

# MULTIFUNCTIONAL PACKAGING FOR CULTURAL

# PRODUCTS

BY

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#### Abstract

Dali is a famous tourist city in China, and flower cake is the representative of Dali cultural products, which is loved by tourists. The tourism industry stands as Dali's foundational economic sector, and well-crafted product packaging holds the potential to enhance product appeal among tourists. This, in turn, can lead to elevated sales figures while simultaneously propagating the rich cultural essence of Dali. Through investigation, the packaging of flower cake in the market is very ordinary and does not highlight the characteristics of flower cake. The use of plastic as packaging materials is also environmentally unfriendly. Through the methods of market research, random interviews with tourists, and reference to several excellent cultural product packaging, this paper deeply studies the possibility of multi-directional development of cultural product packaging. After numerous trials, the ultimate design for Dali cultural products was finalized. This design revolves around utilizing environmentally friendly packaging materials that serve multiple functions for these cultural products. Packaging has transcended its mere decorative role and now extends its utility even after the product is consumed. It can either be repurposed after use or have a minimal negative impact on the environment when discarded as waste. The diversified opening and closing methods increase the sense of surprise for the product and also provide new ideas for the packaging design.

(Total 46 pages)

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### Chapter 1

#### Introduction

#### 1.1 Background

Dali (Figure 1.1) is a famous tourist city in China. With beautiful scenery and a long history, various ethnic groups interact with each other. Dali is a famous tourist city in China. Dali is located in Yunnan Province and belongs to the plateau region. The natural scenery is a beautiful picture of towering mountains and freshwater lakes. About the cultural landscape, Dali has ancient city, ancient village, three towers, butterfly spring and other scenic spots, the annual temperature between zero to 30 degrees, the climate is pleasant, very popular with tourists. If the details exceed 1 paragraph, 1-line paragraph spacing is needed.

Dali has beautiful natural scenery, a long cultural history and rich tourist resources. Cangshan Mountain and Erhai Lake are national scenic spots and nature reserves. Cangshan Mountain is also a national geological park and a national historical and cultural city - Dali Ancient City. There are 138 tourist attractions in Dali City, 7 national cultural relics protection units, 15 provincial key cultural relics protection units, 23 state key cultural relics protection units, 42 municipal key cultural relics protection units, a total of 87 cultural relics protection units at all levels.

Cangshan Erhai is a national nature reserve. Cangshan is the green ecological barrier of Dali City. It is the residual chain of Yunling in Hengduan Mountain Range. It is composed of 19 north-south peaks with an average altitude of 3782 meters and a total length of 48 kilometers. Erhai Lake is one of the seven famous fresh water lakes in China, known as the "pearl of the plateau", 40.5 kilometers long from north to south, 3 to 9 kilometers wide from east to west, the maximum depth of 20.7 meters, the average depth of 10.2 meters, water storage capacity of 3 billion cubic meters.



Figure 1.1 Picture of Dali Source: Researcher

Dali Bai Autonomous Prefecture strengthened publicity and marketing, and made full use of platforms such as Douyin and XiaoHongshu to vigorously promote Dali tourism. The topic of "There is a life called Dali" and "China's best love expression place" has been played 8.47 billion times on Tiktok, and "Go to the windy place" has been played more than 13 billion times, covering 6 languages and 225 countries and regions, making Dali a popular wedding destination in China. At the same time, vigorously develop group tourism, sports tourism, leisure tourism, food tourism, etc., to promote the reshaping of tourism pattern. Since the beginning of this year, the state's tourism has shown a momentum of "continuous red", and Dali has been listed as the first of the "Top ten tourism yearning cities" and "prefecture-level cities that we are most yearning for". The state received 48.46 million tourists in the first half of the year, and achieved a total tourism revenue of 69.2 billion yuan, an increase of 106% and 114% respectively.

Entering the summer, the scenic spots of Dali Bai Autonomous Prefecture continue to launch a variety of cultural tourism activities and measures to benefit the people, driving the cultural tourism market continues to heat up. Since the beginning of this year, the state has received a total of 435,50,400 tourists, an increase of 129.55%; The total tourism revenue reached 62.004 billion yuan, an increase of 137.59%. (Dali government affairs open information)

Tourism is the pillar industry of Dali (Figure 1.2). I have created the following chart based on China's 2022 statistics. As you can see from the chart below, revenue has been growing steadily from 2015 to 2019. After 2020, tourism revenue fell sharply due to the epidemic, and after the opening in 2023, the tourism industry also recovered rapidly. As a person living in Dali, every holiday, the city will be full of tourists.



Figure 1.2 Tourism income of Dali from 2015 to 2021 Source: Dali government affairs, 2022

According to the statistics of China Data Network (Figure 1.3), nearly half of the people will throw away the product packaging directly, so the packaging will become garbage, improper treatment will bring serious harm to the environment.



I interviewed random group members and solo travelers at scenic spots in Dali. The interviewed tourists were 10 freelancers and 3 tour groups, a total of 103 people, 92 of whom bought souvenirs. 90% of people will buy tourist souvenirs. They will choose products with high recognition, long shelf life, easy to carry, local cultural characteristics, cost-effective and genuine products.

Dali lies on the southwest border of China. As a gathering place of ethnic minorities, Dali has a long history and cultural integration, forming a variety of cultural products. One of the best sellers is the flower cake. After the visit, in the ancient city of Dali scenic spot covers an area of 3 square kilometers, a total of 24 flower cake shops. Most stores use plastic as a material to wrap flower cakes, and plastic is known to be harmful to the environment."Identify research objectives."

