

Stages of packaging creation: from idea to store shelf

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Abstract. The article is devoted to highlighting the main stages of creating packaging as an element of product and marketing design. The purpose of the article is to identify and systematize the main stages of creating packaging as an integrated element of product and marketing design. The work used general scientific methods: analysis, generalization, systematization and comparison. The results of the study show that the process of creating packaging includes four consecutive stages. First, the functional purpose is determined - technical, operational and protective properties of the packaging, its ergonomics and compliance with logistical requirements. Then, consumer behavior is analyzed, which affects visual and tactile solutions: packaging should be understandable, attractive and adapted to the expectations of the target audience. At the environmental stage, materials that meet the principles of sustainable development and innovative communication formats are considered. The final stage is the integration of packaging into the brand's marketing strategy, where it performs the functions of differentiation, information and support of brand identity. Special attention is paid to the practical implementation of the proposed model using the example of confectionery packaging design. It is concluded that packaging is becoming a tool for emotional interaction with the consumer, combining aesthetic appeal with functionality and environmental responsibility. The role of packaging as a strategic brand resource capable of forming sustainable loyalty, strengthening advertising messages and maintaining the integrity of visual communication is also emphasized. It is an important component in ensuring the competitiveness of the product in the market, especially in conditions of high product range saturation and growing environmental expectations from consumers.

Keywords: packaging, consumer, design, ecology, marketing.

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Introduction

In today's highly competitive consumer market, packaging plays not only the role of a protective element, but also becomes a key communication tool between the brand and the buyer. It forms the first impression of the product, transmits informational and emotional signals, influences the purchase decision and reflects the company's values. At the same time, the importance of environmental, ergonomic and aesthetic characteristics of packaging solutions is growing, which necessitates a systematic approach to packaging development - from the stage of determining its functional purpose to integration into the marketing strategy.

The relevance of the study is due to the need for a comprehensive analysis of all stages of packaging creation as a multifunctional object that combines technological, design, environmental and communicative components. Packaging is no longer exclusively a means of storing or transporting products - it is transformed into a strategic brand resource that can influence consumer behavior, build trust and promote sustainable development. Such an approach requires a deep interdisciplinary study that includes marketing, design, materials science, ecology and consumer psychology.

Analysis of recent scientific research and publications. The issue of the stages of packaging creation - from idea to store shelf - is not sufficiently covered in the scientific literature. However, a significant contribution to the development of the topic is made by such authors as O.V. Ishchenko, T.M. Tkachenko, V.A. Sokolovsky and A.L. Melnychenko [2], who focus on modern ecological approaches to packaging. They highlight the technological and regulatory features of creating ecological packaging as one of the key areas of modern production. I.R. Loshenyuk and O.I. Nedilska [3] consider packaging as a marketing tool for promoting goods, emphasizing its importance in communication with a potential consumer. Ya.R. Mamedova [4] investigates practical aspects of packaging development in the food sector, where the specifics of product storage require additional design and functional solutions.

Also valuable are the observations of O.S. Teletov and V.M. Shatova [6], who analyze packaging as an object of innovative marketing, in particular in the context of new approaches to attracting customers through design, color solutions and emotional impact. This is complemented by the Internet resource dneprograf.com.ua [1], which considers packaging branding as a marketing tool, emphasizing its role in forming recognition and trust in the product. The research of Boz, Korhonen and Koelsch is also relevant. Sand [11], which draws attention to consumer expectations regarding packaging sustainability, pointing to global trends in the field of eco-design.

The research also used expert literature, in particular publications in modern online publications - lemarbet.com [7], zond.agency [5], ssk.ua [8], viskom.com.ua [9], which highlight modern aspects of the topic, including visual identity, logistical efficiency, psychological impact of design and communication function of packaging [10].

Despite the sufficient amount of literature on this topic, there is a lack of systematized material on the topic of research, and therefore, using various methods of scientific knowledge, the information was analyzed, grouped, systematized, and presented in the light of the research topic.

The purpose of the article is to identify and systematize the main stages of creating packaging as an integrated element of product and marketing design. To achieve this goal, the following tasks will be performed: analyze the functional purpose of packaging, taking into account technical, ergonomic and protective requirements; investigate the influence of consumer behavior on the formation of packaging solutions; characterize the environmental, design and marketing aspects of integrating packaging into the brand strategy.

Methods and materials. In the process of research, a set of theoretical methods was applied, in particular, analysis, generalization, systematization and comparison of scientific

sources related to packaging design, consumer behavior, ecology and marketing communications. The main material for the study was scientific publications, industry reports, regulatory and technical documentation, as well as modern examples of packaging solutions from the practice of food brands. This approach allowed us to identify the structural sequence of the stages of packaging creation and characterize their content taking into account the interdisciplinary context.

