

Friendly Design and Interaction Relationship Study on Sitou Tea-Sipping Design of Cultural Product

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Abstract. Cultural products contain external and internal implications. The distinctive implications of products and the interactive relationship with users are the foundation for cultural creative products. Based on this, the conversion of friendly design in cultural products is investigated through the study of the relationship between friendly design and interactive relationship in cultural product, literature review and case analysis with the application of converting Sitou local cultural characteristics to the design development of cultural creative products, for the purpose of promoting product value. Thus, three conclusions are proposed as follow : (1) the three major elements of “emotional arousal”, “emotional association” and “emotional communication” can be taken into account when discussing the conversion of product friendliness to help designers’ product style design and the emotional communication; (2) with the added-value of converting Sitou’s local cultural characteristics, the tea-sipping products studied show the unique elements of local Sitou culture and the style differentiation of delicate products; and (3) friendly design in products is able to serve as a medium to convey the emotions for enhancing the interaction between people.

Keywords: Cultural Creative Product, Friendliness, Design, Interaction.

1 Introduction

The cultural products of cultural creative industry or creative industry are the production of the conversion between life style and consumption patterns. The necessity of cultural creative products is relative but not absolute. According to the description in terms of cultural and artistic products in post-modernism, personal feelings and emotional judgment have gradually replaced objective judgment of single values. [5] Indicates that the value of cultural products is equivalent to “implications”. While the “use value”, according to the rule of experiences, is the meaning visible from the appearance of the products (external), the symbolic value is the meaning behind the products (internal). The implications of the cultural products is considered an application of converting cultural use value to cultural symbolic value and even to symbols of value for creating indefinite business opportunities [6, 10, 7, 3]. The unique implications of products and interactive friendliness between users and product as a result are the internal foundation of cultural products design.

Apart from creating individual product language showing the uniqueness of products, it enhances product's friendly interactive value.

Based on the ideas, the friendly design and interactive relationship between cultural products are studied through collecting cultural product samples in the market; it can be used to analyze the case for friendliness conversion form by discussing the design elements from the interaction and communication between products and users. In addition, the design and development of creative tea-sipping culture products with Sitou local cultural elements are introduced to verify the evaluation of the friendly design and interactive relationship in cultural products. The interactive value between cultural products and the users could be promoted and the results could be the references for sellers and relevant researchers when conducting cultural products design. The study aims at achieving the following three goals based on the background and motives above, which are:

1. Generalizing the conversion elements for friendly design products by discussing the cases of cultural product.
2. Conducting the developmental design of innovating tea-sipping products by discussing Sitou's local cultural symbols and implications, and turning them into design elements to produce innovative value for the products.
3. Recording the evaluation of the interaction between users and products to generalize the elements of friendly design in cultural products.

2 Literature Review

In order to study the theoretical basis of friendly design and interactive relationship in cultural products further, the following are the review discussions for relevant theories aiming at friendly design products and Sitou cultural image.

2.1 Friendly Design in Cultural Products

Interactive Design and Communication. In daily life, no matter what activity an individual is engaging in, he/she continuously transmits personal ideas to others and also gets the other information from other people or media. Such behaviors are the elements of communications. Generally speaking, there are two ways of communication, namely the verbal and non-verbal communication [8]. In view of design, product or visual communication design is associated with two participants, presented participants (the description in the process) and interactive participants (those whom communicating with each others through certain media, such as producers and viewers). In the course of such communication, interaction in some conditions is directly and immediately. For example, practically designers communicate with viewers by showing various designed graphs.

Furthermore, there are some differences between the natures of communication in designers and viewers. The former allow the "message" to be "delivered" and "received" actively, while the latter is to "receive" the "message" passively. As a result, what it takes to be the complete design drawings and products is essential. Products and design drawings are the objective knowledge that could be learnt from objective experiment and this depends on mutual participation from designers and viewers to further figure out the best module with more types of interactive

conversion for passing the messages behind products and the association between designers and users.

The Conversion Types of Friendly Design in Products. From the theories of communication mentioned above, cultural product itself also has much deeper emotional elements. Emotion is the origin of design and creation, and has been widely used in product design in addition to arts. Subjective self-expression and objective cultural image can be considered in the course of designing cultural products. Adopting multiple essences and understanding cultural implications when expressing friendly emotions help products transmit or arouse the nature of emotions.

