



Environmental Packaging in Trade Logistics and Innovative Entrepreneurship Based on Internet Marketing Online Research and Communications

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ABSTRACT

In the paper the eco-trends in packaging and the Ukrainian market of organic products are analyzed. A scientific and practical approach to the development of environmental packaging in Supply Chain Management is formed, the approach is based on the results of the Internet marketing online research. It takes into account the evaluation of consumers' (marking, ergonomics and convenience, aesthetic, reliability and durability, communication), manufacturers' (economic, transportation and storage, environmental); intermediaries' (transportation and warehousing, marking, ergonomics and convenience) perspectives, considering the principles of eco-oriented logistic management in trade and innovative entrepreneurship.

Keywords: Environmental packaging, Innovative product, Marketing research, Online survey, Logistics, Supply chain management, Legal aspects of packaging

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1. Introduction

The 21st Century is a century in which world corporations and manufacturers are exploring not only product demand, competitive advantage and market niches, but must also be environmentally responsible. Ecology is one of the most discussed topics, one of the United Nations (Sustainable Development Goals) goals and one of the leading questions defined by every second firm before launching new products.

By doing marketing research before launching innovative products a company reduces the potential expenses and provides increasing of consumers number with the supporters of environmental products. In addition, manufacturers compete for the attention and commitment of consumers by trying to make best use of the elements of the marketing mix: product, price, place and promotion. Along with this important elements of the marketing complex today it is considerable to include packaging. Packaging is usually seen as a part of product, promotion and placement policies, but lately, some researchers have identified it as another independent "P" rather than a component of the traditional mix. Packaging makes transportation of the product easier, as well as product movement in the market and also helps with the understanding and acceptance of the product and its manufacturer by consumers, with underlining the distinctive features of the product, helps to create the impression of the product. In terms of product promotion, packaging is an effective method of promoting a product that facilitates its sale without any change in qualities. There is a certain link between the packaging and the psychological process of buying and selling. The average buyer takes into account the peculiarities of the packaging, especially its color, shape, size. Creating attractive packaging is one of the most effective ways to satisfy a demanding consumers and encourage them to buy this particular product among dozens of competitors. In view of the above, the manufacturer simply cannot deny the importance of packaging in the process of circulation of goods.

Leading internationally popular brands create tons of non-recyclable waste every month, plastic in the oceans will soon be equal to the area of countries, and environmentally responsible consumers are refusing to use plastic bags and disposable tableware every day. Therefore, manufacturers are interested in meeting current trends and requests. That is why it is quite relevant to define the manufacturer's interest in meeting consumer demands through market research for environmental packaging and producing products as a result that respond to the needs of the environmentally responsible population.

Each year, the methods and approaches for marketing research on the appearance and functionality of packaging change. On the one hand, this is due to advertising as one of the functions of packaging, on the other – due to an increase in the number of single-use items. The theoretical foundations and designing of packaging are presented in the works of such authors as Auliandri T., Armanu, Rohman F., Rofiq A. (Auliandri et al., 2018), Krykavskyy Ye., Kuzio N., Kosar N. (Krykavskyy et al., 2018) and others. Packaging as an element of product movement in trade logistics and supply chain management is investigated by such scientists as Bowersox D., Closs D., Cooper B. (Bowersox et al., 2019), Krykavskyy Ye. (Krykavskyy, 2016), Szymonik A. (Szymonik, 2016) and others. The problems of assessing the visual impact on the buyer of color and color combinations, as well as the psychological role of the graphic image and the perception of the type of composition on the packaging are investigated by such scientists as, Lialiuk A., Kolosok A., Skoruk O., Hromko L., Hrytsiuk N. (Lialiuk et al., 2019), etc., communication influence of packaging is studied in the works of Agariya A., Johari A., Sharma H., Chandraul U., Singh D. (Agariya et al., 2012), Kotler F., Armstrong G. (Kotler et al., 2017), Sinha R., Naveed M. (Sinha et al., 2015), etc.

Principles of marketing researches are considered in the works of such scientists as Kirnosova M. (Kirnosova, 2011), Voynarenko S. (Voynarenko, 2013), Yashkina O. (Yashkina, 2018) and others.

Researchers study different aspects of innovation management and offer practical solutions in various areas of innovative entrepreneurship (Babenko et al., 2019; Babenko et al., 2020; Shorikov et al., 2014, Illiashenko et al., 2019).

