1. INTRODUCTION

View of Executive Yuan on cultural products in the museums is enhanced from the internal affairs of the museums into important national policy. The museums are educational and transmit the culture. They are the platforms of the public to absorb the cultural knowledge. Cultural products in the museums can extend the above memory. Thus, their display level in the museums should not be inferior to the exhibits in the museums.

1.1 Background

The museums collect the accumulation of human society, cultural achievement and civilization (Tsao, 2005; Chiu, 2006). The museums transform private collection into public or shared one and it is the progress of social development (Burcaw, 1987; Chiu, 2006; Huang, 2008). The museums must follow 3E rule: education, entertainment and enrichment (Kotler & Kotler, 1998). Kwai (2001) generalized ten functions of the museums: collection and preservation, creation, research, tourism, promotion, display, recreation, entertainment, education and economy. The above is reorganized, as shown in Figure 1. [18, 20, 24]

Subjects of this study are the institutions with the characteristics of the museums. “Cultural products of the museums” are defined as below: based on the collection, exhibitions and characteristics of the museums, the institutions with the same attributes and functions develop the products upon creative design, living aesthetics and fashion (Li & He, 2009). [1]

1.2 Motives

In late 20th century, the museums encountered the impact of cultural popularization and consumption. “Market value” significantly penetrated in the business of the museums which were originally non-profit (Chang, 2003). Since the museums were non-profit units in the past and they did not hire full-time designers, after the change of the national policy [12], the non-design and professional...
marketing manpower was forced to follow the policy. However, without the operating pressure, most of them finished the jobs carefully. Thus, cultural products in the museums became secondary and they were displayed at the corner as common products. By exploring design strategy of cultural products in the museums, this study will enhance the communication of cultural content to the public. The motive and principle are shown in Figure 2.

1.3 Purposes
Cultural products are the main carriers to transmit cultural content. Value of cultural products is the “symbolic resonance” effect. Therefore, identifiable, creative and symbolic knowledge of culture becomes the principal assets in cultural industry. Cultural products mean to review and design the cultural factors of the objects, develop the modern dimension of the cultural factors and satisfy the spirituality of the use of objects. It is the difference of cultural products from common products: culture identity (Guan, 1994).

By designing the products and marketing, the designers deliver the positive living culture to the users. Thus, how to develop the products with identity from various cultural products in the museums is the motive of this study to explore the strategic development of cultural products. Principle of the purposes is shown in Figure 3.

1.4 Research Procedures
Upon two dimensions, this study collects and reorganizes the related data. First, literature review is conducted to probe into the current operation of the museums in Taiwan. Interviews are conducted at the National Museum of Prehistory to collect data on operating model and design strategy of cultural products. Cultural products sold are reorganized and the visitors are interviewed by questionnaires. Finally, the interview data are reorganized in order to recognize design strategy of cultural products. The research process is shown in Figure 4:

2. LITERATURE REVIEW
Cultural creative industry will be mainstream in future national economic development. In rich society, “cultural content” is the key to develop special products. Cultural content is transformed and used to be specific forms of external presentation which are popular with the public. Customer identification or value added of the products is enhanced. It is the application of cultural industry and value of knowledge economy (Liu et al., 2001).

Figure 2: Relationship between the museums and users

Figure 3: Relationship of research purposes

Figure 4: Research process
2.1 Study on current situation of the museums

Important competitive resources of the museums should be based on the budget, the public’s participation, volunteers’ service, support from media, convenient transportation, appropriate location, quiet environment and service quality. Therefore, the museums can only sustainably survive in severe competitive environment by recognizing their core resources and specialty (Li & Chung, 2010). [13]

Operation of the museums mainly depends on total use of internal resources and integration with external resources. Value added is generated by the positive cycle between the two dimensions (Huang, 2008). The former includes internal business process, policy setting and detail distribution. The latter is the financial mechanism, such as the government or social resources. [25]

The museums can enhance the competitiveness by constructing the style, establishing the positive image, offering friendly service, providing educational and entertaining recreation, high-quality living and pleasure cultural consumption in order to enhance the competitiveness (Huang, 2008). Thus, with the time accumulation and implementation of strategies of the museums, brand image becomes irreplaceable core resources and increases the visitors.