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#### **1.2 Research Objectives**

The purpose of this paper is to provide convenient and good-looking cultural product packaging for tourists traveling to Dali, so that the packaging can exist independently and become items that can continue to be used. When the package is discarded, it does not harm the environment.

#### 1.2.1 Enhance market value

The packaging of artistic creativity can not only enhance the sense of value of the goods, but also shape the consumer group to have a sense of satisfaction with the brand. Enhance the packaging grade, enhance the sense of value of the enterprise. Therefore, only by tightly grasping the behavior of consumers, creative packaging design will tightly grasp the real market value.

#### 1.2.2 Convey core concepts

The "core concept" can strengthen the connotation of the product, thus deepening the audience's impression of the product, this invisible packaging, will inevitably bring a huge impact on the sales of goods. The core concept is communicated in place, so that people feel that the common interest point is realistic, the brand has the appreciation potential. Packaging design is one of the basis and performance of product differentiation, it can not only show the name of the product, trademark, quality, characteristics, uses, advantages, but also convey the cultural characteristics of the enterprise, customers through packaging in a short time to get product-related information.

#### 1.2.3 The attraction of visual effects

Creative packaging design plays a very important role in attracting visual effects. The communication effect of trademark packaging exceeds the general advertising communication value. Businesses must pay attention to creative packaging design, in the packaging of visual effects, color matching, font selection, etc., to increase the stimulation of visual effects, so that products on the shelf display, attract customers.

#### 1.2.4 Cultural identification

Tourists' cognition of Dali is the premise of consumption. It is only a rough or vague impression in the minds of consumers. Under this impression, once consumers come into contact with enterprises or brands, they will have a sense of closeness. Packaging design has the basic function of information dissemination, and the main purpose of information dissemination is to display products and Dali culture, as well as to promote and publicize in a wider scope. To do a good job of packaging design is also to provide more publicity media for products and brands. 1.2.5 Protect the product

The continuous progress of design is the significance of packaging under the premise of ensuring product realization. Protective function refers to the protection of the contents, so that it is protected from external shocks, to prevent damage or deterioration of the contents caused by light, humidity, etc. Packaging structure, packaging materials and packaging protection function have a direct relationship. In addition, the conspicuous and beautiful packaging design can make their products stand out from the dazzling shelves, so that products get more sales opportunities.

## 1.3 Dali Cultural product analysis

There are many cultural products in Dali, among which the best sales are the most popular among tourists, and the one with a high proportion of shops is flower cake. (Wang & Li, 2022)

Edible roses are rosaceae, rosaceae is a deciduous shrub, which is distributed in most areas, but it is the best planted in Yunnan. Yunnan is known as "the kingdom of plants" and "the country of flowers", and more than 70% of the country's flowers are produced here. It is precisely because Yunnan has unmatched advantages in other regions -- springlike climate, high-quality and abundant sunshine, and unique geographical location, which provide excellent conditions for the growth of edible roses.

The temperature in Dali is between 0 degrees and 30 degrees throughout the year, which is very suitable for flower growth and the quality of flowers is also very good. There are many flower markets here, roses are very common here, there are many farmers will grow edible roses, so the cost is low, the price of flower cake is also very cheap. This is one of the reasons why it is so popular with tourists.

Flower cake, as its name suggests, is made of fresh flowers. As shown in the picture below, the most special thing about it is that after picking fresh edible roses, cleaning them, drying them, adding white sugar and honey to stir them evenly as the

filling, the baked flower cake is sweet and not greasy, and has the unique aroma of roses.

There are dozens of flower cake shops in the old town of Dali, involving about 10 different brands, which are very popular with tourists.

Jia Hua Flower Cake: As advertised, three roses a cake. The flowers feel the most full, the taste is also very good. Personally feel the best flower cake.

Pan Siang Kee flower cake: The price is similar to Ka Wah, the feeling and taste of flowers, the feeling is a weakened version of Ka Wah, but it is also good.

Yami flower cake: The most delicate taste of flower cake, not too much flower sense, but the delicate taste is very good.

Yun Yu Huaxi flower cake: The taste is delicate, but also has a certain sense of flowers, the taste is also very moderate, and the price is close to the people. The best value for money.

Other flower cake: other brands, and not too characteristic, some are very sweet, personal feel too greasy, some feel is ordinary flower mud material, although the price is cheap but also eat not too out of the characteristics.



Figure 1.4 Size and picture of flower cake Source: Researcher

Jiahua Flower Cake is a gift brand of Yunnan Jiahua Food Co., LTD., focusing on the innovative development and production of Yunnan special dim sum. In 1994, it first proposed the "three roses and one cake" cake making standard, defining the quality of Ka Wah flower cake (Figure 1.4).

In the years of development, Ka Wah flower cake has always adhered to innovation, using fresh roses from Ka Wah Rose Garden as raw materials, adhering to the industry's high standards for raw material selection and production, and has become a must-have accompanying gift for Yunnan tourism, Yunnan specialty.