The study of competitive advantages at Ukrainian market due to eco-friendliness of products and

production technologies and consumer e-waste recycling behavior are investigated by Illiashenko S. (Illiashenko, 2012), Shevchenko T., Laitala K., Danko Y. (Shevchenko, 2019).

Considering that global globalization not only brings markets together and empowers collaboration between companies, but also makes it possible to jointly tackle the problem of disposable packaging and to implement more of recyclable packaging, nevertheless the question of developing an approach for research-based environmental packaging remains undecided.

So the main purpose of the article is to formulate a scientific and practical approach to the development of environmental packaging based on marketing research.

2. Materials and methods

Environmental packaging is governed by a number of legislative and regulatory documents in Ukraine. The legislation of Ukraine defines and regulates: legal, economic and social foundations of the organization of environmental protection in the interests of present and future generations (The Law, 1991); legal and organizational framework for providing consumers with information about food products in order to ensure a high level of public health protection and their social and economic interests (The Law, 2018); relations between consumers of goods, works and services and producers and sellers of goods, contractors and service providers of ownership's various forms, establishes consumer rights, as well as determines the mechanism of their protection and the basis of state policy in the field of consumer protection (The Law, 1991); ensuring collection, sorting, transportation, processing and disposal of used containers (packaging), economical use of raw materials and energy resources and environmental protection (The Order, 2001); basic terms and definitions in the field of packaging, types of its tests and marking (State, 1994), etc.

So packaging is a means or set of means to protect products from damage and loss, the environment from contamination, as well as the process of product circulation (State, 1994).

The main phases of marketing research are:

1. Analysis of the problems which the organization is facing and defining the goals and objectives of the study.
2. Specification of object and subject of the research.
3. Calculation of sample size and formation of its structure.
4. Clarification of the survey methodology.
5. Preparation of the questionnaire.
6. Determination of survey results.
7. Conducting of analysis of results, their systematization and interpretation.
8. Developing of recommendations based on the results.

Having analyzed the main advantages and disadvantages of the methods of collecting primary information (Samborskij et al., 2017; Yashkina, 2018), we conclude that the survey is the most appropriate method for analyzing the question posed, because it is relatively cheap, allows you to find out the opinion of the target audience and easily analyze the obtained results, use them in future activities; receive in-depth, detailed and truthful information (Marketing, 2009). With this survey method, we choose the Internet using the Google Forms application, which allows us to conduct surveys and organize the information obtained using graphs.

The sample size was calculated on the basis of (Samborskij et al., 2017) repeated selection, when each unit of research does not return after its registration and in the subsequent selection does not participate, that is, the same unit cannot get to the sample twice, which allows to better represent the general population, and therefore, it gives less error:

$$n = \frac{t^2 \cdot \partial \cdot N}{N \cdot \Delta^2 + t^2 \cdot \partial} \quad (1)$$

where n - is the sample volume;

t - is the normalized deviation (determined depending on the confidence probability of the result obtained);

δ - is the variance of the trait;

N - number of elements of the general population;

Δ - permissible error (most often used = 0.05) for marketing research.

The values of t and Δ are determined by both the tasks facing the researcher and the nature of the phenomenon being studied. The more reliable the results are to be obtained, the greater the probability should be.

The confidence interval in marketing research is usually 95-99%. Each of these values corresponds to a certain value of the normalized deviation of the estimate (t): $t = 1$ (for the confidence probability $p = 0.683$), $t = 1.96$ (for the confidence probability $p = 0.95$), $t = 2$ (for the confidence probability $p = 0.954$), which is most commonly used in marketing research, $t = 2.58$ (for confidence probability $p = 0.99$), $t = 3$ (for confidence probability, $p = 0.999$).

After the primary data has been collected, we begin to analyze and systematize the information obtained. The primary data is organized into meaningful information by editing, encoding and graphically presenting it. We use standard Microsoft Excel spreadsheets to analyze the data.

3. Results and discussion

3.1. Eco-trends in packaging and the Ukrainian market of organic products

One of the biggest problems of today is producing of goods in such quantity that the world's population cannot actually consume. From this it follows that tens of thousands of goods are sent to landfill, but not all of them are easily recyclable and environmentally friendly.