Results

Packaging creation is a complex multi-level process that includes sequential stages, depicted in Fig. 1.

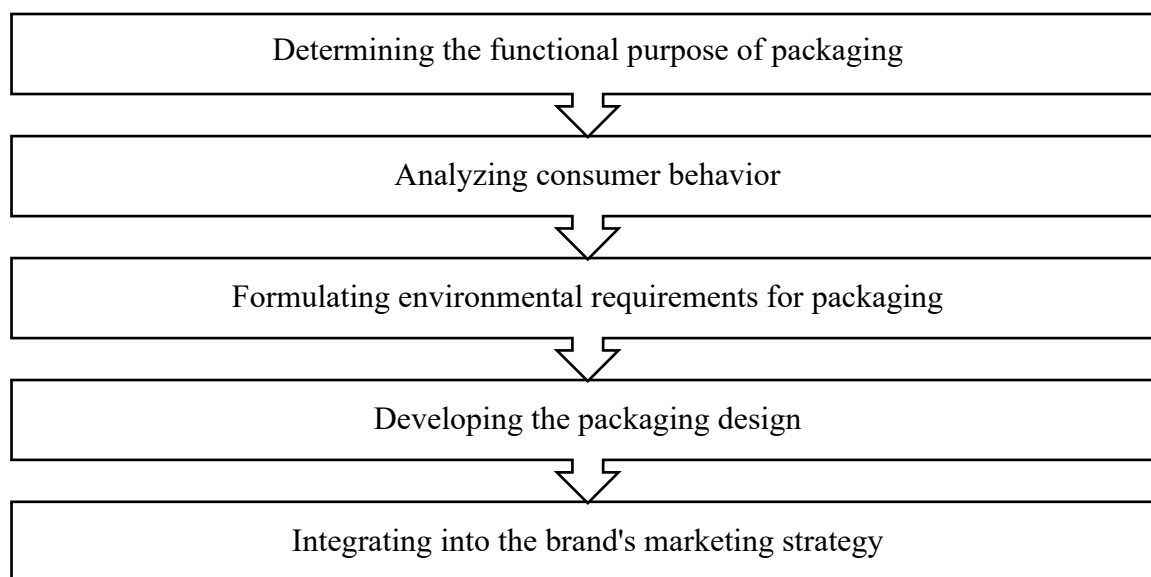


Figure 1. - Stages of packaging creation

Source: systematized by the author.

Let's consider each of the stages in more detail.

Determining the functional purpose of packaging begins with the formulation of basic requirements for its technical, physical and operational properties. This is a fundamental stage that determines what the packaging solution will be - taking into account the specifics of the product, the conditions of its storage, transportation, sale and interaction with the consumer. The main function of packaging at this stage, according to Teletov O.S. and Shatov V.M., is to ensure the integrity of the product from the moment of its packaging to its final use, including the logistics chain and potential environmental impact. Packaging should protect the product from damage, weight loss, spoilage, contamination or third - party interference, and also maintain the proper appearance of the product until the moment of sale [6].

The protective function implies that the packaging must be resistant to mechanical factors (impacts, compression, vibrations), as well as to moisture, light, air, temperature fluctuations and microbiological contamination. For example, for food products, barrier properties are critical against the penetration of oxygen and moisture, which can cause oxidation or mold. Packaging for pharmaceuticals must also prevent the effects of ultraviolet light or temperature fluctuations, which can change the chemical structure of the active substances. In addition, it must maintain a stable shape and density regardless of the load during transportation [6].

Special attention at this stage is paid to the safety of the materials from which the packaging is made. This concerns not only their physical inertness, but also their chemical

stability: the materials must not react with the contents or emit volatile or extractable compounds that may change the organoleptic properties or safety of the product. For example, in the case of plastic containers, only polymers with appropriate food or pharmaceutical certificates are used. Special requirements are imposed on hermetic joints, adhesives, dyes and varnishes used in the packaging production process [6].

The functional purpose of the packaging also covers its interaction with the consumer during the use of the product. In particular, the packaging should provide convenient opening and re-closure, which is especially important for food products with an extended shelf life or for cosmetics. Ergonomic characteristics are also important - compliance with the shape of the hand, the presence of handles or dosing devices, adaptability for the elderly or people with disabilities. Such solutions not only improve the user experience, but also reduce the risk of damage to the contents during repeated use [6].