## Chapter 2

## Materials research and case studies

## 2.1 Environmental protection materia



Figure 2.1 Environmental protection material Source: Researcher

According to the new packaging trend article published by the plastic network on May 17, 2022, the following content is summarized. In recent years, environmental protection packaging materials have achieved certain research results, and have been popularized and applied in China. Green and environment-friendly packaging materials refer to the materials that conform to Life Cycle Assessment (LCA) in the process of production, use and recycling, are convenient for people to use, do not cause too much harm to the environment, and can be self-degraded or recycled after the end of use. At present, the green packaging materials widely used in our country are mainly divided into (Figure 2.1): paper products, natural biological materials, degradable materials, edible materials (Kong Zhen,2021).

Paper materials come from natural wood resources, fast degradation, easy recycling, and a wide range of applications, so it has become the most common, most widely used and earliest green packaging materials in China. Its typical representatives are honeycomb cardboard, pulp molding and so on. However, due to the lack of forest resources in our country, excessive use will consume a lot of wood. Therefore, with the development of technology, non-wood pulp and paper making should be actively used in the future, such as reed, straw and bagasse, to replace the use of wood and cause irreversible damage to the environment. After the use of paper packaging, it will not cause pollution and damage to the ecology, but can be degraded into nutrients. Therefore, in today's fierce competition for packaging materials, especially by the impact of plastic and foam products, paper packaging still has a place, with its unique advantages. The "paper" packaging is designed by Australian student Emilienrica. The packaging material is 100% biodegradable pulp, which has good adaptability and high recyclability. It is easy to handle, easy to degrade, and has reached the safety of microwave oven and food safety tested by FDA. The design of the box is ergonomic, and the design of heat proof can be comfortably held. The cover label keeps the noodles sealed and increases flavor time. The Pizza Tray designed by Zume Pizza was shortlisted for the DuPont Packaging Innovation Award. The packaging is made of 100% sustainably grown sugarcane fibre, non-tree, compostable and biodegradable. The tray can keep the pizza crispy and warm for a longer time. It absorbs maximum grease and moisture, keeping the pizza warm and crispy long after it leaves the oven.

# Natural biological packaging materials mainly include plant fiber materials and starch materials, of which more than 80% natural plant fiber, has the advantages of non-pollution, renewable, simple processing, beautiful shape, practical and simple, after being abandoned, can be well converted into nutrients, realize from nature to nature, into the ecological cycle. Some plants are natural packaging materials, as long as a little processing can become a natural flavor of packaging, such as leaves, reed, gourd, bamboo tube and so on. These packages are beautiful and have cultural flavor, which can make people feel back to nature and have the feeling of original ecology. Such as bamboo tube tea, wine packaging, original ecological coconut

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packaging.Rimping Supermarket in Thailand uses banana leaves instead of plastic to wrap vegetables, leaving shelves in shades of green instead of plastic bags.

Biodegradable materials are mainly based on plastics, adding raw materials such as photosensitizers, modified starch and biodegraders. Through these raw materials, the stability of traditional plastics can be reduced, and the degradation rate in the natural environment can be accelerated to reduce the pollution to the natural environment. According to different degradation methods, they can be divided into biodegradable materials, photodegradable materials, thermal degradable materials and mechanical degradable materials. At present, traditional degradable materials, such as starch based, polylactic acid and PVA films, are mainly used. Other novel biodegradable materials, such as cellulose, chitosan, protein and other biodegradable materials also have great development potential. Degradable in fast food. This material not only has the functions and characteristics of traditional plastics, but also can split, degrade and reduce in the natural environment through the microbial action of soil and water, or through the action of ultraviolet light in the sun after the completion of its mission, and finally re-enter the ecological environment in a non-toxic form and return to nature. Biodegradable materials, using a variety of renewable materials as raw materials, through biological, chemical and physical preparation of new materials, with biodegradable natural rubber can be used as educational toys of organic beverage packaging, can be connected into a variety of shapes, to achieve secondary use. Finnish brand Valio has launched a 100% plant-based dairy box. Cellulose-based packaging is at the forefront of plant-based packaging innovation, such as PulPac's 3D dry molding technology, which provides a renewable and economical alternative to plastic for coffee LIDS, coffee bags, dinner plates and more.

Edible materials are mainly materials that can be eaten directly or ingested by the human body, such as lipids, fibers, starches, proteins and other renewable energy sources. With the progress of science and technology, these materials are increasingly mature and gradually rising in recent years. However, because they are food-grade raw materials and strict sanitary conditions are required in the production process, their production costs are high and they are not convenient for commercial use. Learn more: Are these ingredients edible? Classification and introduction of edible membranes. Bob's fast-food restaurant in the US has launched an edible burger wrapper that can be eaten straight away or used as a napkin. KFC has developed the Scoff-ee cup, which allows you to drink your coffee and eat it in one gulp! The cups are actually sugarcoated cookies with a layer of edible candy wrappers and heat-resistant white chocolate inside.



#### 2.2 Analysis of Existing packaging

Figure 2.2 Analysis of packaging about existing flower cake Source: Researcher

At present, all the packaging basically has the above four kinds (Figure 2.2), using cardboard and plastic packaging, it is very easy to break, and these packaging can not be reused, the use of plastic and glue parts will cause harm to the environment after discarding.

As shown in the figure above, the packaging of flower cake is not very different from that of other cakes. Most of the packaging uses rose elements to represent flower cake in the packaging illustration, which I think is not enough. In contrast to this problem, innovation in the packaging structure may be a better choice (Chen, 2017).