It is believed that eco-trends have come to us from the West. There they began to gain popularity in the late 60's. Eco and Organic fashion is fastest growing in Western Europe, North America, Australia and New Zealand. Global Organic Market volume is up to \$ 60 billion. In Ukraine, the heyday of eco-trends came in the 2010s and currently the market capacity is negligible. It mainly grows due to agricultural products: milk, meat and cereal products.

Since 2017, the organic segment of the world market has been developing most dynamically compared to other segments. For example, in the US, 40% of the population chooses organic goods. The agricultural area involved in Ukrainian eco-production is 270 thousand hectares (Eco Trends, 2020).

Optimal packaging for eco-products can once again underline a upright attitude to the world and nature. For such cosmetics, packages and boxes of bio-disposable materials are commonly used. But if the box is eco-friendly, that doesn't mean that it is easy to make it. The packaging for organic products is very carefully handled. A good jar, box or bottle helps to create an image of the manufacturer and make his product recognizable. One of the tendencies is the use of thick or recycled paper, cardboard. No less common are metal jars, tubes, or bags of decomposable plastic. Glass jars are also used, and natural wood packaging is becoming more common. As for the use of colors, natural shades that are close to natural in brightness are predominantly used for the packaging of eco-cosmetics. The most popular colors are: green, yellow, blue, orange. With the help of colors, the manufacturer tries to show that his products are natural and not harmful, made of natural components.

Environmental packaging for cosmetics is rarely red, black or gold, and the design rarely uses exquisite decorative elements. If packaging is supposed to be recycled, manufacturers choose paper bags or e-bags that can be reused later. Transparent cosmetic packaging made from natural fibers is practical and very durable. Also can be reused - for a new gift or to keep some little things. The main advantage of organic packaging is the possibility of their rapid recycle process and the absence of toxins during combustion.

Safe packaging materials do not harm people. Due to the fact that they are suitable for recycling, production is considered waste-free. The quality of the cosmetics is confirmed by a number of marks on the label. Among them, the most common are: ECOCERT, Soil Association, NaTrue, ICEA AIAB, BIO EcoCert, BDIH. If the buyer sees them on cosmetics, he can be sure that the product will only bring benefits. Foreign environmental packaging has some differences from what is produced in our country. In Ukraine environmentally friendly cosmetics is everything that is created on the basis of organic substances and compounds that bring maximum benefit to the human body.

But foreigners believe that eco-products are those that require minimal money for production and disposal. But the basic essence of the natural packaging is still the same. Both domestic and foreign manufacturers are trying to reduce the excess packaging, to create simple and clean shapes, to apply bright but natural dyes. The work of improvement of environmental packaging never ceases. Designers embody new original ideas and create true works of art. The use of lightweight natural fabric allows to decorate the box with intricate weave, ribbons and bundles make the packaging vintage. Weightless or dense fibers are widely used for creativity.

Often manufacturers use eco-motifs in the texts on the packaging and advertising, labels on the packaging, marketing positioning, packaging materials. Some manufacturers add eco-products to production, in order to expand the previous product range. Nowadays it is possible to find 4 marks on the Ukrainian goods: "organic", "eco", "bio" and "nature". They all mean nothing unless they have been pre-certified. In Ukraine, most goods are certified according to EU norms. Manufacturers receive it in order to export the product to Europe. Today, about 10% of Ukrainian goods are produced for export to the European Union. The mark of this certificate is a leaf from the stars on a green background. There are also national marks - a hexagon labeled "bio" (Germany), a green circle with a palm (Italy), a square logo with the abbreviation AB (France). There are also 2 other international marks. Mark "Demeter" - an organization whose requirements are higher than the EU certificate, and "Fairtrade", whose certificate confirms that no child and slave labor was used during production (Fig. 1) (Eco Trends, 2020).



Figure 1. International and national eco-marks

Those manufacturers who produce high quality products, but do not see the point of switching to organic agriculture, can display their "eco" image through packaging design. This direction is called "eco-design". Its main tools are: natural packaging materials (cardboard, glass, craft paper); packaging made with biodegradable polymers (indicating this); natural color palette with predominance of white, green and brown; pencil sketches and watercolor illustrations; handwriting fonts; Variations on the subject of green.

Some examples of eco-style packaging are shown on Figs. 2, 3 (Eco Trends, 2020).