2.2 Study of design thinking of cultural products

External images of cultural products are the meanings and information of the products. Thus, transformation of the abstract information and meaning into specific performance is the key for the designers. The museums are the good and rich design materials and inspiration sources. The designers should recognize the richness and uniqueness of museum resources and actively cooperate with the museums (Li & He, 2009).

2.3 Types of cultural products in the museums

Chen (2005) divided cultural products of the museums into four categories: [7]

1. Reproductions of collection: the reproductions based on the relics collected or exhibited.
2. Publication: it aims to promote the educational concepts, research, the prints of the exhibition outcomes, disc and films of the museums.
3. Derivatives: the products are developed based on the relics, exhibitions and characteristics of the museums as well as creative design, living aesthetics and fashion. They are usually practical.
4. Selected products: the museums introduce the products developed by external circle and related to the themes of the museums, such as the artists’ handicraft sold in the store of art museums.

Chen (2005) suggested that currently, it lacks the professional study on cultural products and product design of the museums. Derivatives of the museums in Taiwan reveal mass production, repetitive design, reduction of costs and false cultural impression. They do not significantly demonstrate the cultural essence and ethics in the museums. It is the important issue encountered by the museums in Taiwan.

According to the research of He and Li, five models of cultural product development are introduced (Deng, 2005), and they are mostly related to the budget structure of the museums. The cancellation will fail if the subjects do not match.

1. Self-development: the museums independently introduce the products and responsible for the profit and loss. The design of the products is managed by the personnel is the museums.
2. Commission: it is common development in modern museums. The suppliers offer the complete idea of cultural products and submit the accepted and identified products. The suppliers manufacture the products with the funds. The museums sign the contracts with the suppliers and sell the products in the museums stores.
3. Cooperation with the suppliers: in the creation of the design ideas of the products, the suppliers cooperate with the museums regarding the products of the related relics or exhibits and result in the agreement.
4. Public market procurement: the museums purchase the cultural product in the market according to their purposes. The measure is usually for the souvenirs in short-time exhibition. Since these exhibitions usually last for few months, once they are finished, the cultural products will not be attractive. The measure is to seize the timing and save the cost.
5. Authorization: it is based on the rich and unique collection of the museums. Currently, the museums act as the supervisors and authorize the pictures and use. By contract and sales, they receive certain percentage of the authorization fees.

Although public museums in Taiwan encountered the pressure of fund raising at the beginning, they are conservative about business development and organizational reconstruction. The museums intend to develop creative products by the cultural resources and characteristics of the museums. However, it lacks complete regulation of cultural products. Most of the
current cultural product developments in national museums cannot be implemented. Thus, they outsource the operation and become the supervisors. They can also implement the scope which is not allowed in public sector by the third party in the name of the foundations.

2.4 Current situation of National Museum of Prehistory

In July 1980, when then current Taitung New Station of South Link Line was under the construction, Pei-nan Site with rich prehistoric relics was discovered. It was the largest site of stone graves in Pacific Rim and Southeast Asia areas. With the efforts and expectation from different fields, in August 17, 2002, the museum was launched and it was the base for continuous development of preservation and research of prehistoric culture of Taiwan.

2.4.1 Cultural products sold by the museum

Data provided by the museum is shown in Table 1.

2.4.2 Outsourcing cultural products of the museum

Since National Museum of Prehistory operates outsourcing cultural products, the products exhibited and sold are shown below.

