

Research on Emotional Design of Intelligent Jewelry - Take Xiaoxiao Series of Intelligent Jewelry as an Example

Song Tang¹, Liya Mai^{1*}, Siyu Sun¹, Huihui Wang¹, Tao Qin¹, Weitao Wu¹, Xizi Zhou¹, Rui Ni¹, Xintong Wen¹, Siqi Xie¹

¹ School of Art and Design, Wuhan University of Technology, Wuhan, China

Email Address

1985475036@qq.com (Liya Mai)

*Correspondence: 1985475036@qq.com

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Abstract:

On the basis of traditional jewelry only aesthetic but lack of functionality, intelligent wearable products lack of traditional jewelry aesthetic, based on the emotional design theory, this paper has a new thinking on the intelligent jewelry market, aiming at bringing new feeling and creating new experience, and according to the emotional design principle, thinking about what kind of design language, what kind of new functions to match and what kind of services to provide for intelligent jewelry It is a new service to meet the needs of users and mobilize their emotions. With the emotional design principle as the core, this paper explores the new development direction of Xiaoxiao intelligent jewelry, including the elderly medical scene direction, the elderly outdoor sports direction, the office scene direction and the graduation Memorial direction.

Keywords:

Intelligent Jewelry, Emotional Design, New Feeling, New Experience

1. Introduction

1.1. Background

In the case of serious homogenization of traditional jewelry industry, material, price, design style and other limiting factors hindering the penetration of traditional jewelry, the traditional jewelry market stagnates, showing great limitations. Traditional jewelry is expensive, and only has the function of relying on the aesthetic, which has been difficult to attract the public consumption beyond the just need; traditional intelligent wearable products also encounter bottlenecks in function innovation. With the rapid development of Internet and artificial intelligence, it touches people's deep needs and needs emotional design theory to guide the innovation of new intelligent jewelry. Therefore, to revive the market vitality, we should take the emotional design theory as the guidance, and explore the intelligent jewelry products with both aesthetic and functional, so as to further meet the new demand.

1.2. Market Status and Prospects

1.2.1. Current Situation and Inference of Traditional Jewelry Market

The consumption threshold of traditional jewelry industry is high, and there are great restrictions in material, aesthetic appearance and design style, so that it cannot penetrate the market. People are seldom willing to buy traditional jewelry except for rewarding themselves and festival activities. Under these factors, the traditional jewelry market is stagnant, and new added value is needed to stimulate consumption.

1.2.2. Prospect of Intelligent Jewelry Industry

Intelligent jewelry is a new type of intelligent terminal, which has a strong impact on the traditional jewelry industry and becomes an important category of jewelry. In the context of the rapid growth of the Internet plus smart wearable device market, the future jewelry market will enter the subdivision stage. As the integration and innovation of fashion jewelry and wearable devices, smart jewelry will be a model of cross-border integration. Intelligent jewelry can make traditional jewelry and people's intelligent life seamless. The well-designed powerful interaction ability can endow intelligent jewelry with connotation and stimulate market demand.

1.2.3. Targeted User Research

The data shows that there is a significant age difference in consumer preferences, with the elders loving gold, the young preferring K-gold, and diamonds “take all” but significantly affected by the income level. Young people's acceptance of non-precious metal jewelry and fast fashion alloy jewelry is significantly higher, which shows that young people are more willing to pay a premium for design. At present, the age of smart wearable product users tends to be younger. According to the report, after 2017, consumers' acceptance of smart wearable products has increased. Users aged 35 and below are willing to “pay” for high-tech smart products, and they do not lack the ability to consume, and gradually become the main force of consumption. From news reports and social surveys, it is found that young people work long hours and work far away, which leads to lack of company. The elderly are less and less aware of the warmth of their children, especially women with delicate emotions and relatively longer life expectancy. Society and market should pay attention to this part of demand.