Figure 2. Packaging design for self-care cosmetics TM Biossance



Figure 3. Design of olive oil packaging for Carpos TM, UK

The examples above show that environmental packaging not only helps to maintain our health and to preserve the environmental situation in the particular country and at the world, but also looks stylish and modern.

3.2. Marketing research on the development of environmental packaging

Accordingly, the purpose of marketing research on the development of environmental packaging is to determine consumers' attitudes towards it and to analyze their readiness for change.

According to (Voynarenko, 2013) the main advantages of using Internet marketing communications are: globalization (information from the Internet can be viewed anywhere in the globe); information (an opportunity for mobile operators at any time to carry out various marketing researches, to receive information about competitors and their products and services); convenience for consumers (the ability to use certain services at any time without leaving home, office); rapid adaptation to market conditions (ability to respond promptly to consumer needs and competitors' offers); reduction of expenses of the company for promotion of goods and services, brand of the company.

It is worth noticing that in the development of environmental packaging we survey consumers, because it is the consumer - the person who buys the product that provokes market demand. Only the commitment of the consumer to the brand and products of the company helps maximize profits.

The packaging of goods branch out further and further away from its former primary and paramount function - to keep goods from qualitative and quantitative losses during their storage and transportation, and becomes a complete communication tool between the manufacturer and the consumer, provides attention to the product and allows repeated and multiple using.

It is known that the most receptive to organic products are young people (most often they are innovators and want to try something new, follow the fashion and innovations) and the age group 35+ (interested in healthy lifestyle, not standing still, looking for opportunities to live in ECO style) ((Eco Trends, 2020). Therefore, the survey was conducted for this age group. Socially active people tend to prefer social networks, so the poll was held on Facebook using the google forms platform.

Therefore, according to a target audience (population of Ukraine aged 15 to 54 years), which is 22564981 people (Population, 2018), the sample size is:

$$n = \frac{2^2 * 0,5 * 22564981}{22564981 * 0,05^2 + 2^2 * 0,5} = 800(p)$$

To form the sample structure, we use the improbable (non-random) method - an arbitrary sample, which provides for its formation on the basis of convenience, is subjectively carried out from the standpoint of minimal time and effort of the researcher, availability of respondents.

For the online survey we have developed a questionnaire containing 3 blocks of questions: a block to determine the impact of packaging on consumers, a block to determine the attitude of consumers to environmental packaging and socio-demographic block. The online questionnaire was sent to the target audience on the social network Facebook according to the estimated sample data. The main results of the study are presented in Table. 1.

Table 1. Results of the online survey

Question	Results of the survey
Paying attention to the packaging of the goods	Yes – 88,9% No – 11,1%
Consumer interest in the information in the packaging	Always read – 53 % Time to time – 37% Rarely – 7 % Never – 3%
Good colors for packaging self-care products (blue, white, green, red, black, purple and yellow) with ability to choose several variants	White – 516 points Green – 356 points Blue – 338 points Red – 115 points Purple – 52 points Yellow – 35 points Black – 28 points
The impact of advertising on the purchase of environmental goods	Yes – 44,4% No – 24,4% Don't watch ads – 31,2%
The importance of environmentally friendly packaging	Important enough – 51,1% Have not thought – 33,3% Not important – 15,6%
Desire and ability to buy products in environmental packaging	Ready to pay more for environmental packaging – 38,5% Ready if the price difference is not more than 20 UAH – 61,5% Indifferently – 0%

3.3. Interpreting research findings and developing recommendations

The survey shows that consumers prefer the white, green and blue colors that are considered the most relevant for eco-products. In addition, it has been found out that for the formation of effective packaging it is necessary to take into account the requirements of the market, the legislation and be careful with the information presented on the packaging, taking into account the evaluation indicators for consumers, intermediaries and manufacturers of products.

Therefore, in continuation of previous studies (Bilovodska et al, 2010; Bilovodska et al, 2016; Bilovodska et al, 2017; Gryshchenko et al., 2020) we can underline the following groups of indicators: from the standpoint of consumers (marking, ergonomics and convenience, aesthetic, reliability and durability, communication); manufacturers (economic, transportation and storage, environmental); intermediaries (transportation and warehousing, marking, ergonomics and convenience) (Table 2).

In order to increase consumer demand for the product and its bright representation in the market environment, it is necessary to develop packaging with a reasonable price that will meet consumer

expectations.