## 2.3 Excellent cultural product packaging case



Figure 2.3 Excellent example of wine packaging in Dali
Source: Researcher

The Water Margin was written by Shi Nai'an and is believed to have been completed in the 14th century during the Ming Dynasty. The novel is based on folk stories and legends, and it depicts the exploits of a group of 108 heroic outlaws who rebel against corrupt officials and fight for justice during the late Northern Song Dynasty.

Set in a time of political corruption and social unrest, the story revolves around characters like Lin Chong, Song Jiang, Wu Song, and Li Kui, who are forced to become outlaws and take refuge in the marshes of Mount Liang. These characters possess diverse skills, personalities, and backgrounds, contributing to the novel's rich tapestry of human nature and social commentary. As shown in picture 2.3, the three photos on the left were taken by me in the Liangshan Wine Lake. Their packaging has the advantage of combining Dali fruit wine with the hero characters in the famous Chinese novel Water Margin. For example: Wusong green plum wine. After Wu Song was drunk, he was very brave and went to the mountains to kill the big tiger that was endangering the villagers, and he was loved by the locals. And provide a variety of sizes of wine for customers to choose from.



Figure 2.4 Excellent example of Tea packaging in Dali Source: Researcher

Tie-dye is a fabric dyeing technique that involves folding, twisting, crumpling, or tying fabric in various ways to create intricate patterns and designs. It is a method of adding color to textiles in a non-uniform and creative manner. The name "tie-dye" comes from the process of tying or binding the fabric before dyeing.

1) Fabric Preparation: The fabric, usually made of natural fibers like cotton, is pre-washed to remove any sizing or dirt that might resist dye absorption.

2) Folding and Manipulation: The fabric is folded, pleated, twisted, or bunched in different ways to create specific patterns. Rubber bands, strings, or other objects are used to bind the fabric and create areas that will resist dye penetration.

3) Dye Application: Dyes are applied to the fabric either by dipping, pouring, or squirting. Different colors can be applied to different sections of the fabric, and the way the fabric is manipulated and bound will influence how the colors interact.

4) Dye Setting: After dye application, the fabric is often placed in a plastic bag or wrapped in plastic wrap to keep it moist. It needs to sit for several hours to allow the dye to fully penetrate the fabric.

5) Washing and Unbinding: Once the dye has set, the fabric is rinsed to remove excess dye. The fabric is then unbound, unfolded, and washed to remove any remaining dye and to set the colors.

Tie-dye has been used for centuries in various cultures around the world, but it gained significant popularity in the Western world during the 1960s and 1970s as a symbol of counterculture and self-expression. The technique produces unique and unpredictable patterns, making each tie-dyed item one of a kind. Today, tie-dye remains a popular artistic and fashion choice, often seen on clothing, accessories, and home textiles.

As shown in Figure 2.4, the four photos on the down show the use of tie-dye for tea packaging. Using cloth as raw material and plant as dye, it is a good attempt to make tea packaging by tie-dye.



Figure 2.5 The packaging of Japanese sake Source: White deer brand, 2019

This is the packaging design of Japanese sake of White deer brand (Figure 2.5). Sake is a charaNishinomiya City, located in the "Beach area" between Osaka and Kobe, is known for its superior water quality, excellent rice production, and excellent location close to the sea. After the 17th century, a number of famous sake wineries emerged in Nishinomiya City, one of which was named Tatsuma Yoshi Saguemon, who established his own sake winery in Nishinomiya City in 1662.

As a talented businessman, Yoshitsu Weimen not only realized the future prospects of sake are very broad, but also noted that there is unlimited room for development of the barrel manufacturing industry. He used kegs and special cargo ships called "salutoku" to transport the produced sake to the bustling city of Edo (modern "Tokyo"). In Edo, sake is very popular and the demand is increasing. "White deer" as one of the famous sake producers in Japan is renowned in the world, and thanks to the high match with various Japanese cuisine, "white deer" has gained more and more sake lovers' favor. Internationally, more and more sake lovers are focusing on the beauty of shiraku sake itself, rather than as an accompaniment to sushi. Cteristic product of Japan. The bottle body is a farmer wearing traditional Japanese clothes. This package uses the elements of Japanese national dress, very national characteristics. You will find that this is a very distinctive product packaging.



Figure 2.6 The packaging of Chinese black tea Source: Yu Jian brand, 2020

Beijing Opera, also known as "Peking Opera," is a traditional Chinese performing art that originated in Beijing, China (Figure 2.6). It is one of the four major traditional opera genres of China, alongside Sichuan Opera, Henan Opera (Yu Opera), and Cantonese Opera.

The development of Beijing Opera can be traced back to the late 18th century. It began as a form of small local theater performances in Beijing and gradually evolved into a comprehensive and highly stylized performing art. Beijing Opera incorporates elements of music, singing, acting, dancing, and elaborate makeup and costumes. It is known for its distinctive movements, gestures, and facial expressions, emphasizing precise control of the body to convey emotions and character. Beijing Opera often portrays historical stories, legends, wars, and court intrigues as its subject matter. Performers use a combination of singing, recitation, acrobatics, and martial arts-like movements to convey the plot and emotions of the characters.

The opera features four main roles or "sheng" (male roles), "dan" (female roles), "jing" (painted-face male roles), and "chou" (clown or comic roles), each with its own unique characteristics and performance styles. The performers use elaborate costumes, makeup, and props to differentiate and enhance the characters they portray.

