

Research on the Emotional Design of Hangzhou West Lake Cultural and Creative Products for Gen Z

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Abstract: Driven by the national strategy of "integrating culture and tourism", the cultural and creative (CC) industry has stepped into a high-quality development stage. As the main force of contemporary cultural consumption, Gen Z has unique consumption characteristics such as emotional demand orientation, digital native attribute and strong cultural identity. Hangzhou West Lake, as a world cultural heritage with profound historical and cultural deposits, its traditional CC products are facing problems such as homogenized design, single expression form and lack of interactive experience, which are difficult to meet the personalized and emotional needs of Gen Z, thus restricting the effective inheritance and innovative communication of West Lake culture among young groups. Based on Donald Norman's three-level emotional design theory (visceral level, behavioral level and reflective level), this study explores the innovative design path of West Lake CC products for Gen Z. Through literature sorting, user demand analysis and case reference, this study constructs an emotional design framework for Gen Z-oriented West Lake CC products, and completes three sets of targeted design practices. The design fully integrates West Lake's cultural symbols with Gen Z's aesthetic and interactive needs, and deeply elaborates the design ideas from the aspects of visual expression, interactive mode and cultural embedding. This study enriches the application of emotional design theory in the field of cultural heritage-derived CC products, and provides practical reference for the youth-oriented transformation and upgrading of West Lake CC industry.

Keywords: Gen Z, Emotional Design, West Lake Culture, Cultural and Creative Products, Interactive Design

1. Introduction

In the context of the in-depth advancement of the integration of culture and tourism, cultural and creative products have become an important carrier for the transformation of cultural resources and the spread of cultural connotations. They not only bear the function of cultural inheritance, but also meet the diverse consumption needs of the public. Hangzhou West Lake, a world-famous cultural heritage, has accumulated a wealth of cultural resources in the long-term development process, including natural landscapes such as "Ten Scenes of West Lake" and humanistic allusions such as Su Shi's governance of West Lake, which provide rich material for the development of CC products. However, at present, most of the West Lake CC products on the market are still in the traditional development mode, with a single form mainly based on souvenirs such as bookmarks, postcards and handicrafts. The design is homogenized, the cultural connotation is shallowly expressed, and there is a lack of interactive experience and emotional resonance with users, which makes it difficult to attract the attention of Gen Z consumers.

Gen Z, born between 1995 and 2009, has gradually become the core consumer group of the cultural and creative market with its huge population base and strong consumption potential. Different from the previous generations, Gen Z's consumption concept is more inclined to "emotional consumption", and they pay more attention to the emotional resonance and personalized experience brought by products, rather than just the practical value of products. At the same time, as digital aborigines, Gen Z is familiar with and loves various digital technologies, and has a strong acceptance of interactive products integrating new technologies such as AR and NFC. Therefore, how to take Gen Z's emotional needs as the core, integrate West Lake's unique cultural elements with innovative design concepts and digital technologies, and develop CC products that meet the needs of Gen Z has become an important issue to

promote the innovative development of West Lake's cultural industry.^[1]

Emotional design theory, proposed by Donald Norman, provides an important theoretical basis for solving this problem. The theory holds that the emotional experience brought by products to users includes three levels: visceral level, behavioral level and reflective level. At present, some scholars have applied emotional design theory to the research of CC products, but most of the research is relatively general, and there is a lack of targeted research on the integration of specific cultural heritage resources and Gen Z's unique needs. Based on this, this study takes West Lake culture as the core, takes Gen Z's emotional needs as the orientation, and takes emotional design theory as the guide to carry out in-depth research on the design of West Lake CC products, aiming to explore a feasible path for the youth-oriented transformation of West Lake CC products and promote the effective inheritance and innovative communication of West Lake culture.