The conversion of friendly design product in the research mainly refers to the concept of using emotions in design as proposed by Donald A. Norman in “Emotional Design” [4]. The following three levels are indicated aiming at emotions in design thinking:

1. Instinctively level: the original effects of product including product presentation, perceptual impact and feeling
2. Behavioral level: the experiences which can produce influence on product function and use to users.
3. Reflective level: the feeling, recognition, emotion and memory which can influent the conscious and high-level part. The interactive influence between thoughts and emotions can only be felt at this level which may have change due to the difference in various cultures, experiences and growing process.

After combining these three levels and the representing skills of emotional friendly design, three major essences, “emotional arousal”, “emotional association” and “emotional communication” are taken into account when discussing the conversion of friendly design in products. In the level of “emotional arousal”, the instinct reflection is arose by the primitive instinct in the natural environment; in the level of “emotional association”, designer’s motive is arose by emotion and association is used for situational imagination; in the level of “emotional communication”, the attraction of product is the “feedback” in design rule to serve as a communication bridge for the communications between human beings and matters. The conversion association is showed in figure 1.

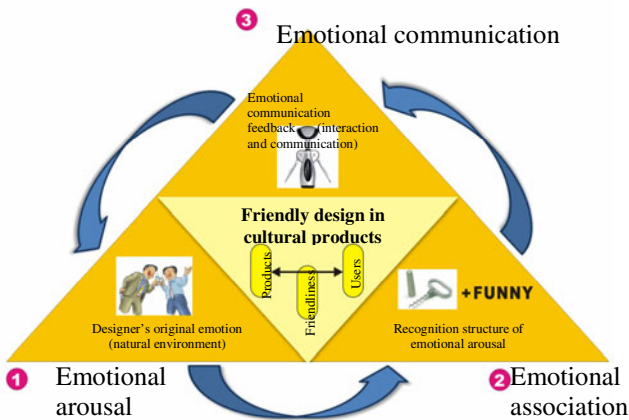


Fig. 1. Conversion of friendly design in cultural products

2.2 Sitou Cultural Image

Sitou Forest Park of National Taiwan University's experimental forest lies in central Taiwan and administratively belongs to Luku Township in Nantou County. It covers about 2,500 hectares with the altitude ranging from 700 to 2,000 meters. The climate is mild and the mountain outlook is magnificent. Not only is it abundant in natural resources but also in plant species and wildlife resources. In addition to offer an excellent environment for eco tourism, it is a veritable treasure house for academic research applications from various university departments and graduate institutes in biology sciences. Furthermore, it also provides us with a place for ecological education [1]. Under the forest management in recent years, the Sky Walk is designed as a place for ecological observation that enriches the forest park's worth for visits and becomes a famous scenic spot in Taiwan.

The data of research questionnaires show that the top five elements with the most Sitou Forest Park cultural image are the Giant Tree, Sky Walk, Bamboo House, Ginkgo The Grandfather tree and the Landmark of Sitou –University Pond [2]. Random sampling was conducted to select the ginkgo tree and the university pond as the major subjects for cultural image conversion to carry out the cultural product design development.

In addition, Chinese firs, cypresses, red cypresses, ginkgo trees and bamboos are widely planted in the park. Among the plants, cryptomeria japonica and bamboo forests are the most famous. Local materials are also selected for the production manufacturing in the hope of combining creative tea-sipping culture product design with unique natural resources and cultural landscape of Sitou Forest Park to develop cultural products with good quality and raise the added-value of domestic materials.

3 Methodology and Procedures

3.1 Research Subject

The research subjects are the ginkgo and the university pond representing local cultural image in Sitou forest park at Luku Township, Nanto County.

3.2 Methodology

1. Literature review: Literature review is one of the methods for historical research that emphasizes on describing literature content and re-chronicling the literature for better understanding. The conversion module theory of design communication and friendly design products are studied by collecting and analyzing the literature data.
2. Case study: case study is the in-depth study to determine the relationship between the factors from the status, and behaviors of the individuals, groups and institutions. The research aims at discussing the distinctive cultural images of Sitou Forest Park, analyzing the data of cultural products in the market and converting cultural image design to cultural product of tea-sipping.
3. Field study: the techniques of "interview" and "record" are adopted in the research. Interviews were conducted and the processes were recorded for users of tea-sipping cultural products in terms of their using assessment in the hope of collecting more object and real data.

