Discussion on Green Express Packaging

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Abstract. With the continuous development of electronic commerce, the business volume of online shopping is increasing year by year. The quantity of rubbish brought by express package also cannot be overlooked, which will bring serious environmental pollution and waste of resources. At present, the relationship between economic growth and resources, environment and population is not in harmony, so people begin to reflect on it and devote themselves to saving resources. For the courier-related companies, from a series of activities of express delivery activities, striving to develop green express packaging will greatly change our lives and bring a totally new experience. The thesis analyzes the problems of the express package, then puts forward the solution of the problem that results in wasting of packaging resources. The packages of the express are designed. The countermeasures for the recycling of express packages were put forward in the end.

1. Introduction

With the hot development of online shopping, express delivery industry has become a new industry in recent years, its development momentum is relatively rapid, and has been maintaining the high popularity of the industry. More than 20 billion deliveries were completed in 2016, according to data, with a steady growth rate. Under the development in recent years, the business volume of express delivery industry has increased by several times, and the corresponding revenue of express delivery enterprises has reached more than 100 billion yuan each year. The enthusiasm of online shopping has inspired the development of express delivery industry, especially in Double 11 shopping carnival, the turnover is as high as tens of billions on that day, the number of raw express packages is also as many as hundreds of millions, the corresponding express packaging volume is also rising, the packaging garbage is also incalculable.

2. Analysis of the existing problems of express package

2.1. Waste of packaging resources by express delivery
The report on the current situation and Trends of Green Packaging in the Field of Express delivery in China shows that about 3.2 billion woven bags, 6.8 billion plastic bags, 3.4 billion envelopes, 3.7 billion boxes and 330 million rolls of tape were consumed in more than 4.8 million tons of packaging waste. According to the forecast, it will reach 50 billion pieces by 2018. According to The rookie network, the average annual package mileage is 43000 kilometers in 2016, equivalent to the annual shopping package of every chopper party around the world. In the face of such huge data, we have to realize that express packaging has produced a huge waste of resources and seriously damaged our environment.

2.2. Environmental pollution of express package
Now the express delivery enterprise to the package box recycling is not perfect, the recovery is not a lot, the plastic bag is not worth mentioning. Because plastic bags are almost always torn apart with violence and have no value for reuse. In China, the number of plastic bags and packing box is amazing in the courier packaging industry, so the environmental problem is very serious. The annual packaging tape in the production process, will produce 2800 kilograms of solvent VOCs (gas burning would form haze) even if the landfill, natural degradation of 100 - 150 years. At the same time in the post-processing process, dumping adhesive tape and plastic bags will also destroy the environment. The main ingredients of tape and plastic bags are polystyrene, which takes more than 100 years to break down in the soil, it can have bad effect on the soil and the surrounding water quality.

2.3. Lack of related policies and regulations in express packaging industry
At present, China's express packaging lacks unified industry packaging standards, there are no relevant regulations and policies on packaging requirements, and the package of express delivery industry also does not have the strict system standard, leading to poor quality of packaging materials. The relevant departments also lack quality inspection of packaging materials in express delivery industry. Therefore, a variety of packaging materials will cause great damage to the environment. Although the business volume of express delivery industry continues to grow in our country, the quality of express package has not been improved effectively, as a result, appearing excessive packaging and packaging quality phenomenon. The phenomenon of excessive packaging and unqualified packaging quality needs to be issued by relevant departments, and strengthen the supervision of packaging materials for express delivery.
3. The root cause of packaging resource waste

3.1. Weak consciousness of recycling
Nowadays, the frequency of receiving express delivery is far greater than sending express delivery. When sending express delivery, express points seldom ask for packing fees, so we do not have the idea of recycling. In addition, express packaging through layers of transport, the surface is covered with floating ash, consumers feel extremely unclean, early throw early finish, long time down, accumulated habits difficult to change. The courier company regards courier to consumers as the final link, and there is no awareness of packaging recovery, let alone increased promotion of packaging recycling.

3.2. Disadvantages of express package
Excessive packing. For example, the packaging box of moon cakes has a beautiful appearance, three layers inside and three layers outside. But you open the box, there is a very small moon cake in the box, a very small cosmetic, in order to prevent loss in express delivery, wrap the plastic foam around, and expand its volume. Then packed into the packaging box, some fresh goods require heat preservation and collision prevention, the delivery of goods has been packed many layers, couriers will receive another layer, some packaging is heavier than the commodity.

Tape winding is unreasonable. Some businesses, in order to make the packaging of the boxes more solid, wrap the tape around the boxes several times, thus avoiding damage and customer complaints. At the same time, the cost of tape is low, so merchants don't care about the rational use of tape.

3.3. High cost of packaging recycling
The continuous emergence of express delivery enterprises, making express delivery industry fierce competition, profit gradually reduced. However, the recovery of express packaging needs to invest a lot of manpower, material and financial resources, enterprises need to set up a recycling station, arrange personnel, vehicles and warehouses to transport the storage of recycled express packaging. The estimated cost has far exceeded the cost of purchasing packaging directly, so the willingness of enterprises to recover packaging is low, which leads to the low recovery and reuse of packaging, which makes it more difficult to recover.

