitable for the presentation of real information visualization effect (Figure 1).

4.2. Silk Road Information Visualization Illustration Creative Thinking Analysis

The scenery along the Silk Road was systematically analyzed one by one, representative buildings were selected for careful analysis and shaping, and information visualization was carried out with illustration techniques [10].

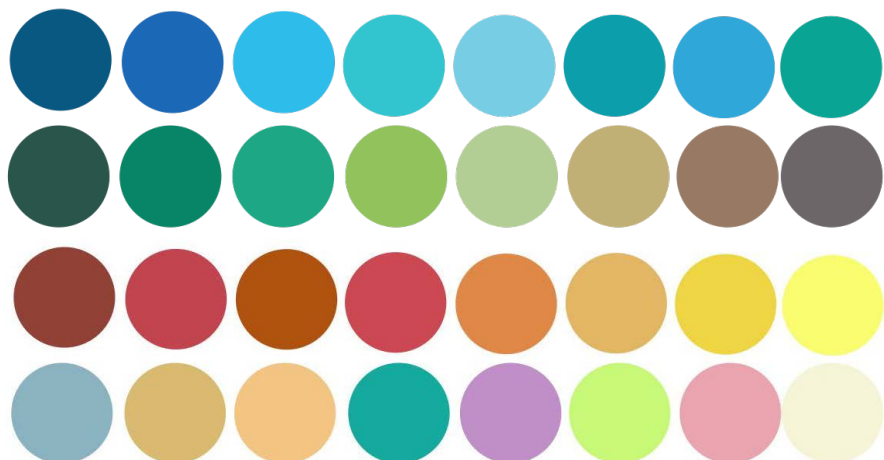The selected representative buildings are city wall, wild goose pagoda, aloes

Figure 1. Color extraction (Source: author).

Pavilion, bell tower, drum Tower, camel team, colorful Danxia, Tang Tricolor, Dunhuang fresco Fairy, Tang Sanzang, hibiscus flower... and so on (Figure 2).

The whole scenic spots along the route illustration using exaggerated processing techniques, to highlight the key things, scenery, and architecture [11]. The image of Dunhuang Flying Fairy is added to enhance the sense of mystery and artistry, enhance the atmosphere of ancient culture, create a sense of history, enable the public to feel the cultural atmosphere more personally, and provide the public with an immersive experience [12].

5. Silk Road Information Visualization Design Example Application

Silk Road information visualization design illustration example display as follows (Figure 3 and Figure 4).

Figure 2. Ancient and modern scenery along the Silk Road (Source: author).

Figure 3. Silk Road information visualization illustration effect display (Source: author).

Figure 4. Package extension effect display (Source: author).

6. Conclusion

The first impression of traditional culture is always that it is stuffy, backward and tedious. However, contemporary young people do not pay much attention to and like the art forms in traditional culture. The emergence of such a phenomenon makes us reflect that while reviving traditional culture, contemporary young people should also pursue their own changes as a traditional culture to meet the needs of the times and closely follow the trend of the times [13]. Modern young people are encouraged to accept traditional Chinese culture easily and become disseminators and beneficiaries of traditional Chinese culture [14]. The original design idea of information visualization lies in the fact that the work itself has the ability to guide, inspire and present information, which is a targeted communication [15]. The land Silk Road, starting from Xi'an information visualization research, can be said to be another interpretation of the traditional culture, also once again for the information age and the traditional thinking, thinking in the rapid development of China's modern economy, how can China's outstanding traditional culture is known by the public, and Renaissance brings honor to the world.

Conflicts of Interest

The author declares no conflicts of interest.

References

[1] Lu, J.Y. (2019) Information Visualization and Modeling Presentation of the Silk Road: A Case Study of the Northern Land Silk Road. Sichuan Normal University, Chengdu.

[2] Liu, C.G. (2014) Some Thoughts on Developing Maritime Cooperative Partnership and Promoting the Construction of 21st Century Maritime Silk Road. *International Studies*, **56**, 1-8+131.

[3] Yang, Q. (2021) Musical Instruments in the Ancient Qiuci Murals on the Land Silk Road. *National Music*, **47**, 7-9.

[4] Tears of the Thorn (2016) Friends from the Land Silk Road. *Xinjiang Humanities Geography*, **9**, 24-27.

[5] Wang, M.Y. (2016) Research on the Murals of Sogdians in Central Asia on the Silk Road of Tang Dynasty. *Design Research*, **6**, 91-99.

[6] Wang, C. (2017) Research on Tang Dynasty Brocade on the Silk Road. *Land of Abundance and Silk Road Symposium Proceedings*, Chengdu, 8 April 2017, 105-106.

[7] Han, M.R. (2021) Graphic Language Analysis in Information Visualization Design. *Shanxi Youth*, **46**, 140-141.

[8] Xin, Z.S. (2021) Research on Information Visualization of Epidemic Charts. *Design*, **34**, 63-67.

[9] Zhang, S. and Pan, F. (2021) Wuhan Tourist Attractions Information Visualization Design. *Art Science and Technology*, **34**, 11-13+17.

[10] Ouyang, M.Y., Xiao, Q. and Gao, J.S. (2017) Analysis of Creative Map Design in the Context of Information Visualization. *Packaging Engineering*, **38**, 61-65.

[11] Zhang, G.C. and Yan, J. (2021) Research on the Application of Color in Information

Visualization Design. *Industrial Design*, **17**, 85-86.

[12] Ding, Y.Q. (2021) Storytelling—Research on Visual Narrative Strategy of Information Visualization. *Journal of Chizhou University*, **35**, 96-99.

[13] Liu, S.J. (2021) Research on the Application of Graphic Language in Information Visualization Design. *Industrial Design*, **17**, 74-75.

[14] Sun, X.Y. (2021) Visual Expression of Information Visualization in Product Packaging Design. *Art Science and Technology*, **34**, 133-135+146.

[15] Liu, P.F. (2020) Analysis of Design Elements and Design Methods of Information Visualization. *Industrial Design*, **16**, 103-104.