3.3 Research Procedures



There are three stages for the research: the research subject and purpose are determined for further literature review to establish the theory foundation in the first stage; the product design is developed and sample is produced in the second stage; the filed interview is conducted in the last stage with the proceeding of users’ evaluation interviews and records in May, 2010. The collected data was also analyzed to establish the module.

4 Results and Discussion

4.1 The Case Study of Friendly Design in Cultural Product

There are too many kinds of cultural creative products in the present market; however, this study focuses on the deeper investigation of the relationship between design thinking and friendly design in cultural products when designers are in the development process. The table 1 shows the study case of cultural creative products in the market; two of them have the functionality as well as the combination of the cultural design elements. This is to sum up the design elements for conversion of friendly design in product by discussing “emotional arousal”, “emotional association” and “emotional communication” for understanding the use of designer’s elements such as symbolic cultural symbols, conversion of product function and friendly emotion.

Table 1. Case study of friendly design in cultural product

Product/Photo	 (Dragon-shaped chopsticks stand/bottle opener)	 (styled Salad mixer)
Emotional Arousal	You are drinking with friends, and you have a standard bottle opener; the scenario is with a dull, ordinary bottle opener in hand when you are drinking delightedly	You are dining at a restaurant with a cold, lifeless salad mixer in hand. There is nothing special about this mixer except that it is a salad mixer.
Emotional Association	I will be more willing to use it if it looks funny.	If a salad mixer is given a cultural meaning (combined with the shape of an ancient weapon) and fun, as well as emotionally bonded with the users, would it be helpful to increase the joy when using it?
Emotional Communication	The use of reification on the product design to conveys the pleasure of drinking. When friends see the bottle opener, more joy would be added out of the curiosity.	The product design applied reification and combined with composite materials, to allow cease the image of cold, lifeless product it used to be. This may help to increase the delight feeling to the user except the functionality of product itself.
Friendliness Conversion	To increase pleasure of drinking for the interaction.	To increase delight feeling for users.

Note: the photo is taken from <https://www.npmeshop.com/>

As shown in the case study of cultural creative products above, the conclusion and analysis of emotional design can help designers to focus on the style design and conversion of emotional communication. A product with emotions makes people feel more decent. It is no longer concerns with the changes in terms of appearance and form of an object only, but to make the receiver to feel the internal awareness of an object through the emotional presentation of it.

4.2 Design of Innovative Tea-Sipping Cultural Product

From the perspective of innovative development design, the Sitou landscapes culture and the tea-sipping product design are selected as the development objective, in the attempt to integrate new structures and styles into the creation of cultural image, as well as to investigate the evaluation of the friendly interaction between products and users. Tea drinking culture in Taiwan is a relaxing and pleasing activity that friends can enhance their friendship through enjoying tea together while talking and chatting. However, how do people in the busy modern life make a good pot of tea easily? Also, the traditional tea wares are more complicated in the ways of use and cleaning for the modern life which are not suitable for people nowadays. These factors are the purposes for the research. The design issue analysis and the initial improvement are shown in the table 2 after collecting the data and studying the advantages / disadvantages of the existed tea-sipping products with the integration of innovative ideas in the study.

Table 2. Design issue analysis of tea-sipping product design

	Design issues	Initial improvement
1	The tea tray on the market is poor in creative design and not able to break the constraint of traditional design.	Design the innovative elements and the change of the types.
2	Tea ware and tea tray are usually separately placed that occupy too much space.	Include the convenience of tidying up function that it can be used for placing tea-making facility when not being used.
3	When making tea, extra cups placed on the tray cause the waste of space and inconvenience for use.	The design of placing all cups in certain areas.
4	Tea tray in recent years has the designs of water sink and drain hole, but it will quickly fills up after several uses due to capacity.	Drain hole needs to have a tube which is cumbersome and therefore not suitable for the design elements. Water sink volume should be increased.
5	Product styles are highly repetitive and similar to other products without any design innovation.	A historic and cultural implication may be added to the design, and bionic design, zen presentation, modern essence and aesthetics can be some of the ideas for evaluation and analysis.

After analyzing the design issues, table 3 is made to indicate the design guidelines and orientations. Figure 2 is the draft of innovative idea, Figure 3 shows the 3D module construction and Figure 4 indicates the completion of product mock-up.

