Digital Art Into the Design of Cultural and Creative Products

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\textbf{Abstract.} Cultural and creative products (CACP) have their own unique creativity and culture, so they are popular with the public. Digital art of traditional CACP is a major direction of the reform and upgrading of CACP. However, there is little research on digital art in the design of CACP. Therefore, this paper puts forward the design research of digital art into CACP. In this paper, the application of digital creative products in the cultural and creative product design can be enhanced. According to the actual needs of traditional cultural and creative product design, combined with the latest digital media art, this paper constructs a new creative design model of CACP, and focuses on the interactive effect of digital media artistry on CACP. In order to deeply understand the influence of digital art integration on the design of CACP and the development of cultural and creative industries, this paper establishes the corresponding investigation and research. According to the questionnaire and public data, the sales volume of Dunhuang Cultural Products in Dunhuang increased from 13.584 million yuan in 2016 to 31.957 million yuan in 2019, an increase of 135%. The analysis shows that digital artistry has changed the design concept of traditional CACP, enhanced the sense of experience of CACP, and promoted the economic development of cultural and creative industries.

\textbf{Keywords:} Digital Media Art, Cultural and Creative Product Design, Cultural and Creative Industry, Optimization Design

1. \textbf{Introduction}

With the improvement of people's awareness of cultural consumption, CACP are also quietly rising. Adding new scientific and technological elements to CACP not only enriches the propaganda contents and forms of products of Chinese cultural and artistic creative enterprises, but also helps enterprises broaden the channels of product promotion and improve the publicity effect\textsuperscript{[1-3]}. CACP refer to creative products that can embody cultural connotation, have the function of spreading culture and are easy to trade. CACP can spread cultural knowledge, scientific methods, scientific ideas and humanistic spirit in the consumption process, and can reflect the commercial products of cultural events. However, different from teaching supplies, CACP are generally not used for exhibition, and most of them are easy to carry and sell\textsuperscript{[4-5]}.

Nowadays, there are a series of digital technology, such as virtual reality technology and multimedia technology. Its application brings multi-dimensional innovation possibilities for CACP\textsuperscript{[6-7]}. It is expected to make a thorough breakthrough in the production form and market communication
mode of traditional cultural and artistic creative enterprises in China, which is easier to effectively meet the market demand of enterprises and is more conducive to the production and promotion of enterprises. Exploring the innovation strategy of creative communication concept of cultural products in the era of digital economy will greatly contribute to the innovation ability of cultural and creative communication in China [8-10].

This paper deeply studies the application of digital art in the design of traditional CACP in China, and understands that the application of digital art is still in the primary stage in the design of CACP in China. The main shortcomings of the existing are single form of expression, lack of creativity, lack of novelty in content, etc., which can not really give full play to the advantages of digital art, so that cultural and creative industries develop slowly in the new era. In view of this situation, this paper puts forward the design research of digital art into CACP, hoping to strengthen the comprehensive design ability of CACP in China through a series of measures such as optimizing the expression forms of digital art in traditional CACP, strengthening the interactive experience of users, and constructing innovative design model of CACP. Through the optimization measures of this paper, the insufficient application of digital art in the design of CACP is preliminarily improved, which plays an important role in promoting the integration and development of digital art in cultural and creative product design. In this paper, a survey on the digital art process of Dunhuang CACP is carried out, which further verifies that digital artistry plays an important role in the creative design of CACP.

2. Digital Media Art and Cultural Creative Product Design

2.1. Basic Overview of Digital Media art Design
Digital media art design is a combination of digital technology and media art in the process of art design through the application of various science and technology. Digital multimedia visual art design can not only directly and accurately display the overall design art concept of the design work, but also directly let people quickly and accurately understand the artistic conception and design ideas contained in the design works. Digital multimedia modern art design has been widely used in all walks of life, which brings great convenience to the development of modern art design. Digital multimedia culture and art design has played a very important role in promoting the rapid development of China's cultural and artistic creative design industry, greatly improving the economic growth rate of China's cultural and artistic creative design industry. Digital media art design has a strong comprehensiveness. Because of this, digital media art design can play a particularly important role and value in cultural and creative industries, thus greatly improving the development speed of cultural and creative industries.