1.3. Research Purpose and Significance

In the context of Contemporary Interdisciplinary interactive development, “Research on emotional design of intelligent jewelry” from the perspective of psychological needs and emotional value demands of female wearers of different ages, taking the cross-border integration of jewelry customization and new interactive technology as the innovation point, this paper explores how to combine chip and other scientific and technological means with art design to realize the interaction between jewelry and users Mutual, give more added value to jewelry, provide more comfortable and convenient life for female users.

1.4. Research Methods and Contents

Based on the emotional design principles and design psychology, this paper analyzes the psychological and behavioral characteristics of users by using the survey method and observation method, and obtains their psychological demand model for intelligent jewelry. Combined with the investigation and cases of intelligent jewelry in

different age groups, this paper analyzes the intelligent jewelry design strategies, deduces the application practice cases, analyzes the shortcomings and puts forward the prospects.

2. Overview of Emotion and Design

2.1. Definition of Relevant Concepts

2.1.1. Emotional Meaning

The formation of people's emotion is a long-term process. The formation of people's emotion includes many different physiological and psychological states. The different characteristics of the emotional state affect the way of behavior. People get external information (touch, taste, etc.) through the senses, and people will record this information constantly in life. Over time, this kind of information and feeling will become a kind of emotion. On the other hand, the trigger of emotion is also completed through this process. The trigger of emotion is completed by external stimulation and internal stimulation, and external stimulation includes experience, external things, etc. internal stimulation includes memory, internal psychological state and so on. The definitions of emotion and feeling are different. Emotion will change the state of the body, and feeling will produce specific emotions.

2.1.2. Emotional Design

Professor Donald Norman of the United States put forward the three-level theory. He divided the design goals into instinct level, behavior level and reflection level, corresponding to three different levels of human brain processing proposed by psychology. Instinctive level focuses on making users get emotional stimulation by contacting products, corresponding to the appearance elements of product design. This level of design usually attracts users' attention with the help of color, modeling and materials. The behavior level focuses on making users have fun through interaction in the process of using the product, which corresponds to the functional elements of product design and optimizes the user experience. The level of reflection focuses on allowing users to think about the connotation of products, corresponding to the cultural elements of product design. To a large extent, the resonance of users to products comes from their identification of product culture and emotion.

2.1.3. Research on the Principle of Emotional Design

i. Design and Analysis of Instinct Layer

Instinct level design mainly involves the initial effect of product shape. People's observation and understanding of shape is instinctive. If visual design is more in line with the instinctive level of thinking, the more people will accept and like it. In order to meet the needs of the user instinct layer, we consider the shape of each product.

a. Medical products are inspired by the draught flower, which symbolizes life, courage and faith, and run through earrings, brooches and necklaces as a set of jewelry. The user group of this product is middle-aged and elderly women. According to the survey, middle-aged and elderly women prefer traditional materials and design. Therefore, the material of this product is rose gold, 925 silver, round white diamond and freshwater pearl, which fits the instinctive needs of middle-aged and elderly women. The element of Tingli is also a traditional design element favored by middle-

aged and old women. It has the meaning of symbolizing life and can convey their children's good wishes.

b. Taking into account the user's personalized and customized needs for appearance, it allows users to feel dominant, and allows users to customize the experience as an extension of their self-awareness. The outdoor intelligent wearable design combines the beauty of jewelry and the function of aromatherapy. The overall inspiration of this series of jewelry comes from the 24 solar terms of Chinese intangible cultural heritage traditional culture, which endows the traditional culture with a new era connotation through novel means of expression. The appearance of the continuation of the elderly women's favorite expensive material, rose gold and pearl. The representative flowers in the 24 solar terms are abstractly designed and integrated into the shape. Inspired by Guerlain lipstick and replaceable lipstick shell, aromatherapy smart bracelet can also replace the shell purchased by users.

c. We are committed to designing expressive visual effects according to the needs of instinct layer. Visual effects can show emotions and help users empathize. The graduation ring uses the concept of shadow in the memorial sense, and is designed according to the appearance of Tongji University Library. In order to convey the idea those four years of university is the epitome of life, the tree is abstracted as a silhouette and depicted outside the ring. In addition, the initials of the Graduation University highlight the University. The graduation ring of Shutu evokes the user's emotion with touch lighting effect on the appearance. The gradually lit books always remind the user of a good learning time and add strength to the heart.