At the stage of determining the functional purpose, it is important to take into account the conditions of logistics, distribution and display of the product at the point of sale. The packaging must be resistant to stacking, meet palletization standards, ensure compactness and cost-effectiveness of transportation. In addition, its shape and design should facilitate convenient display on shelves, compatibility with automated packaging and scanning mechanisms. Transparency or a window through which the product is visible plays a special role - such elements increase attractiveness and stimulate impulse purchases [6].

The functional purpose of packaging involves taking into account its information function. Packaging must contain all the mandatory information stipulated by current legislation - product name, composition, production date, expiration date, storage conditions, marking for processing. However, it also plays the role of a carrier of brand identity - through a logo, corporate style, color palette, slogan, which helps the buyer to quickly recognize the product among analogues. Therefore, even at the basic stage of packaging development, it is designed as an important element of communication - taking into account both regulatory requirements and brand narratives [6].

Consumer behavior analysis is a critical step in packaging design, as it allows you to align the physical and visual characteristics of the packaging solution with the expectations and habits of the target audience. Packaging cannot be universal - it must be adapted to the socio-cultural, age, gender and even emotional profile of the buyer. Consumers are attracted to packaging that resonates with their lifestyle, values and aesthetic ideas, so its effectiveness largely depends on the ability to evoke recognition and trust even before contact with the product [6].

This stage takes into account both rational and emotional factors. The former includes ease of use, logical placement of information, the presence of elements of reopening or accurate dosing. Emotional factors include the subjective perception of quality, aesthetics, novelty. For example, the presence of a pleasant texture or original shape can cause an association with the premiumness of the product, even if its content is identical to the goods in standard packaging. In this context, the packaging actually plays the role of a translator of sensations, emotions and social status, which the consumer subconsciously associates with the chosen product [6].

It should also be taken into account that the first impression of a product at the point of sale is formed exclusively through the appearance of the packaging. In a crowded information environment, it is the signal that distinguishes the product from competitors, activating the mechanisms of spontaneous attention. This is especially true in conditions of lack of direct contact with the brand before purchase, for example, in supermarkets or online stores. In such situations, the packaging becomes the only interface between the brand and the buyer, and its ability to instantly convey the value of the product is crucial [6].

In addition, packaging is part of the overall marketing communications system and must correspond to advertising messages that precede contact with the product. It completes the brand promise that the consumer receives through advertising, social networks, opinion leaders. If the packaging does not meet the expectations formed in advance, this can lead to a loss of trust even in a quality product. On the contrary, a consistent visual identity enhances the impression of integrity, professionalism and care for the consumer, which forms a lasting sense of brand reliability [6].

No less important is the consideration of the cultural context in which the packaging functions. Symbols, colors, shapes - all this has a different semantic load depending on the country, region or even social stratum. For example, in Northern Europe, the desire for visual restraint prevails, which is manifested in the popularity of minimalism and monochrome solutions, while in East Asia, complex, bright graphics with a large number of decorative elements are effective. At the same time, symbolic images can have radically different connotations: a color that is associated with purity in one culture may have a negative religious or social connotation in another. Therefore, the analysis of consumer behavior should be multilevel and interdisciplinary, including both the psychology of perception and socio-cultural sensitivity [9].

At the stage of *forming environmental requirements for packaging*, the key task is to ensure a balance between functionality, consumer expectations and minimizing negative environmental impact. The choice of materials from which packaging is made directly affects both its operational characteristics and the environmental footprint of the product as a whole. Glass, metal, plastic, paper and cardboard - each of these materials has its own environmental impact profile, including parameters of reuse, energy intensity of production and degree of biodegradation. For example, glass is inert and suitable for multiple recycling, but has a high mass; plastic is light and cheap, but the most problematic in the context of global pollution; metal provides tightness, but requires additional protective coatings; paper and cardboard are renewable resources, but require dry storage conditions [4].

The formulation of environmental requirements also includes predicting the operating conditions of the packaging, in particular, determining the temperature, humidity, mechanical loads and shelf life. The packaging must be strong enough for transportation, while maintaining its environmental safety. In the case of frozen products, for example, packaging materials must withstand low temperatures without deformation, while for cosmetics, wear resistance during prolonged daily use is relevant. Ergonomics are also taken into account: a re-closing system, ease of opening and the possibility of accurate dosing - all this must be implemented using environmentally friendly technologies and materials [2].