2.2. Experiential Design of Modern CACP
In the process of creative design of modern cultural products, designers need to re explore and think about cultural elements. From the perspective of modern aesthetics, product design includes cultural elements with a new look to meet the needs of public life.

Modern cultural innovation attaches importance to the design of product experience. Modern cultural products are designed on the basis of meeting the public's cultural needs and experience, and comprehensively reflect the design expression mode of product culture use experience function and product culture creative communication experience function. The advantages of cultural experience are embodied in three-dimensional and three-dimensional cultural experience. In the process of product design, we should integrate the material and cultural connotation of the product into the life style of the product, so as to meet the needs of the product, cleverly integrate the creativity, and highlight the interesting culture to create products. In the actual use of cultural products, we can experience traditional culture and enjoy traditional culture, and realize a comprehensive cultural experience from vision, touch, two-dimensional to three-dimensional.

2.3. Interaction Between Digital Art and CACP
Digital new media technology, also known as digital new media, is a comprehensive media concept.
Through the two-way deep integration of traditional technology and contemporary art, it shows strong technology combination application advantages, and is one of the most potential art industries in contemporary times. The so-called modern digital network media performance art is that it can be widely understood as a new form of media art expression, has been accepted by more and more people. Cultural and creative industry refers to the cultural and creative industry with creativity as the core, which is one of the most potential industries. The application of digital media art design in cultural and creative industries has a profound impact. Specifically, digital media art design has brought unlimited creative space for cultural creativity, breaking through the limitations of traditional art creation, and good interaction makes the distance between the author and the audience closer and closer. At the same time, digital media art design also further stimulates the creative inspiration of cultural creative creators, makes the spiritual connotation of works more profound, and improves the added value of products.

2.4. Construction of Innovative Design Model for CACP
In this digital technology era, due to the continuous emergence of a series of modern information network technology, cultural and creative art products also began to have new artistic forms. In fact, the concept design of cultural and artistic creative enterprise products is mainly supported by the comprehensive system of enterprise product development, technology improvement and innovation management. Among them, artistry, interactivity, entertainment and intelligence are the main strategic orientation of cultural and creative product innovation design in the digital era. Taking the main strategy of innovative design as the core, this paper constructs the innovative design model of popular science and cultural creative products in the digital era.

Innovative design management, organization of innovative design cooperation and enterprise innovation design support are the basis of supporting innovative design. Under the stimulation of market demand, the innovative design of CACP is manifested as art strategy, interactive strategy, entertainment strategy and intelligent strategy. The effective information communication between innovative design concept and enterprise digital multimedia information technology support is also a core design link in the application of innovative concept design, and its achievements are finally reflected in the aspects of interaction, entertainment and intelligence.

3. A Survey of the Influence of Digital Art on Culture

3.1. Introduction to Some Special CACP of Dunhuang
Culture emphasizes innovation, while civilization emphasizes inheritance. The creation of Dunhuang culture draws nutrients from the fertile soil of Dunhuang culture, brings forth new ideas, highlights its characteristics, and adds the beauty of Dunhuang Tourism Culture. From the Dunhuang Mogao Grottoes digital museum, Mogao Grottoes and Mingsha mountain cultural and creative shops, we can see that the products contain nearly 100 kinds of Dunhuang Cultural Elements and patterns. For example, when designing a simple wallet, people will be influenced by chess, lotus, mural stories of Mogao Grottoes, etc. It can be said that every cultural creative product and every Dunhuang cultural element are the elements of Dunhuang culture.

3.2. Purpose of Investigation
Through questionnaire survey and data collection, this study hopes to deeply understand the specific impact of digital art in Dunhuang Cultural Industry and cultural product design, as well as the impact on the development of the entire cultural industry.