ii. Behavior Level Design Analysis

Behavior level design is all about the user's experience with the product. The operational part that controls the daily behavior of the body is called the behavioral hierarchy. For functional products, the most important thing is performance. Using the product is a series of operations. Whether the good first impression brought by the beautiful interface can continue depends on two key points: whether the task can be completed effectively and whether it is a fun operation experience. Four aspects of excellent behavior level design: functionality, intelligibility, usability and physical feeling. Therefore, in the behavior level, what we want to describe is the specific technology and method of smart jewelry to meet the needs of users.

a. Medical and nursing direction intelligent jewelry achieves interactive intelligence between jewelry and wearer through deep integration of data and Internet technology. To a certain extent, it can save time for doctors and improve the efficiency of treatment. We pay close attention to the user's emotion, comfort and utility. In terms of mobilizing the user's emotional experience, we designed jewelry to monitor the body temperature and abnormal index of physical symptoms, automatically broadcast the initial symptoms and response measures by voice, and provide the maintenance scheme and upload it to the mobile phone, which can make the user understand his body regularly and bring a sense of peace of mind; if it is a severe symptom, long press the button, the light flashes and gives an alarm, and send it to the emergency room contacts. This creates a tense atmosphere, and the alarm helps users to maintain their awareness and know that their situation has been known through voice feedback, so that the elderly who have a situation will not be helpless psychologically.

b. Outdoor sports smart jewelry bracelet design and development of mobile app and cooperation, data collection and Analysis on the mobile end, combined with the user's

preferences to recommend the appropriate fragrance. The jewelry can volatilize the fragrance and make the user feel the fragrance better by making use of the characteristics of light weight and close contact with people while meeting the aesthetic requirements. In terms of users' emotional experience, on the basis of getting good impression with beautiful appearance, the bracelet can also emit fragrance in line with the aesthetic atmosphere, which can match the user's needs and mood change, which can greatly enhance the popularity and accumulate public praise. In the initial stage, when the user chooses the fragrance, the bracelet will not give the recommended option. After the user wears it for a period of time, the bracelet will collect data and learn according to the user's habits, and then give the suggestions that really meet the user's wishes.

c. Taking full account of users' use scenarios, we are committed to making each product and specific scenes have a high degree of matching. The workplace direction light butterfly intelligent jewelry bracelet adds NFC expansion function at the technical level, and adds an intelligent Mini module inside the jewelry. Once authorized, the module can realize convenient functions such as electronic payment without networking and payment by ordinary means of transportation. In terms of user emotional experience process, linkage app can record daily data in real time, visualize data analysis, and make it easy to view at any time. Save the trouble of opening multiple apps one by one or not having the patience to check the data on weekdays, visualize the fragmented data, effectively improve work efficiency and provide life suggestions. The office scene smart wearable carries the smart chip and the "Internet plus" technology, and combines the intelligent hardware of infrared module and voice module, which can satisfy the functions of pronunciation, translation, recording, communication and so on, and fully meet the personalized needs of different users.

d. Pay attention to the function innovation. Graduation ring is an innovative idea for cloud storage technology, which uses the function of instant photography and wireless storage in the cloud. Compared with the recording function and schedule management of the mobile phone, the ring on the hand is more concise and fast to realize this function, and liberates the restrictions of the hand. It can be played back and stored independently of the mobile phone, and can be combined with the mobile phone independently.

iii. Reflection Layer

The level of reflection is the thinking part of the brain. The design of the reflection layer mainly includes the feeling of the product. The design of reflection level is related to the meaning of the object, and it will be more complex and change rapidly under the influence of environment, culture, identity and identity. This level, in fact, is related to the long-term feelings of customers, and needs to establish the long-term value of the brand or product. Only by establishing emotional ties among products, services and users, and influencing self-image, satisfaction and memory through interaction, can we form the cognition of the brand and cultivate the loyalty to the brand, and the brand becomes the representative or carrier of emotion.