2. Theoretical Basis and Research Ideas

2.1. Emotional Design Theory

Donald Norman's three-level emotional design theory is the core theoretical basis of this study, which divides the emotional experience generated by users in the process of contacting products into three levels: visceral level, behavioral level and reflective level. The visceral level is mainly related to the immediate sensory experience of users, which is formed by the appearance, color, material and other external forms of products, and is a kind of instinctive reaction of users. The behavioral level focuses on the usability and interactive experience of products, including the simplicity of operation, the fluency of interaction and the sense of control brought by users in the process of use. The reflective level is the highest level of emotional experience, which is related to the cultural connotation, symbolic significance of products and the personal memory and identity of users, and can bring long-term emotional attachment to users.

In the design of Gen Z-oriented West Lake CC products, the three-level emotional design theory has important guiding significance. At the visceral level, it is necessary to closely focus on Gen Z's aesthetic preferences, such as their favorite cute style, minimalist style and pixel style, and reconstruct West Lake's cultural symbols with visual languages that conform to Gen Z's aesthetic. At the behavioral level, it is necessary to combine digital technologies such as AR and NFC to design simple and interesting interactive modes, reducing the cognitive load of users and improving the sense of participation and fun. At the reflective level, it is necessary to deeply excavate the cultural connotation of West Lake, integrate historical allusions, folk customs and other cultural elements into the product design, so as to arouse Gen Z's recognition and resonance with West Lake culture and realize the inheritance of culture.

2.2. Research Ideas

The research ideas of this study are mainly divided into three stages: first, through literature sorting and analysis, we systematically comb the research status of emotional design theory, Gen Z's consumption characteristics and West Lake CC product design, and lay a solid theoretical foundation for the follow-up research. Second, through in-depth analysis of Gen Z's consumption psychology and emotional needs, combined with the characteristics of West Lake's cultural resources, we construct the emotional design framework of Gen Z-oriented West Lake CC products, which clarifies the design principles, core elements and implementation paths. Third, based on the constructed design framework, we carry out specific design practices, develop three sets of West Lake CC products with different forms, and elaborate the design ideas and implementation details in detail.

3. Analysis of Gen Z's Emotional Needs and Design Principles

3.1. Analysis of Gen Z's Emotional Needs for CC Products

As the main force of contemporary cultural consumption, Gen Z has obvious emotional needs for CC products, which are mainly reflected in three aspects: first, the need for personalized aesthetic experience. Gen Z pursues uniqueness and individualization, and is tired of homogenized products. They prefer products with novel appearance, unique style and strong personality, which can show their own taste and identity. Second, the need for interactive experience. As digital aborigines, Gen Z is

accustomed to interactive ways such as online games and social media. They hope that CC products can have certain interactive functions, so that they can participate in them and get fun in the interaction process. Third, the need for cultural identity. Gen Z has a strong sense of national identity and cultural confidence, and hopes to understand and recognize traditional culture through CC products. They are more willing to buy CC products with profound cultural connotation and unique cultural symbols.

3.2. Design Principles of Gen Z-oriented West Lake CC Products

Combined with Gen Z's emotional needs and the characteristics of West Lake culture, this study puts forward three core design principles: first, the principle of emotional resonance. Taking Gen Z's emotional needs as the core, we should realize the emotional connection between products and users from the three levels of visceral, behavioral and reflective, so as to arouse users' emotional resonance. Second, the principle of cultural integration. Designers should deeply excavate the cultural connotation of West Lake, integrate natural landscape symbols, historical allusions and folk customs into product design, and realize the organic combination of culture and products. Third, the principle of technological innovation: designers should combine new digital technologies such as AR and NFC to enrich the interactive mode of products, improve the fun and participation of products, and meet Gen Z's demand for digital interactive experience.

4. Design Practice of Gen Z-oriented West Lake CC Products

Based on the above design framework and principles, this study carries out three sets of targeted design practices, namely, the desktop game "Boating Through the Four Seasons of West Lake", the somatosensory AR interactive device and the NFC music magnetic sticker "Soundscape of the Four Seasons of West Lake". The following will elaborate on the design ideas and implementation details of each product.