Beijing Opera holds a significant place in Chinese performing arts and culture, showcasing a rich blend of music, drama, dance, and visual aesthetics. It has gained international recognition for its unique artistic expression and cultural significance and continues to be performed both within China and around the world.

This example is a good combination of Peking Opera elements for the packaging of Chinese black tea.YU is short for Henan Province in China, where there is the famous Henan Opera, JIAN means meet. YUJIAN is to meet you in Henan, in Chinese pronunciation, and meet homophone, using the image of Yu Opera as a packaging element, is a very good combination of innovation.

This packaging material does no harm to the environment, and when folded outward, you can get a three-dimensional image of Peking Opera. When you see the packaging, you can associate with China (Zhang, 2017).

## Chapter 3

### A preliminary attempt at the project

### 3.1 Attempt 1

Through the above research, I divided the design ideas into three parts, as shown in Figure 3.1, and tried new packaging ideas through different combinations.

For the first time (Figure 3.1), I chose cloth as the material and adopted plant dyeing, so that my design is not only the packaging of flower cake but also a tablecloth, which can also be used as a bag for daily use.



Source: Researcher

The raw material of tie-dyeing (Figure 3.2) in Bai nationality area of Dali is pure white cloth or cotton-hemp blended white cloth, and the dye is indigo solution of natural plants such as liau blue, isatis root and mugwort growing on Cangshan Mountain. The process is divided into design, drawing, sewing, immersion dyeing, unstitching rinsing, whole inspection and other procedures. During production, according to people's favorite pattern pattern, the white cloth is tied with thread to make small patterns with certain folds, and then dipped into the dye VAT to dye. So repeated, each time the color of a deeper layer, that is, soaked to a certain extent, take out the dry, remove the valerian knot, there will be a blue background white flower pattern. These patterns are often made up of dots, irregular shapes and other simple geometric shapes(Song, 2023).



Figure 3.2Tie-dye Source: Researcher

The engraved pattern is applied to the printed cloth, and the anti-dyeing paste is scratched on it (Song, 2023) .After the scratched paste is dry and solid, it becomes the anti-dyeing layer. Then the dyed cloth is soaked with dye, the paste is removed after dyeing, and the obvious pattern at the bottom of the picture is called. Another first dyeing and then scratching the paste to draw the color into the pattern, called dyeing. Because the scraping paste is an anti-dyeing agent, it was often called scraping paste dyeing in the past. (Zhang, Kong, & Tian, 2023). Because it was often dyed with indigo in the past, and presented a clear blue and white pattern after dyeing, it was also called blue calico-cloth. The main steps of the pattern dyeing process: pattern design, engraving plate, making anti-dyeing paste, dyeing cloth positioning, scraping antidyeing agent, dyeing, removing paste (Figure 3.3).



Figure 3.3 Type dye Source: Researcher

Persimmon dye (Figure 3.4) is not only impressive color, even the texture of the cloth will also change significantly. When dyed with persimmon, a soft cotton cloth can be transformed into a tough, leathery fabric . "Persimmon dyeing" process is a kind of vegetation dyeing process, its dyeing solution is made by crushing the immature green persimmon, pressing the juice, and then fermenting it for more than one year. Unlike most vegetation dyeing processes, which involve soaking the cloth in a solution, persimmon dyeing begins to develop a tawny color and gradually deepens after the cloth is exposed to the sun. Therefore, persimmon dye is also called "sun dye". It's a craft that depends entirely on the sun. In summer, the color of the cloth will be dark, and in winter, it will be slightly softer. According to the wind intensity, humidity and different places, the work will be different (Wang & Zhang, 2022).



Figure 3.4 Persimmon dye Source: Researcher

Blue dyeing (Figure 3.5) is an ancient printing and dyeing process, which first appeared in the Qin and Han dynasties (Yu,2022). It also includes the printing and dyeing of wax valerian, winch valerian and valerian pinch. The raw material of indigo dyeing is the leaves of radix isatidis collected from deep mountains. The bluegrass is fermented in a vat to produce indigo, which is then used for the printing and dyeing of cloth. "Green, from blue, but better than blue" said this process. As the raw material of the dye solution, the stems and leaves of pliant blue are harvested in March and April every year, and they are soaked in water and injected into a large dye vat. It takes at least 5 months from picking them to making a full dye vat. During this period, indigo is needed to be extracted and fermented, and the foam needs to be observed to change from green to blue (Song & Liu, 2019).



Figure 3.5 blue dye Source: Researcher

## 3.2 Development and results of Attempt 1

3.2.1 Use environmentally friendly materials as packaging materials for cultural products.

3.2.2 The package can stand alone and continue to be used.

3.2.3 Apply some Dali characteristic culture and skills.

3.2.4 Seeing the package will make people think of Dali and even recall a good travel memory.

As shown in Figure 15, when opened it is a tablecloth and when closed it is a bag.



In the first model (Figure 3.6 )I tried, I used a hexagonal box with a bayonet design in the middle of the box to connect the boxes together, and seven hexagonal boxes could form a flower shape.



Figure 3.7 Attempt 1 model Source: Researcher

The attempt 1 was a failure, because the bag made of cloth is very easy to deform, when carried, will cause the internal box deformation, even damage the flower cake inside. And boxes made of hexagons look more like behives than flowers.

#### **3.3 Attempt 2**



On the second try (Figure 3.8), I chose the card board. Pop-up books, packaging,letter paper,postcard,Daily storage box.