The growing environmental awareness of consumers is changing the very approach to packaging design: its life cycle is increasingly viewed as a continuous process - from the origin of raw materials to disposal after use. In this context, ecological packaging is defined as one that meets the principles of sustainable development: it is made from recycled or biodegradable materials, involves minimizing emissions in production and using energy from renewable sources. Also important are the ability to compost, the absence of toxic residues and ease of disposal in local waste management conditions. Such characteristics not only reduce the environmental load, but also enhance the company's image in the eyes of an environmentally conscious consumer [2].

The reflection of the brand's environmental orientation is increasingly being implemented through innovative packaging formats. Packaging made from biodegradable materials, such as corn starch or mycelium, or from recycled paper and cardboard, is becoming a marker of a conscious approach to production. At the same time, interactive packaging, which combines informational and environmental functions, is becoming increasingly popular. For example, applying QR codes allows not only to familiarize the

consumer with the product's composition or recycling conditions, but also provides an opportunity to join the brand's initiatives in the field of sustainable development, stimulating long-term interaction between the consumer and the company [5].

Packaging design development is one of the most important stages in the process of creating an effective packaging solution, since it is the design that provides the consumer with the first visual contact with the product. The external design of the package forms the initial impression, affects the emotional perception of the product, signals its quality and purpose. Design is especially important for online shopping: in conditions where the buyer is not able to physically evaluate the product, the packaging becomes the only material point of contact with the brand after the purchase. Aesthetics, thoughtfulness and recognition of the design are factors that directly affect customer loyalty and repeat orders [7].

Visual and tactile design elements - color, shape, texture, fonts - have a significant impact on the subconscious perception of the consumer. The color palette, for example, not only emphasizes the character of the product, but also evokes associative reactions: green is associated with naturalness, red with energy, blue with trust. The shape of the packaging is also of great importance: smooth lines are perceived as friendly and accessible, while geometrically strict contours create a sense of stability and premiumness. Original design solutions allow a brand to effectively differentiate itself in a competitive environment and attract the attention of the target audience [9].

Design also performs an informational function - the placement of text and graphic elements on the packaging (logo, instructions, composition, contact information) should be logically structured, visually accessible and aesthetically consistent. Typography, font selection and text placement should correspond to the overall style of the brand. A special role is played by ecological identification: the use of natural colors, sustainability symbols and appropriate materials strengthens trust in the brand among eco-conscious consumers [9].

Packaging design development is closely related to the branding process, which ensures product recognition and consistency of brand communications. Visual elements, in particular the logo, corporate colors, original slogans, form a holistic image of the company, which is imprinted in the consumer's mind. Packaging design plays a role not only during the purchase, but also in the subsequent experience of using the product: branded packaging is often stored, photographed, mentioned in social networks, which enhances the effect of "viral" marketing [1].

The technological component of design includes the use of modern printing and packaging finishing methods. Depending on the format, production scale and type of material, flexographic printing (for mass orders), foil stamping (to create a premium effect), silkscreen printing (for non-standard materials), UV printing (for a rich image), as well as branding with stickers are used. Each of these technologies allows you to flexibly adapt the visual concept to the brand's goals, while maintaining both economic feasibility and aesthetic quality [1].

A coordinated, well-thought-out packaging design performs not only an aesthetic, but also a strategic function in the marketing system. It influences the perception of the value of the product, strengthens associations with the quality and reputation of the brand, determines the emotional connection with the target audience. Thanks to successfully integrated design solutions, the packaging turns into a full-fledged carrier of brand identity, capable of forming long-term relationships with the consumer and increasing the competitiveness of the product in the market [7].

Integration into the brand's marketing strategy consists in including packaging in the brand communication system as a full-fledged marketing tool. In the conditions of fast consumer decisions, packaging performs not only a protective but also an advertising function: it must be informative, accessible and visually attractive at the same time. It is the packaging that forms the first impression of the product, communicates key characteristics,

explains how to use it and demonstrates its benefits. Its ability to immediately attract attention and convey a meaningful message ensures emotional contact with the brand even before the actual purchase [4].

Integrating packaging into multimodal advertising campaigns helps to cement its image in the consumer's mind. Today, packaging is present in video content, social networks, mailings, blogs and reviews, which creates a wide communication space for the brand. Its visual elements should be so holistic and recognizable that the buyer can instantly correlate the product with previously seen advertising materials - both in the digital and physical environment. Thus, packaging becomes an integral part of branding, ensuring the continuity of marketing messages [4].

The integration of packaging into the marketing strategy also encompasses its logistical component, which directly affects the distribution and perception of the product at the point of sale. Packaging must meet the requirements of efficient transportation, storage and presentation on the shelf. Its design features should help reduce the risks of damage to the product, simplify warehousing and optimize placement in the retail space. As a result, competent logistical design of packaging has a positive effect on the stability of product circulation and prevents commercial losses that may arise due to delays or complaints [8].