Table 3. Design guidelines

Design Highlights	Design Orientation
1 Specialty	The simple combination appearance and human-based interface design allows easy portability and assembly.
2 Material	Wood (80%) + metal components (20%)
3 Cultural image	The design for images of Sitou ginkgo trees and the university pond
4 Size	W500 x H85 x D300 (mm)
5 Style	Uniqueness of human, natural and artistic elements
6 Sustainable design	Primary concern of manufacture is easy-to-assemble/disassemble parts for mass production.

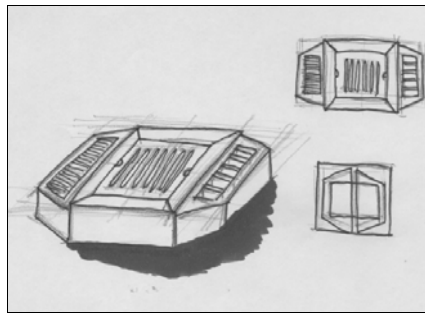


Fig. 2. Draft of innovative idea



Fig. 3. 3D module construction

The innovative tea-sipping cultural product in light of this study is named “Ginkgo Happiness Tea Tray” which combines the forms of ginkgo and bamboo and turns tea-making tray into a product two cultures. The design of tea cup and cup drain on left and right sides of the tray displays the consideration to the convenience for not only tea-making but also tidying up; this can help to save time for complicated tea-making preparation for modern people.



Fig. 4. Completion of product mock-up (Designers: Cheng-Dar Jan, Producer: Yong-Chang Zhang, Instructor: Chi-Hsiung Chen)

4.3 Design Evaluation

After the innovative tea-sipping cultural product design was developed, an interview for users' evaluation was conducted in May 2010. The following are the design evaluation analysis from the results of five users' experiences in terms of friendly design and interactive relationship in cultural product. The design evaluation analysis and the information of the users are as follow:

1. The basic data of the users
2. Design Evaluation

A. Tea-sipping product is also the artistic product with value of collection and display. The study has received widely positive feedback by creating innovative tea-sipping products with the use of conversion of Sitou local cultural elements. One of the users mentioned that "... the product not only has the function of traditional tea-making but also serves as a household decoration with its unique exterior style when not being used". From the results, while the appearance designs of traditional tea ware on the market are more typical and lacking of differentiation, the products with Sitou cultural image design not only enhance the product design value but also show the life and meaning of the culture.

B. Human-Oriented Design— Pleasure of Interaction. To adapt the modern life and improve the disadvantages of traditional tea ware, the focuses of the human-oriented tea-sipping product design are on the convenience and simplicity of the use. In addition to product's basic functions, users' tea-making habits are also considered to make users feel the interaction from tea-sipping for maintaining the friendliness and conveying the warm feeling to others.

C. Friendly Design — medium for emotional communication. Cultural products does not require too much decoration, instead, its simplicity is also able to convey the implications. The friendly design and user interactive relationship are verified by the tea-sipping cultural product in this study. Three of the users in this study all agreed that the product is able to not only advance the tea-making pleasure but enhance the product use frequency as well as increase the joy. It can be regarded as the greatest communication activity and the medium for emotional communication to shorten the distance between human beings and matters with the friendly design.

Table 4. The basic data of the users

User	Age	Occupation	Tea-sipping Experience (year)
A	45	House wife	10
B	53	Teacher	20
C	35	Bank Accountant	8
D	48	Designer	12
E	50	House wife	15

5 Conclusion

The conversion of friendly design in products and the interactive relationship are investigated to increase value for products by the study of literature reviews and case studies, which applied Sitou's local cultural characteristics to the design and development of cultural creative products. Three conclusions have been made from the study as follow:

1. The friendly design of cultural products is investigated as the conversion of product friendliness through the introduction of “emotional arousal”, “emotional association” and “emotional communication”. This helps designers to focus on the style design and the conversion from emotional communication to design ideas.
2. A new style cultural tea-sipping products is developed by the combination of the Sitou local cultural elements through this study; it helps to show the uniqueness of the local culture there which may create delicate products that distinguishes itself from others.
3. The friendly design in product is considered as a medium for emotional communication which helps to shorten the distance of interaction between human beings and matters. The focus of cultural products, compared to general product designs in terms of attributes, are gradually diverted into the improvement of symbolic values from the functional orientation; it shows the unique identity and differentiation for the products, and that is the central purpose of the cultural product design and development.

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