

Promotion Status and Implementation Method of Green Packaging in China

[Zhou Zhong, Xiao-peng Peng, Wen-fang Peng]

Abstract—To Solve the problems that green consumption idea lag behind, green packaging implement difficulty, packaging waste pollution rising in China. Green packaging design was analyzed by 4 methods including literature summarizing, market researching, theoretical analyzing and practice verifying, and adopted other countries' experience of green packaging development for reference, researched the technology and design of green packaging. By that, this paper expound the current situation of green packaging design in China, analyse why China is sluggish in the development of green packaging, and put forward the development methods of green packaging from 5 aspects: diagnoses, legal construction, moral propaganda, scientific research, design innovation. It shows that only propaganda is not enough for green packaging, a series of supporting methods and advanced design idea is indispensable. Green packaging must be Supported by economic benefit and government investment, and be carried out Steadily and orderly.

Keywords—Packaging Engineering; Green Packaging; Environmental Protection; Implementation Methods

I. Introduction

“Green Packaging” originated from Our Common Future of The World Commission on Environment and Development of UN in 1987. It means the packaging that has no harm to ecological environment and human health, can be repeatedly used and recycled, and conforms to sustainable development strategy^[1]. In Jun 1992, United Nations Conference on Environment and Development also passed Rio Declaration on Environment and Development, and 21st Century Agenda, etc, which raised a green tide taking conserving ecological environment as the core in worldwide scope^[2].

II. Analysis on the Concept of Green Packaging

A. Definition of Green Packaging

Technically speaking, green packaging means environmental-friendly packaging taking innocuous substance as raw material, easy for recycling, which is also degradable and pollution-free.

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Its concept contains two aspects: one is environmental protection, the other is resource conservation. Environmental protection is the core, and resource conservation is the measure. Generally speaking, green packaging should conform to the requirements of eco-environment protection in whole life cycle from raw material selection, product manufacturing, usage, and product abandonment^[3].

B. Objective and Significance of Promotion on Green Packaging

(1) Green packaging can transform extensive economic development mode, optimize economic structure, and find new economic growth point from green industry.

(2) Green packaging can improve packaging quality, simplify packaging process, decrease packaging cost, and reduce environmental pollution and resource waste while meeting economic development requirements.

(3) Green packaging can create an atmosphere of concerning and treasuring resources by everyone, driving green design trend of other products besides packaging industry, finally bringing positive influence on environmental protection[4].

(4) Promoting green packaging also has played a promotive role on the development of design industry. Promoting green packaging can let us reacquaint with the role of design industry, and find correct development direction for modern design.

III. Promotion Status of Green Packaging in China

Due to the emergence of domestic environmental protection undertakings and the requirements of commodity export, China began to pay attention to green packaging since 1980s, and it has certain influence up to now. The utilization rate of environmental-friendly packaging has increased year by year, and part of products also reached international advanced level, possessing good sales in international market[5]. However, relative to lots of overseas areas, the pollution of packaging waste is still very serious, a great number of enterprises have insufficient impetus in selecting green packaging, overflowing with the phenomena of excessive packaging and false packaging. The main reasons of this situation may be summarized as follows:

A. High Production Cost, Less State Subsidy

As green packaging has high technological contents, strict material requirements, and more operation procedures, its

production cost is obviously higher than shoddy packaging. The subsidy of state in this aspect is less, and the higher cost needs to be completely borne by manufacturers and consumers, resulting in the situation that enterprises are not willing to produce, and consumers are not willing to use, thus market promotion has numerous difficulties.

B. Insufficient Talents and Scientific Research Strength

Green packaging is not as simple as following original packaging mode or adopting natural materials, it must be supported by high-new technology and high-end design. However, as the economic benefit in researching green packaging is difficult to have, there are fewer talents that really conduct research in this aspect. In addition, the state has insufficient scientific research input on packaging design[6].