4.1. Desktop Game: "Boating Through the Four Seasons of West Lake"

The design of this desktop game takes Gen Z's preference for interactive and social experience as the starting point, integrates the four-season landscape of West Lake and related cultural allusions into the game play, and realizes the inheritance of West Lake culture in the process of entertainment. The core design ideas are as follows:

In terms of visual design at the visceral level, considering Gen Z's preference for cute and pixel styles, the game adopts pixel art to reconstruct the four-season landscape of West Lake. For the spring scene of "Spring Dawn on Su Causeway", pink peach blossoms, green willows and clear lake water are presented in pixel form, with bright and fresh colors, which conform to Gen Z's aesthetic taste. For the autumn scene of "Three Pools Mirroring the Moon", the golden moon, clear lake water and three stone towers are designed in pixel style, creating a quiet and beautiful atmosphere. At the same time, the game sets four cute character cards: poet, painter, scholar and boatman, with a 1:2 proportion design, which is round and lovely in shape. Each character has unique cultural buffs, such as the poet can get extra rewards when encountering poetry-related events, which increases the interest of the game.

In terms of interactive design at the behavioral level, the game is designed for 2-5 players to participate, which meets Gen Z's social needs. The game map is designed as a 25-point path, which simulates the route of boating on West Lake. Players roll dice to move forward, and will trigger random events and cooperative tasks in the process of moving. Random events include poetry contests, guess the name of West Lake scenes and other links, which are closely related to West Lake's cultural allusions.^[2] Cooperative tasks such as "Lotus Fragrance Guide" require players to cooperate with each other to complete, which enhances the sense of teamwork. In addition, the game is equipped with seasonal bonus props and NFC soundscape stickers. When players reach the corresponding seasonal scenes, they can use the NFC soundscape stickers to trigger the soundscape of the season, such as the sound of oars and birds in spring, which enhances the sense of immersion of the game.

In terms of cultural embedding at the reflective level, the game integrates a large number of West Lake's cultural elements into the task cards and event cards. For example, the task cards are implanted with Su Shi's poems related to West Lake, such as "Drinking on the Lake at Dawn and Rain", and players need to complete the poem filling or appreciation tasks to get rewards. The event cards simulate West Lake's seasonal folk customs, such as boating on the lake during the Mid-Autumn Festival and appreciating lotus in the Quyuan Garden, so that players can understand West Lake's folk culture and

historical allusions in the process of playing the game, and arouse their recognition and love for West Lake culture.^[3]

4.2. Somatosensory AR Interactive Device

This device combines somatosensory technology and AR technology, aiming to meet Gen Z's demand for digital interactive experience, and realize the immersive experience of West Lake's four-season landscape through real-time interaction between users' body movements and virtual scenes. The core design ideas are as follows:

In terms of visual design at the visceral level, the device adopts cartoon pixel style to present West Lake's four-season scenes. The dynamic effect design is carried out for each season's scene: in spring, willow catkins flutter with the wind; in summer, lotus flowers bloom in the lake; in autumn, maple leaves fall all over the ground; in winter, snow covers the Broken Bridge. The colors are bright and lively, which conform to Gen Z's aesthetic preference. At the same time, the device's appearance design is simple and minimalist, with a white main color and a small screen, which is easy to carry and use.

In terms of interactive design at the behavioral level, the device is based on Kinect V2 motion capture technology and TouchDesigner rendering technology, which can realize real-time capture and recognition of users' body movements. Users can control the movement of virtual boats in the screen through simple body movements such as waving hands and twisting waists. The operation steps are simplified to two steps: starting the device and making body movements, which reduces the user's cognitive load and is in line with Gen Z's habit of simple and fast operation. When the virtual boat controlled by the user passes through the iconic scenic spots of West Lake, such as Su Causeway, Broken Bridge and Three Pools Mirroring the Moon, the device will automatically trigger corresponding cultural animations and sound effects. For example, when passing through Su Causeway, the animation of Su Shi inspecting the causeway will be displayed on the screen, and the sound of guzheng playing will be played at the same time, which enhances the interactive experience and sense of immersion.

In terms of cultural embedding at the reflective level, the device integrates a large number of West Lake's historical and cultural elements into the interactive process. In addition to the cultural animations and sound effects triggered by scenic spots, the device also sets up a cultural explanation function. When users click on the virtual scenic spots in the screen, the device will play the historical origin and cultural connotation of the scenic spots in the form of voice, so that users can understand West Lake's culture in the process of interaction. At the same time, the device supports users to take screenshots and share the interactive process on social media, which meets Gen Z's social needs and realizes the secondary communication of West Lake culture.