3.3. Survey Methods
(1) Influence of cultural industry development
Based on the collection of public information, this survey summarizes the influence of Dunhuang Cultural Industry on the application of digital art in recent years. It includes the number of registered
4. Discussion

4.1. Survey Results and Analysis

(1) The substantial influence of digital art on Cultural Industry

This paper makes statistics on the number of trademark registrations, intellectual property applications and sales of digital cultural products since 2016-2019. The results of Table 1 and Figure 1 are obtained by sorting out the public data. According to the survey results, the number of optimized Dunhuang Cultural trademark registrations in the city has grown from 41 in 2016 to 119 in 2019, with a growth rate of more than 90%; the number of intellectual property applications has increased from 5 in 2016 to 31 in 2019, an increase of more than 5 times; in addition, the sales of Dunhuang Cultural Products in the city also increased from 2.13584 million yuan in 2016 to 31.957 million yuan in 2019, an increase of 135%. The analysis shows that digital art has played a positive role in promoting the development of Dunhuang Cultural Industry.

Table 1. Statistical results of investigation on the development status of cultural industry in Dunhuang city from 2016 to 2019.

| Particular year | Number of trademark registrations | Number of intellectual property applications | Sales of digital cultural products (10000 yuan) |
|-----------------|----------------------------------|---------------------------------------------|-----------------------------------------------|
| 2016            | 41                               | 5                                           | 1358.4                                        |
| 2017            | 69                               | 12                                          | 1712.6                                        |
| 2018            | 88                               | 18                                          | 2278.2                                        |
| 2019            | 119                              | 31                                          | 3195.7                                        |
Figure 1. Statistical results of sales survey of digital cultural products in Dunhua City from 2016 to 2019

(2) Satisfaction

In the survey of satisfaction in the design of digital CACP, this paper selects five indicators: color matching, interactive experience, practicality, visual experience and emotional experience. After sorting out the survey data, the results of Figure 2 show that the satisfaction of color matching, interactive experience, practicality, visual experience and emotional experience are 95%, 93%, 82%, 91% and 88% respectively. Analysis shows that in the process of digital artistry of CACP, the greatest impact on color matching and interactive experience can better meet the needs of users. For this reason, the minimum form of user satisfaction, as well as the lack of practical forms of user satisfaction, is mainly due to the lack of practical forms.
4.2. Design Path of Digital CACP Based on Visual Recognition

(1) Realize dynamic development

Under the continuous influence of modern digital technology, the design of visual image recognition technology has a strong overall visual ability to withstand the impact, which can effectively make the audience have a deeper visual experience. In the development and design process of modern cultural visual creative art products, we should make full use of the concept of visual art design, combine with a variety of visual design artistic styles and new information technology to meet the cultural needs of modern people's visual audio-visual experience.

(2) Experiential development trend

With the rapid development of digital network media in China, the user experience of digital media visual art design is becoming more and more prominent. Designers often pay great attention to meet the audience's different aesthetic visual experience, so they are good at innovation of product design concept and structural adjustment. For some cultural creative story products, designers can first use cultural story products to move ordinary users and arouse their different resonance.

(3) The embodiment of humanistic care

In recent years, great changes have taken place in people's life attitude and habits, and the design requirements for CACP have gradually improved, not only to meet the effectiveness of the function, but also to meet the diverse needs of people, so as to meet the psychological needs of people.

5. Conclusions

In recent years, due to the rapid development of digital technology, it has an important impact on the traditional cultural and creative product design. The traditional cultural and creative product design greatly enriches its own content expression form by using digital media technology. It can not only enhance the sense of user experience, but also better meet the spiritual needs of users. But at present, digital art is still in the initial stage of application in the design of CACP in China. The lack of
creativity, the lack of integration and the lack of practicability of design are the main problems. The research on the integration of digital art into CACP proposed in this paper focuses on these problems and plays a positive role in improving the status quo.

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