C. Low Social Consciousness in Energy Conservation and Environmental Protection

Due to the cause of social development, China's green consumption started late, and the influence is weak. According to encyclopedia of Baidu in Mar 2010, over 80% of consumers in Europe and America place environmental-friendly shopping at the first place, and were willing to pay higher price for environmental protection. However, the survey of Social Survey Institute of China (SSIC) in 2011 show that only 54% Chinese were willing to use products with green packaging[7].

IV. Implementation Method on Green Packaging Design

Product packaging has close correlation with environmental protection and economic sustainable development. We should conscientiously research the implementation method on green packaging, insist on low carbon principle in the links of raw material, design, manufacturing, transportation, usage; and carry out recycling taking "5R1D" as concept, striving to achieve material reduction, resources conservation, high efficiency, and harmlessness[8]. Generally speaking, green packaging is to create "small quantity and refined" green design culture. The implementation method on green packaging design is shown in Figure 1.



Figure 1. The implementation method on green packaging design

A. Conducting More Survey and Analysis, Linking Theory with Reality

Currently, lots of researches on green packaging are blindly, and the "achievements" exist in name only, which cannot be applied. Such "research" not only cannot exert role, but also waste manpower and material resources. All laws and technologies should be based on survey and analysis. Market requirements and enterprise difficulties should be understood extensively via surveying consumption market and visiting packaging enterprises; and the feasibility of theory to be used should be analyzed conscientiously. and then problems can be solved authentically.

B. Strengthening Legal Construction, and Perfecting Industry Standard

Under the situation of environment deterioration, various countries in the world have successively promulgated the laws and regulations on packaging. China must establish and perfect the laws and systems on energy conservation and environmental protection referring to international experience, guarantee the effective implementation of green packaging, and provide legal support to low-carbon economic development.

In legal construction, we should be more clear and explicit on the detailed rules and regulations targeting at the requirements of international trade, strengthen publicity and execute powerfully. In standardization construction aspect, we should refer to the developed countries, and guide the packaging of export commodities combining with our national conditions, so as to adapt to the requirements of international market.

C. Strengthening Publicity and Education, Advocating Green Consumption

Consumers are the demanders and performers of green packaging. Therefore, in the promotion of green packaging, except government policy and enterprise technology, the consumption habit of the public is also crucial. We need to carry out a series of activities including knowledge popularization, technical training, and production guidance on green packaging to various factories; and regularly conduct multiple forms of green consumption concept publicity to various communities and organizations; and vigorously advocate the concepts and contents on environmental protection including pollution reduction, resources conservation, and reusing. Moreover, we can also advertise on media such as newspapers, TV, and magazines; grant environmental-friendly shopping bags and classification dustbins free of charge.

D. Enhancing R&D Strength, Protecting Intellectual Property right

Green packaging material is the key point of implementing green packaging. Developing green packaging is crucial to accelerate the development on new material, new technology, and new product. To achieve rapid development in green packaging industry, China needs to enhance scientific research strength, and offer appropriate support to scientific research work of packaging enterprises in the aspects such as environmental governance, taxation, and credit loan. In addition, China should help enterprises to form benign mechanism in R&D and absorption on advanced technologies[9]. Meanwhile, government needs to perfect the relevant laws on patent protection, so as to stimulate the enthusiasm of enterprises in development and creation.

E. Upgrading Design Capability, Increasing Artistic Connotation

In the promotion of green packaging, the role of design is significant. In transportation packaging design, we should research on how to embody secure, environmental-friendly, and optimization concept in structural design; apply adaptable, reusable, and recyclable packaging structure [10]. In sales packaging design, we should use more excellent creative design to meet market requirements, research on how to increase artistic content via the elements such as characters, patterns, and colors, so as to embody green consumption concept while subtly improving commodity value.

v. Conclusion

Currently, ecological deterioration has reached shocking extent. Green packaging basing on ecological concept shall certainly prosper with each passing day. Packaging industry shall accept new design strategy and method inevitably. In addition, packaging industry should achieve the target of the coordination between economic development and environmental protection, as well as the common development between product marketing and green culture. In future, a new step shall be reached in the aspects including green design concept upgrading, green packaging material development, green packaging technology promotion, and packaging waste recycling. A new production and consumption era with sustainable development has come.

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