<table>
<thead>
<tr>
<th>Names of products</th>
<th>Pictures</th>
<th>Descriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Series of human face bone sculpture - tableware set (color)</td>
<td><img src="image1.jpg" alt="Image" /></td>
<td>In order to promote “the museums knowledge” and construct “brand image” by good creative products, National Museum of Prehistory cooperates with the designers and develops “serial products of old Shiang Lan historic spot” with sense of fashion and creativity. *Tableware set includes one bowl, one small dish, one oval plate and one big round plate.</td>
</tr>
<tr>
<td>Series of human face bone sculpture - tableware set (black and white)</td>
<td><img src="image2.jpg" alt="Image" /></td>
<td>The same as above. *Tableware set includes one bowl, one small dish, one oval plate and one big round plate.</td>
</tr>
<tr>
<td>Series of human face bone sculpture - coffee cup set (color)</td>
<td><img src="image3.jpg" alt="Image" /></td>
<td>The same as above. *Coffee cup set includes one cup and one plate.</td>
</tr>
<tr>
<td>Series of human face bone sculpture - coffee cup set (black and white)</td>
<td><img src="image4.jpg" alt="Image" /></td>
<td>The same as above. *Coffee cup set includes one cup and one plate.</td>
</tr>
<tr>
<td>Cup of crystal ball image</td>
<td><img src="image5.jpg" alt="Image" /></td>
<td></td>
</tr>
<tr>
<td>Cups of crystal ball image</td>
<td><img src="image6.jpg" alt="Image" /></td>
<td></td>
</tr>
</tbody>
</table>
2.5 Summary

Quality of cultural products should be controlled by the museums; in 1977, Museum Store Association in U.S. suggested that “the source of products in the museums is the sellers’ only responsibility”. Cultural products are part of the museums. Thus, products sold in the stores must match the purposes of the museum (Barsook, 1990). Besides, the museums should consider the educational function of cultural products. Although the products are outsourcing, the museums should strictly control the quality in order to make sure that the products meet the purposes, characteristics and educational objectives of the museums (Li & He, 2009). Thus, when developing the products, the museums should establish a design strategy, according to their characteristics and positioning, to develop and execute the products in order to meet the consumers’ needs, accomplish the goals above and guarantee the sustainable operation. [27]

3. DESIGN STRATEGY OF CULTURAL PRODUCTS IN THE MUSEUMS

Based on two dimensions, this study conducts interview of the museums in order to recognize the ideas and design strategy of the museums when selling the cultural products. Questionnaire survey is conducted on the visitors in order to recognize the difference and further develop the criteria of design strategy of cultural products.

In the exploration on the second dimension, this study will conduct questionnaire survey on the public’s cognition of the functions of the museum or information transmitted by cultural products sold in National Museum of Prehistory.

The questionnaires are analyzed by Likert scale.

4. RESEARCH RESULTS AND DISCUSSIONS

This study probes into the museums by qualitative interview and conducts quantitative questionnaire survey on the public. The two methods will be practiced simultaneously and compared.

4.1 Interview of the museums

By four questions, this study interviews the display and design department of the museums. The data is organized below:

1. What is the expectation of the museums toward cultural products (options below)? How about the importance?

<table>
<thead>
<tr>
<th>Important ←——→ Unimportant</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Promotion</td>
</tr>
<tr>
<td>2 Creation</td>
</tr>
<tr>
<td>3 Entertainment</td>
</tr>
<tr>
<td>4 Tourism, economy and recreation</td>
</tr>
<tr>
<td>5 Education.</td>
</tr>
<tr>
<td>6 Enrichment</td>
</tr>
<tr>
<td>7 Research; collection and preservation</td>
</tr>
</tbody>
</table>

In cultural creation, the museum first develops the ideas according to the exhibits with special meanings in order to create the products upon the antiques representing the aims of the museum. Secondly, according to the subjects’ ages, the museum develops the types of the products (entertainment, display or research). In high-price product development, the museum encounters the pressure of the stocks. Thus, the prices of the cultural products in the museum are not high, except for the outsourcing ones.