4. Design and reuse of Express package
Figure 2 is a new type of express box, which makes the opening of carton into zipper type. It not only opens easily without any auxiliary tools, but also reduces the use of transparent tape. In addition, the packaging of cartons can be slightly changed through this design, to promote the recycling of express boxes, to add additional zipper cutting lines on express packages, to tear them up along the marking lines after receiving the express boxes, and to make the discarded box into a container.

Many express delivery companies in order to save the cost of the use of low-cost packaging, not pressure, easy deformation. Fig.3 shows that two layers of U or V corrugated paper, it have weak compressive capacity. During the transportation process, the packing box is easily deformed and the package inside is damaged, because the uneven road and the extrusion of the goods. Faced with this
flaw in corrugated paper, some researchers designed honeycomb cardboard, with a hexagonal grid between the upper and lower epidermis. The purpose of the design is to improve the pressure resistance and buffering power, to prevent the breakage of the package effectively, to protect the integrity of the outer packaging, to further improve the return of the express package and revenue utilization rate during the transportation process.

![Corrugated paper and honeycomb board](image)

As shown in Fig.4, the personality collection cabinet classifies the express package by shape and size, according to their hobbies or the room as a whole environment, the use of boxes together with vertical bonding can be made into a shoe rack, children's toy storage cabinets, personality bookshelf and simple wardrobe. In the present home, the storage cabinet of paper structure appears to be particularly conspicuous and eye-catching, and in the white wall, the light brown paper cabinet appears solemn without disobeying peace, at the same time, it can also highlight the master of the hand of the mind.

![Individual shoe cabinet and bookshelf](image)

5. Countermeasures for Recycling and Utilization of Express Packaging

5.1. Step up publicity
From the perspective of social sustainable development, green logistics is the inevitable trend of the development of logistics industry. At the same time, it has a broad development prospects, so it is imperative to step up publicity. We can use Star effect to produce Express package recycling and utilization as the theme of public interest video, appeal to the whole society to pay attention, participate together. The video can be played on buses, school restaurants, and LED screens outside shopping malls, it also can be played on some video apps, such as Microblog, fast hands and seconds to attract more attention.

5.2. Perfecting the incentive Mechanism of Express package Recycling and Utilization
Express delivery points can encourage the sender to handle individual courier cards, and contribute the box to the recipient for integral accumulation, such as 100 points for a package box; for the recycling of plastic bags, certain rules must be formulated. Plastic bags must be removed from the mouth with a knife
cut, in order to recycle again, (a plastic bag 50 points). Then swipe credit card points, draw prizes for a quarter or half a year, or when sending couriers express, they can exchange points for packing boxes, which can satisfy the circular utilization of express packages, it also protect the environment. In addition, we can work with the Ant Forest in Alipay, to create an exclusive QR code for the ant forest. As long as you contribute to the packing box, you can generate a certain amount of energy the next day, and accumulate energy to contribute to desert management in the western region. This not only meets the ant forest promotion and the circular use of express packaging, but also protects the environment.

5.3. Selection of New Green Packaging Materials
In express packaging, cartons, tape and plastic bags are the most widely used, in the use of new materials, we can consider from these three aspects.

We can apply plastic bags and tape to starch-based degradable packaging materials, it is mainly produced by the use of starch in natural photosynthesis. Starch does not cause damage and pollution to the environment, air and soil. At present, starch degradable packaging materials are mainly used in food, medicine and daily goods packaging, which are closely related to our daily life. This is also one of the main directions for the development of green packaging materials in the future.

For paper packaging, pulp molding packaging materials will be a better choice. It is mainly a packaging material that uses discarded products and fabric fibers as the main raw materials, which can be adsorbed on special moulds, then shaped, and formed after drying and cooling. Because the use of raw materials is waste paper and plant fiber, it fulfills utilization of waste and saves resources, reduces the pollution of the environment to a great extent, and reduces the cost of input. It can also follow the principle of green packaging materials, so pulp molding packaging materials are the most green packaging materials. At present, pulp molding packaging materials are widely used in food packaging, medical equipment packaging and ceramic glass products packaging. Pulp molding packaging materials are the most promising packaging materials in green packaging materials.

5.4. Making new orders
The order is made into a QR code, the QR code printed on the box or packaging bag. Sorting process scanning QR Code for area tracking of goods. When the goods are received, the scanning QR code sends the pick-up information directly to the customer's mobile phone. If the customer does not pick it up within a day, you can scan the QR code for customer telephone information, then you can make a telephone noise. The QR code becomes invalid within a specified number of days after the goods have been picked up (for example, the QR code is valid within 10 days from the courier delivery to the customer picking up the goods, and the QR code is invalid for more than 10 days). The QR code failure can protect customers' information, prevent merchants from harassing customers by second phone calls, or send leaflets to promote products, while also greatly reducing the waste of paper.

6. Epilogue
The greening of express package is a systematic project, and it relates to the benefit of the whole supply chain, which depends on the community of interests. In recent years, the heat of sustainable development is high, and the public pay more attention to green conservation of resources. The study of express packaging will be the inevitable trend of the times, express enterprises should improve their own environmental protection intensive consciousness, at the same time, citizens should also strengthen their own consciousness of recycling, and work together for the development of society.

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