The expansion of the marketing role of packaging also includes digital supply chain management practices. Digital integration allows brands to use analytical tools to forecast demand, track circulation, optimize balances, and organize reverse logistics - return of packaging, recycling, reuse of components. This combination of economic feasibility and environmental responsibility is an element of a sustainable marketing model that reduces costs and builds loyalty among the target audience [8].

Integrating sustainability principles into a brand's marketing strategy through packaging is becoming increasingly relevant. While consumers expect environmentally friendly solutions, their perceptions of sustainable packaging are often superficial or misleading. Glass packaging is mistakenly considered the most environmentally friendly, even though its production is energy-intensive, and bioplastics often do not decompose without special conditions. This discrepancy between perception and reality requires active educational work on the part of brands [11].

Scientific methods for measuring the sustainability of packaging, such as life cycle assessment (LCA), allow for an objective analysis of environmental impacts, from the origin of raw materials to disposal. However, LCA results often contradict consumer expectations, so marketing must act as a communication bridge, explaining complex environmental characteristics in accessible language. Educational campaigns, interactive labels or QR codes that lead to environmental impact data are all manifestations of integrating sustainability into marketing packaging [11].

Integrating packaging into marketing policy involves adapting its functions to the specifics of the retail environment. Companies develop individual merchandising standards that take into account the specifics of stores, target groups and product categories. This allows managers to change the visual and functional characteristics of packaging depending on the context of display, competitive environment, consumer behavior and spatial features of retail outlets [3].

In general, packaging is becoming an important component of strategic marketing management. It not only implements instrumental functions within the promotion complex, but also supports the achievement of corporate and functional goals of the enterprise. High adaptability to external changes, compliance with the macro and micro environment, consistency with the communication strategy and effective use of resources - all this forms the strategic potential of packaging as a marketing resource [3].

The mentioned stages - determination of the functional purpose of the packaging, analysis of consumer behavior, formation of environmental requirements and integration into the marketing strategy - are the basis of practical activities in the field of graphic design of confectionery products, where packaging performs not only a protective but also a communicative function. The candy packaging, on which the author is working, is a direct example of the practical implementation of the described theoretical model.

The process of creating packaging in this case involves not just the aesthetic design of the product, but the full implementation of a strategically built brand. The selection of visual elements are: color palette, fonts, shapes, graphic accents - is based on a combination of functional requirements and a deep understanding of the expectations of the target audience. Each package is considered as a visual story that should evoke an emotional reaction even before physical contact with the consumer, form an image of the quality, mood and character of the product.

Testing design options and analyzing market reactions allows us to adjust packaging solutions in accordance with behavioral trends. At the same time, close cooperation with marketers ensures the integrity of the brand's visual communication: the packaging is consistent with the overall advertising strategy, adapted to different distribution channels, seasonal launches and digital platforms. Thus, the packaging design becomes not a self-sufficient visual object, but an element of systemic marketing interaction that combines consumer perceptions with brand values.

Considerable attention in packaging design is also paid to material aspects - both in the context of preserving the organoleptic properties of the product and compliance with environmental requirements. The selection of packaging materials is carried out taking into account their physicochemical inertness, safety, and the possibility of recycling or reuse, which is an important component of brand reputation in the context of growing environmental awareness among consumers.

Conclusion. The process of creating packaging begins with determining its functional purpose, which includes the formulation of technical, physical and operational requirements for the packaging solution. At this stage, the main functions of the packaging are determined - protection of products from damage, preservation of their properties, ease of transportation, adaptation to logistics conditions and interaction with the consumer. Thus, the functional purpose of the packaging sets the basic parameters of its design and materials, which affect the subsequent stages of design.

The next stage is the analysis of consumer behavior, which allows you to form the correspondence of the packaging to the expectations of the target audience. The packaging should not only be convenient and informative, but also evoke a positive emotional impression, stimulating trust and the desire to purchase the product. In parallel, the environmental dimension of the packaging is formed - the selection of materials and the design of its shape are carried out taking into account environmental safety, the possibility of recycling, reducing energy consumption and compliance with the principles of sustainable development.

The final stages are the development of packaging design and its integration into the brand's marketing strategy. Design performs not only an aesthetic but also a communicative function, ensuring visual identity, information accessibility and compliance with advertising messages. Integration of packaging into the marketing communications system allows for continuity of brand interaction with the buyer - from the first visual contact to the moment of consumption. Packaging turns into a multifunctional tool that combines protection, presentation, environmental responsibility and brand differentiation.

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