In recent years, due to the wide application of pop-up book technology, more enterprises and public institutions like to use in a variety of picture albums, folders, and paper creative documents. Pop-up book is a unique type of book design, its design core is the use of paper tension and motion dislocation, display pop-up book opened when the instant shock! It breaks the limitation in space and creates a multidimensional depth of field. With unique techniques and presentation methods, it brings readers the superposition of color vision, page-turning hearing, material touch, and the unique experience of interweaving multiple sensory stimuli. Because of its extreme fun and interactive deeply loved by the public. Pop-up books are moving picture books. Some people say that pop-up books are visual interactive books in which the illustrations of the content become threedimensional or models. Pop-up books are generally divided into the following categories (Li, 2017):

Tunnel mode; The paper folding method of tunnel book is to make continuous mountain and valley folding of the paper according to a certain width, and then fold it into the wavy shape of this fan. When it is opened, it is like playing an accordion to produce the depth of field effect like a tunnel.

Cross space; Cross space is the most common stereoscopic effect. When opened directly or assembled, it is transformed into a three-dimensional crossover model, presenting a series of small rooms with all kinds of furniture. In addition to the flat floor design, it can also be designed into two/three floors of foreign houses.

90-degree scene layer; The principle is to cut the illustrations in outline on a single sheet of paper but not completely cut them off. Then, according to the different depth of field, the mountain and valley folds are folded to create a hierarchical stereoscopic perspective.

180 degree stereo; The main form of modern pop-up book, when opened, the main character like origami model immediately "bounce out", the specific structure of the way in many ways.

Theater style; As the name suggests, the book first opened to both sides, around the background of a small stage, page one by one, the story is told, but also supporting props, small dolls, random place, play, build a small theater.

Modern pop-up books, often a comprehensive use of more than a variety of techniques, such as 180 degrees + rod, such as rope, plastic rod, reflective pieces, interactive devices and so on, can better achieve the effect of pop-up books. The above

is for the main production of stereo books and the form of the designer to do a comprehensive classification of experience.

### 3.4 Development and results of Attempt 2



Source: Researcher

Modern pop-up books (Figure 3.9), often a comprehensive use of more than a variety of techniques, such as 180 degrees + rod, such as rope, plastic rod, reflective pieces, interactive devices and so on, can better achieve the effect of pop-up books. The above is for the main production of stereo books and the form of the designer to do a comprehensive classification of experience.

Choosing to use environmentally friendly paper and minimizing the use of eco-friendly adhesive in packaging has several vivid and specific benefits:

1) Reduced Resource Consumption: Opting for environmentally friendly paper means using more sustainable and renewable resources. This helps

reduce the demand for limited resources like wood, contributing to forest protection and ecological balance.

2) Lower Energy Consumption:Eco-friendly paper typically requires less energy to produce, reducing carbon footprints and environmental impact compared to traditional paper production.

3) Waste Reduction: Using minimal eco-friendly adhesive can decrease non-biodegradable materials in packaging. This aids in lowering waste volume, reducing the burden on landfills, and alleviating environmental pressure.

4) Enhanced Recyclability: Using less or no eco-friendly adhesive can increase paper recyclability. This promotes the recycling of paper, reducing resource wastage.

5) Health and Safety: Using minimal eco-friendly adhesive can minimize potential risks to product and user health. This is especially crucial for packaging related to food, medicine, and other products directly linked to human wellbeing.

6) Green Brand Image: Packaging designs rooted in environmental friendliness showcase a company's environmental responsibility and values, building a positive brand image. In today's consumer market with heightened environmental awareness, this image can foster consumer favorability and trust.

7) Inspiration for Creativity: Limiting adhesive use can ignite creativity among packaging designers. By employing only necessary eco-friendly adhesive, designers can explore new folding and packaging techniques, lending products a unique appearance and experience.

In summary, opting for environmentally friendly paper and minimizing ecofriendly adhesive usage in packaging can reduce resource and energy consumption, waste, enhance recyclability, protect health, establish a green brand image, and inspire innovative creativity. This approach benefits sustainable business practices and helps alleviate environmental burdens. Three delectable flavors dance harmoniously within every slice of our flower cakes. Let's embark on a journey through a sea of colors and explore a realm of unique culinary wonders.



Figure 3.10 Attempt 2 design drawing (green)

Source: Researcher

Green (Figure 3.10): Adorned with the Elegance of Matcha

Lightly drifting like green petals, the matcha flavor graces our flower cakes, exuding tranquility and freshness. The verdant green shade narrates a tale of serenity, while the taste paints a picture of nature's soothing embrace, making each bite a canvas of flavors.



Figure 3.11 Attempt 1design drawing (yellow) Source: Researcher

Yellow (Figure 3.11): Embrace the Timeless Charm of Original Flavor The original yellow hue embraces the classic taste of our flower cakes like a warm ray of sunshine. Every slice unfolds a sweet tale, enveloping you in an aura of timeless delight and evoking memories of sunny days.



Figure 3.12 Attempt 1design drawing (Purple) Source: Researcher

Purple (Figure 3.12): Unveil the Lavish Aura of Purple Sweet Potato Transforming the essence of purple sweet potatoes into blooming petals, our flower cakes exude a captivating hue. The deep purple color resembles tender petals, releasing a rich aroma with each bite, as if indulging in the fragrance of a garden in full bloom.