In EU countries, standards for packaging materials are established and monitored at the national level. The volume and weight of the packaging must be kept to a minimum necessary for the preservation of the product, the minimum quantity of harmful substances may be allowed, the packaging must be reusable and, after the end of its service life suitable for recycling (recycled into commercial product or recyclable for energy purposes), use of primary raw materials should be reduced. The current system of waste collection and remaking and the value of the population contributes to this. In Ukraine, however, the only incentive for greening packaging can be its accurate positioning, which increases the competitiveness of goods (Kirnosova, 2011).

Therefore, after considering the above and analyzing the results of the study, we can determine parameters for the packaging.

Table 2. Indicators of integrated evaluation of packaging in trade logistics and innovative entrepreneurship

Group	Indicator
<i>According to the consumer's perspective</i>	
Marking indicators	information on date of manufacture
	information on the composition of the food product
	information on the energy value of the product
	information on the nutritional value of the product
	information on the expiry date with the package closed
	information on the expiry date with the package open
	information on status and special treatment for the product
	information on specific product properties
	information on the volume of product
	information on storage conditions with the package closed
	information on storage conditions with the package open
	manufacturer's trade mark and product name
	inscriptions of informative character
	information on the name and address of the manufacturer
	information on the conditions of consumption
signs that confirm the conformity of products to standards	
Ergonomics and convenience indicators	availability and ease of use
	possibility of re-closing
	possibility of reusable
	placing information on the packaging
	a way of presenting information on the packaging
	weight of the package
	conformity of packaging to the specificity of the product
convenience of packaging	
Aesthetic indicators	packaging form and external packaging design
	graphic or photographic image on the packaging
	aesthetic impact on the consumer
	color, design, style
Reliability and durability indicators	resistance of the packaging to damage (damage, fall, shock, wetting, etc.)
	resistance of the package to tipping
	tightness packaging
	protection of the product from the influence of the environment
	ensuring the preservation of the original product properties
Communication indicators	the presence of labels of an advertising nature (use of packaging for promotional purposes)
	availability of additional incentive labels and promotional information, raffles

	and more
	compliance with the packaging concept positioning
	compliance of the packaging with the distribution conditions
	brand demonstration (packaging demonstrates brand)
	image formation
	formation of persistent perceptually
According to the manufacturer's perspective	
Economic indicators	the cost of manufacturing
	manufacturability
	the cost of disposal
Transportation and warehousing indicators	suitability and adjustability of packaging for transportation (compatible with existing transport taxation)
	suitability and adjustability of packaging for warehousing (compatibility with existing lining, the ability to store goods in boxes, pallets, etc.)
	ensuring the possibility of forming rational parties for transportation
Ecological indicators	the possibility of disposal and recyclability
	absence of destructive negative impact on the environment during disposal
	ensuring minimization of food waste
According to the intermediary's perspective	
Transportation and warehousing indicators	ensuring the possibility of forming rational parties / units for storage
	ensuring efficient loading and unloading operations
	suitability for rational stowage during storage, transportation etc.
Marking indicators	information on the expiry date with the package closed
	information on storage conditions with the package closed
Ergonomics and convenience indicators	the clarity of the labeling inscriptions
	convenient placement of labeling marks
	a way of presenting information on the packaging
	convenience of packaging

3.4. Development of innovative product packaging in trade logistics

Development of packaging of innovative hair care products TM «Dr. Sante» shampoo, conditioner and hair mask is carried out on the basis of the approach proposed in previous studies (Bilovodska et al, 2016; Bilovodska et al, 2017) with the following parameters:

1. *Color scheme.* White, green and blue are the most acceptable for the consumer, so we will pack in these colors.

2. *Material.* We offer several product packaging options. The first is a package that is made of easily recyclable plastic, the second is a plastic that can be reused in the household.

3. *Form.* As a basis we will use the standard packaging forms of TM “Dr. Sante”, but we offer a shampoo with a variable dispenser to save bottles.

4. *Fonts.* According to the rules on the package there should be no more than three fonts, so we adhere to this rule, so as not to overload the packaging and give all the necessary information according to table. 2.

5. *Capacity.* Let's develop 300 ml shampoo, hair mask and salve - 150 ml for easy reuse and larger sizes (500 ml for shampoo and 200 ml salve and hair mask).