a. Storytelling helps people understand the process of experience, build their interaction framework, and recall their experience after using the product. Career direction light butterfly intelligent jewelry bracelet is inspired by the light and shadow matching of traditional Chinese Intangible Cultural Heritage shadow play, and the design elements are selected as the love theme of "butterfly loves flower" with

Chinese traditional charm, which integrates modern design and traditional poetry, and “man butterfly loves flower, two people depend on each other”.

b. In arousing humanistic feelings, we choose the traditional culture that people in agricultural society rely on to guide their survival, which can arouse the national feelings of users. This series of jewelry is inspired by the 24 solar terms of traditional Chinese intangible cultural heritage culture. The representative flowers in each solar term are extracted for abstract design, and the traditional culture is endowed with a new era connotation through novel expression techniques.

c. Paying attention to reflective hierarchy design can make users constantly aftertaste. The humanistic care of intelligent jewelry for outdoor sports is reflected in the fact that the contemporary fast-paced life greatly increases the pressure, which can easily lead to negative emotions such as anxiety and irritability, and even lead to mental illness. Aromatic substances in plants play a positive role in regulating the psychological state of the human body, so we use natural plant aromatic substances to help the wearer relieve the pressure of life and relax. This kind of healing is moistening and silent. After users use this learning, low-cost product to improve the quality of daily life and bring good healing effect for a period of time, it is difficult to give up.

d. Design reflection level product service needs to meet the needs of users in terms of values and social values. The three products of emotional care in the direction of medical care, under the background of the large gap of maintenance personnel and the difficulty of caring for the elderly in medical care, for the middle-aged and elderly people who are prone to accidents at any time, the intelligent jewelry with dynamic diagnosis and treatment function can effectively reduce the probability of danger.

3. Conclusions

Significance of the Combination of Emotional Design and Intelligent Jewelry

Under the principle of emotional design, it is significant to design intelligent jewelry solutions in different scenes

a. It can guide designers to break through traditional functions, focus on bringing new feelings and experiences, and design services that pay more attention to users' emotional needs.

b. When functionality, usability and learnability run through the whole design process, the function realization and effectiveness of the product will be qualitatively improved in terms of humanization.

c. The intelligent jewelry design that pays attention to the instinct layer will more reflect the aesthetic feeling of jewelry, weaken the sense of technology of traditional intelligent wear, and combine delicacy and efficacy.

d. With the development of technology and the improvement of people's acceptance of intelligent wear, intelligent jewelry under the principle of emotional design will occupy the market with its unique advantages.

Xiaoxiao intelligent jewelry is committed to giving users the best first impression in terms of material selection and appearance elements. In terms of function trigger and use process, it also fully considers the balance between people's adaptation to products in different scenes and functionality, intelligibility, usability and physical feeling. It also pays attention to people's daily healing experience, emotional needs,

national feelings and youth commemoration Also in accordance with the emotional design principles of deep thinking and design. However, if it is put into production, it still needs to advance with the times and technology development in terms of appearance delicacy, technology selection and user learning ability, and user's willingness to adapt to the use of smart jewelry. At present, there is a lack of unified standards between intelligent jewelry and hardware devices, and the popularity of NFC also requires a large number of hardware devices. With the advent of 5g era and the penetration of new technologies such as optical interaction and flexible chip into daily life, intelligent jewelry will be able to get rid of the external limitations and reach the aesthetic standard equivalent to traditional jewelry. The industrial chain will also develop in depth, and the corresponding market will be developed from popular fashion consumables to high-end customization. The future intelligent jewelry, which is not less exquisite than traditional jewelry and equipped with artificial intelligence service, will be the only choice for people who need to wear jewelry now.

Conflicts of Interest

The authors declare that there is no conflict of interest regarding the publication of this article.

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