A flower is formed by combining a hexagon and six trapezoids. The middle hexagon is the center of the flower, and the outer six trapezoids surround it. The box can hold two flower cakes, and there are petals in the box. The product information is in the rectangular link section.

Utilizing a diverse color palette to signify distinct flavors in packaging design offers a range of advantages. Beyond aiding swift visual identification and effortless flavor differentiation for consumers, this approach simplifies decision-making and prevents choice overload. These color-coded associations not only enhance brand recognition but also evoke emotional resonances, creating a unique and memorable connection between flavors and colors. Additionally, this innovative packaging fosters intriguing narratives, captivating consumers and adding depth to their product experience. With the added convenience of non-verbal information communication, this approach transcends linguistic barriers and enriches global market accessibility, ultimately propelling your product's competitiveness and appeal.

Through testing, Attempt 2 has the possibility that can be developed and needs to be further explored.



# Chapter 4

## **Project development**

# 4.1 First edition model

In the first version of the model (Figure 4.1), the hexagon in the middle serves as the flower center, which is used to decorate and fix other boxes. A trapezoidal box can hold two flower cakes, so a total of 12 flower cakes can be held in the first version of the box.



Figure 4.1 First edition model

#### 4.2 Second edition model

In the first version of the model, six boxes formed a flower, each box put two flower cakes, the box is very heavy, the flower is too small, the center of the flower has no function, and the box without a lock is easy to slip. Modified in the second edition.

In the second model (Figure 4.2), the central flower was changed from a single flower to a bunch of flowers, and the trapezoid box was thinner than the first version. A trapezoid box could only hold one flower cake. The box in the center was enlarged to fit a flower cake and a lock was added to prevent the box from slipping off.



Figure 4.2 Second edition model

### 4.3 Third edition model

In the 2nd version of the model, a total of 7 flowers formed the box, the preliminary model passed, and the next step was to add color and content.

In the model of the third edition (Figure 4.3), leaves are added to the bouquet, colors are added to the box, and packaging information is added. A rose is the prototype, the color of the flower is red, and packaging information is on the side of the box. The number of packages is the same as that of the second edition, and a set of boxes can hold 7 flower cakes in total.



Figure 4.3 Third edition model

### 4.4 Fourth edition model

In the third edition model, the flowers are attached to the box by glue, which is not a good method, and using a lot of glue can be a burden on the environment.

In the fourth edition (Figure 4.4), there is no need to use glue, and the boxes are combined by splicing. Each small box can be combined by splicing, and the flowers change from a bunch to a single one. The fourth edition design is obtained after adjusting the color matching.

But the fourth version of the box is not very convenient for customers to open, and six boxes eat the flower cake inside. Need to continue improving.



Figure 4.4 Fourth edition model

## **Chapter 5**

#### **Final project**

#### 5.1 Interior box drawing

Employing a dominant red color scheme in packaging design exudes a heightened sense of elegance, skillfully accentuating the intricate designs of gifts and flowers. This profound shade of red not only bestows a sense of opulence upon the product but also directs attention towards the distinctive elements of gifts and floral patterns. It's a visual spectacle where the vividness of red dances, as if narrating an emotionally charged story. Beyond mere flavor selection, this encapsulates a profound emotional experience, catering not only to the taste buds but also to the soul, delivering delight and satisfaction.

Choosing not to use glue in packaging design offers several compelling benefits. Firstly, it aligns with environmentally sustainable practices by reducing chemical pollutants and minimizing the carbon footprint. This approach underscores a brand's commitment to eco-friendliness and resonates positively with environmentally conscious consumers. Moreover, it ensures product safety and consumer well-being, eliminating the potential release of harmful gases associated with some adhesives. This conscientious choice not only safeguards health but also enhances the brand's reputation. Additionally, the absence of glue streamlines production processes, resulting in cost savings and operational efficiency. Embracing glue-free packaging encourages innovation, sparking inventive methods of assembly that can set products apart in a competitive market. Altogether, glue-free packaging reflects a brand's forward-thinking ethos, championing both sustainability and consumer well-being while fostering innovation and economic advantages. The trapezoid box outside is formed by folding, do not need to use glue, because the flower cake is round and easy to break, so need to add a circular bracket in the trapezoid box, this trapezoid drawing can be rotated to form a stable bracket, rectangular paper to make the flower cake more easy to take out.



Figure 5.1 Trapezoidal box drawing

This paper-based pastry (Figure 5.1) rotating display stand not only showcases delicious floral pastries but also introduces an innovative feature for effortless retrieval. Its unique design seamlessly combines convenience and innovation, allowing customers to easily enjoy each piece of floral pastry. Through clever mechanical engineering and a rotating mechanism, customers can simply give it a gentle turn to bring the desired pastry to a comfortable picking position, saving time and effort without compromising the delicate appearance of the treats. This ingenious addition not only enhances user experience but also adds a touch of technological sophistication to the brand, making the presentation and enjoyment of floral pastries even more enjoyable and convenient.

The small hexagonal box (Figure 5.2)that serves as the center of the flower is assembled by means of clasps, without glue. It is located in the center of the assembly, which not only holds a flower cake, but also holds the surrounding trapezoid.