2. What is the type of the cultural product development in the museum?

a. Self-development: the cultural products are few; however, in some special exhibitions, the model is adopted. The difficulty is that the period of sales is short and thus the volume is low. Thus, the stocks will be avoided after the end of the exhibitions.

b. Commission: since the museum store is outsourcing operation, the products are controlled by the outsourcing suppliers. The museum cannot totally control them. The products are mostly the handicraft with the characteristics of local tribes. The store also sells the publication of the museum.

c. Cooperation with the suppliers: currently, we cannot cooperate with the suppliers the reason is that the product volume does not meet mass production. We have negotiated with IMEI before. However, the amount of the products cannot meet the balance between profit and loss and the cooperation will be impossible.

d. Public market procurement: the public market procurement will be under the venture below 100,000 of public bidding. However, the procurement under 100,000 does not match the concept of cultural creativity. The main measure is to print the logo of the museum on the present products in the
market. It is not as creative.
e. Authorization: Currently, all museums adopt the measure. Regarding the authorization of pictures and product examination, the museums receive the authorization fees according to the percentages of the products.

3. What are the responsive design strategy or design principle?
The term “design strategy” of the museums is ambiguous. The reason is that the thought of creative development in the museum does not root in the employees’ thinking model. Most of the employees still focus on research and education. In addition, lack of the funds is one of the obstacles of expansion in operational model of modern museums. As to design principles, each museum has important collections and if the characteristics can be transformed in eating, clothing, housing and transportation, it can be the main design principle.

4. Currently, what are the most popular cultural products? What are the reasons?
The products related to the dinosaurs are the most popular. The museum has introduced the exhibition of the largest Tyrannosaurus in the world. Since the related products were not expensive, the high school and primary school students could afford them. Besides, the jade of the human beast made of the Taiwanese jade is also popular since it is the important relic of the museum. The visitors also purchase the book bags, T-shirt and mugs with the logo of the museum. These products are not expensive and have visible logos. It seems that they are the most popular products of the visitors in the world.

4.2 Interview with the public
Questionnaire survey is conducted on the visitors. Currently, 15 questionnaires are obtained, as shown in Table 2.

According to Table 2, relative cognition of Object 1, 2, 3 and 4 is low. Thus, this study only keeps Object 1 and continues the comparison analysis in Table 3.

Table 3: Study on the public’s cognition after eliminating the difference
Study on the public’s low and high cognition

Based on study of cognition items in Table 3, the figures in Table 4 can be obtained.

According to table above, Object 5 and 6 reach the cognition at least 3.5(75%). Thus, the public’s resonance is easily triggered by cultural products (identity) with modeling and color similar to the images of the museum.

4.3 Results
1. As to the functions of cultural products expected by the museum, secondary intention of promotion, creation, recreation, tourism, display and education is higher.
2. In the interview of the museums, as to the functions expected by the museums, Object 5 and 6 match the
visitors’ cognition. In comparison to the other four products, these two are not only the symbolic application, but also have modeling and color similar to the images of the exhibits in the museum. They reveal high degree of culture identity.

3. In total questionnaires, secondary values of recreation and entertainment are the lowest. Thus, the public do not expect these two dimensions of cultural products.

5. CONCLUSIONS AND SUGGESTIONS

5.1 Conclusions
Based on the results above, the design strategy of cultural products in the museums is below:
1. Cultural products should not be only symbolic.
2. The higher the correlation (identity) with the exhibits in the museums is, the more likely the products will be identified.
3. The public value collection and preservation, promotion and display of cultural products in the museums. Thus, those with higher identity of the museums will be more popular.

5.2 Suggestions
Since the research time is short, this study did not probe into the outsourcing cultural products of the museums. Future studies can compare the cultural products of the museums with the outsourcing ones in order to recognize more precise design strategy.

REFERENCES