6. *Practicality.* Firstly, the capacity will help us in this matter, because it is convenient to bring products of this size with you, for example, on a trip, to reuse, by pouring new shampoo / salve / mask, as well as a dispenser on shampoo.

7. *The cost of packaging.* We calculate the cost of the package (Packaging, 2020) in order to analyze whether its expedient to create (for example, a hair mask).

$$C_p = C_m + C_{mn} \quad (2)$$

where C_p - the cost of packaging;

C_m - cost of the material;

C_{mn} - the cost of manufacture.

$$C_m = H \times W \times T \times P_m \quad (3)$$

where H - is the height of the package;

W - is the width of the package;

T - is the thickness of the package;

P - price for 1 kg of material

$$C_{mn} = \frac{C_{eq}}{N_p} + \frac{C_{el} + C_l}{N_p}, \quad (4)$$

where C_{eq} - cost of equipment;

N_{eq} - equipment resource in the number of packages;

C_{el} - the cost of electricity consumed by the equipment;

C_l - labor costs;

N_p - the number of packages produced.

$$C_m = 15 \times 8 \times 5 \times 89,25/10000 = 5,37 \text{ (UAH)}$$

$$C_{mn} = \frac{3000}{200000} + \frac{0,2 \times 8 \times 22 \times 0,25 + 4000 + 720}{40000} = 0,13322 \text{ (UAH)}$$

$$C_p = 5,37 + 0,13322 = 5,5 \text{ (UAH)}$$

We see that the cost of producing the packaging is low enough and quite acceptable for the company and the consumer, because the hair mask will cost no more than 5.5 UAH because of the new packaging option, but since it can be reused and it is environmentally friendly, it has much more benefits.

8. *Target audience.* Since we have conducted research among young people and the 35+ age group who are interested in this particular packaging, we believe that environmental packaging will be of interest to this age group. However, older people in the future may also become the target audience, as most of the population are followers.

The proposed model of the packaging for the product line is shown in Fig. 4, the product line will be called "Organic life", designed in accordance with the results of the market research in accordance with the requirements of consumers and taking into account the cost of its production.



Figure 4. Environmental packaging of hair products TM «Dr. Sante »

An example of a packaging made with the recycled paper and an alternative packaging is shown in

the Fig. 5.



Figure 5. Environmental packaging for a range of hair care products

Two types of environmental packaging design offered for TM “Dr. Sante” meet consumer demands and environmental requirements put forward by the company and responsible consumers. The development of this packaging is effective, the product will have significant competitive advantages and will set an example for other companies.

4. Conclusions

According to the results of the research, a scientific and practical approach to the development of environmental packaging in trade logistics and innovative entrepreneurship has been formed, the approach is based on the results of the marketing research and, unlike the existing ones, takes into account the evaluation of consumer’s, producer’s and intermediary’s indicators, considering the principles of eco-oriented management, the main of which are:

1. *Focusing on the combination of market needs and public values.* Meeting the needs of a particular group of consumers should not interfere with the public needs.
2. *Priority of ecological production of packaging over usual.* Support of innovative ecological climate in the enterprise.
3. *Integration of packaging management into the eco-marketing system.* Comprehensive interconnected solution of environmental issues in the enterprise, systematic approach to management.
4. *Formation of responsible consumption by providing environmental benefits.* Formation of demand for safe products, fulfillment of additional functions of ecological packaging - social, propagandic, regulatory.
5. *Public benefit.* Adherence to the principles of social and ethical marketing.
6. *Integration of scientific and practical approach.* It is advisable to involve not only commercial but also scientific organizations in the process of the development of packaging, strengthening the link between the scientific and industrial spheres, facilitating the creation of new competitive packaging materials.
7. *Timeliness.* Prevention of environmental problems, anticipation of changes in consumer values.
8. *Harmony.* Conformity of packaging to the products of the enterprise.
9. *Sequence.* Support of environmental responsibility of the enterprise.
10. *Efficiency.* Compliance with the economic goals of the enterprise. Packaging management aims to increase sales, generate revenue.

The approach to development of environmental packaging based on marketing research that was proposed can be the basis for the methodology for the formation and selection of the most objective strategic alternative in packaging of innovative entrepreneurship and logistic trade. Also prospects for

further research in this area are the practical application of the proposed approach and the development of recommendations for enterprises.

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