Figure 5.2 Hexagonal box drawing

The application of notch design on packaging boxes, without the use of glue, brings forth a multitude of advantages: ensuring secure sealing of products, enhancing anti-counterfeiting features, facilitating easy opening experiences, and adding aesthetic appeal and uniqueness to the packaging. Furthermore, this glue-free design contributes to environmental sustainability and cost-efficiency, providing users with a pleasurable unboxing experience. Additionally, it allows for customized designs that align with brand needs, infusing the packaging with distinct styles.

### 5.2 Exterior box drawing



Figure 5.3 Exterior Box Drawing 1

The first external box (Figure 5.3) does not need to be made of glue. The outside of the box has the brand and name of the flower cake, as well as a sticker. The six sides of the hexagonal box are the lids, which cover the inner box and hide it, making way for opening the box and seeing the flowers inside.

Such boxes cost very little and can be folded in transit(Figure 5.4), making them very easy to transport, taking up no shipping space, and not easily damaged in transit.



Figure 5.4 Exterior Box Drawing 2

Compared with the first external box, the second box can hold 14 flower cakes, and it is more luxurious at the same time. When it is closed, it is an ordinary gift box. When opened, you will first see the roses blooming using pop-up book technology. This gift box is made with a little eco-friendly glue and can be used after the flower cake is eaten.

#### 5.3 Project model



Figure 5.5 Exterior Box 1

When the box is not opened, the box looks very ordinary(Figure 5.5). When the box is opened layer by layer, it increases the sense of expectation. When the box is fully opened, you can see the flowers formed by the inner box of the flower cake, which gives people a sense of surprise. The whole set of boxes is glue-free, low-cost to manufacture, easy to transport and harmless to the environment when discarded.

The notch-designed packaging boxes offer an enchanting surprise as they are opened to reveal the delicate floral arrangements inside. The entire packaging ensemble is meticulously crafted from paper, eschewing the need for adhesive, resulting in a sustainable and eco-friendly solution. This innovative approach not only ensures a heightened unboxing experience, evoking a sense of wonder, but also guarantees the utmost care for the environment. The glue-free construction not only showcases a commitment to ecological responsibility but also simplifies transportation logistics. The cleverly designed interlocking components of the paper-based structure ensure secure enclosure during transit, minimizing any risk of damage and preserving the pristine beauty of the floral presentation(Figure 5.6).



Figure 5.6 Exterior Box 2

The second box is a gift box. When you open this box, you will first see the rose in the middle blooming, which gives you a sense of surprise. In the background of the rose is a postcard or letter paper, where customers can write their wishes and send them to others as gifts. There is a box (7 pieces) of flower cakes on each side, a total of 14 flower cakes.

The personalized customization of gift box packaging boasts multiple advantages, seamlessly blending exquisite aesthetics with individualized design to create an unforgettable and captivating impression. Its uniqueness doesn't solely lie in its lavish appearance, but also in the inclusion of elements such as elegant postcards and heartfelt messages, infusing the gift with profound emotional value. As a conduit of emotions, the postcard attaches personalized well-wishes, heartfelt sentiments, or cherished memories, imbuing the gift with a sense of commemoration. Beyond elevating ordinary items into meticulously prepared presents, this comprehensive design embodies the sender's distinctive care and significance towards the recipient. Concurrently, the distinctive feature of the gift box packaging is further accentuated when opened – a three-dimensional pop-up design unveils a rose blossoming, evoking a visual and emotional delight. This meticulously crafted element of surprise heightens the overall gifting experience, rendering it indelibly unforgettable and endowing the gift with a distinctive and enduring charm. Throughout this process, encompassing exterior allure, intrinsic essence, emotional depth, and meaningful intent, the myriad benefits of personalized gift box packaging customization resonate, ultimately enhancing the significance and value of the gift (Figure 5.7).



Figure 5.7 Project model

All the packaging design in this project uses environmentally friendly materials, which will not cause harm to the environment after being discarded, fully displaying the characteristics of flower cake. The overall shape of the box is dominated by flowers, which makes the box innovative in shape and increases the good memory brought by packaging to customers. Let the flower cake on the packaging can also arouse the customer's purchase idea.

#### **5.4 Conclusion and prospect**

Conclusion: My packaging design goes beyond mere surface embellishment; it is a creative embodiment that blends multiple elements, endowing products with profound significance and lasting impressions. Through meticulous design, I have successfully merged aesthetics, environmental consciousness, innovation, and emotional elements, resulting in a distinctive packaging approach. This design not only gratifies consumers visually but also resonates with them emotionally, thereby enhancing product awareness and brand image.

Future Outlook: Looking ahead, I will continue to be driven by innovation, exploring new dimensions in packaging design. Firstly, I will persistently prioritize environmental sustainability, delving into more eco-friendly materials and design methodologies, infusing the packaging with an abundance of green elements. Secondly, I will delve deeper into understanding consumer needs and preferences, introducing personalization and customization into my designs to cater to diverse demographics and intensify their interaction with the brand. Additionally, I will further emphasize the characteristics of local cultural products, ingeniously incorporating the unique charm and traditional elements of the region into the packaging design. This approach not only captures consumers' attention but also spreads awareness and appreciation for exceptional ethnic traditions.

In conclusion, my packaging design serves as a conduit for transmitting emotions and reflecting values. In the journey ahead, I will persevere, innovate incessantly, and craft enriching experiences and memories for both brands and consumers. I am confident that through relentless dedication and boundless creativity, my packaging design will stand out uniquely within the industry, becoming a robust pillar of support for brands, while also contributing positively to the preservation and advancement of local cultures.

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