4.3. NFC Music Magnetic Sticker: "Soundscape of the Four Seasons of West Lake"

This product combines NFC technology, music and magnetic sticker functions, aiming to meet Gen Z's demand for personalized and emotional experience. It realizes the integration of visual, tactile and auditory experiences, and allows users to feel the charm of West Lake's four seasons through multiple senses. The core design ideas are as follows:

In terms of visual design at the visceral level, the magnetic sticker takes the four iconic scenic spots of West Lake as the theme, and adopts pixel art to create mini scenes of the four seasons. For example, the spring scene takes "Spring Dawn on Su Causeway" as the theme, with pink peach blossoms and green willows as the main elements; the winter scene takes "Broken Bridge in Snow" as the theme, with white snow and gray bridge as the main elements. The sticker is packaged in bright solid colors, and matched with a transparent acrylic box, which is small and exquisite, easy to collect and paste. The material of the sticker adopts the combination of pixel beads and acrylic, which has a good tactile experience. When users touch the sticker, they can feel the concave-convex texture of the pixel beads, which enhances the sensory experience.

In terms of interactive design at the behavioral level, the sticker is embedded with NFC chips. Users only need to touch the sticker with their mobile phones that support NFC function, and they can trigger the play of the corresponding seasonal soundscape within 0.4 seconds. The soundscape is carefully composed, integrating natural sounds and traditional musical instruments. For example, the spring soundscape integrates the sound of oars hitting the water, the singing of birds and the sound of guzheng; the winter soundscape integrates the sound of stepping on snow, the sound of wind and the

sound of chime bells. In addition, the sticker is equipped with a QR code. Users can scan the code to unlock hidden tracks, such as the recitation of West Lake-related poems and the playing of folk music, which increases the fun and playability of the product. At the same time, the sticker has a magnetic function, which can be pasted on refrigerators, iron bookcases and other places, with certain practical value.

In terms of cultural embedding at the reflective level, the soundscape and hidden tracks of the sticker are closely related to West Lake's culture. The selected poems and folk music are all works closely related to West Lake, such as Su Shi's "Drinking on the Lake at Dawn and Rain" and the folk music "West Lake Spring Dawn". When users listen to the soundscape and poems, they can imagine the beautiful scenery of West Lake's four seasons, arouse their emotional resonance with West Lake culture, and realize the inheritance and communication of West Lake culture in an implicit way.

5. Conclusion and Prospect

This study takes Gen Z's emotional needs as the core, takes Donald Norman's emotional design theory as the guide, and carries out in-depth research on the design of West Lake CC products. Through the construction of the emotional design framework and three sets of design practices, this study explores a feasible path for the youth-oriented transformation of West Lake CC products. The designed products integrate West Lake's cultural symbols with Gen Z's aesthetic and interactive needs from the three levels of visceral, behavioral and reflective, which not only meets Gen Z's personalized and emotional consumption needs, but also realizes the innovative inheritance and communication of West Lake culture.

The theoretical significance of this study lies in enriching the application scenarios of emotional design theory in the field of cultural heritage-derived CC products, and providing a new theoretical perspective for the research of Gen Z-oriented CC product design. The practical significance is that the designed products have certain market application value, which can provide practical reference for the West Lake CC industry to carry out youth-oriented transformation and upgrading, and help promote the in-depth integration of West Lake's cultural and tourism industries.

There are still some deficiencies in this study. For example, the follow-up market verification of the designed products is lacking. In the future research, we can carry out market promotion and user feedback collection of the products, and optimize and improve the design according to the feedback results. At the same time, we can expand the product line, develop more forms of West Lake CC products, such as digital collections and cultural and creative blind boxes, to meet the diverse needs of Gen Z. In addition, we can explore the integration of cross-regional cultural symbols to further enhance the cultural influence and market competitiveness of the products.

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