

FUTURE OF PACKAGING: Strategies for Economy and Environment

The current business environment is extremely volatile. In recent years, the costs for both wood-based and synthetic packaging have been highly fluctuating. Therefore, it is particularly important now to position oneself sustainably and for the long term in this area. Packaging processes for companies of all sizes and industries are crucial. Packaging plays a central role in the logistics and distribution chain, affecting both costs and environmental impacts and is a key element for customer satisfaction. Given the growing global competition, increasing customer requirements, and a rising awareness of sustainability, it is more important than ever for companies to rethink and optimize their packaging strategies.

The importance of packaging optimization lies not only in reducing costs and material consumption but also in adapting to changing market conditions, regulatory requirements, and customer preferences. With the right approach, companies can increase their efficiency, reduce waste, strengthen their brand presence, and simultaneously contribute to environmental protection.

In this white paper, we present the six key areas of packaging optimization with case studies and checklists:

- Professional packaging management
- Cost optimization
- Material and design optimization
- Size optimization
- Sustainability
- Process optimization

With optimal implementation and application of packaging solutions, companies can achieve a sustainable competitive advantage.



1. PROFESSIONAL PACKAGING MANAGEMENT: BEST PRACTICES AND INNOVATIONS

Professional packaging management consists of strategic and operational elements.

Supplier Selection

Strategically, it is advisable to cluster the packaging with respect to its importance in the value creation process. Keywords here include supplier concentration or diversification. This means that for critical packaging materials, a risk minimization with two or more redundant suppliers should be pursued. For “Me-Too” items, however, focusing on a single supplier may make sense. In addition, the delivery reliability and fail-safety of important suppliers should be assessed.

Supply Contracts and Price Adjustments

Contract management is another important component. In addition to terms, service levels should especially be defined by contract. Due to the volatility of raw material prices and other factors that influence the cost of packaging materials, managing price adjustments is of great significance. Within the framework of supply contracts or separate agreements, arrangements can be made with suppliers that secure a good price level for 2-3 years, without the need for time-consuming price negotiations in the meantime.

Master Data Collection for Packaging Materials, Suppliers, and Processes

In trading or manufacturing companies, the following are usually used:

- Primary packaging with direct contact with the product (e.g. films)
- Secondary packaging (e.g., cardboard boxes, wooden crates)
- Load carriers and packing aids (e.g., pallets, stretch film) and should be considered in packaging management.

Professional packaging management is based on the systematic collection of all relevant information. For example, the following should be captured:

- Unique, meaningful specifications of all packaging items
- Documentation of sources of supply, including alternatives
- Possible customer requirements
- Legal requirements (e.g., hazardous materials)
- Necessary manufacturer certifications
- Depositing of declarations of conformity and analyses
- Packing instructions

This data should be systematically, automatically, and continuously captured and updated. Otherwise, there is no basis for optimizing the packaging process.

Furthermore, on this basis, market inquiries and approvals of new suppliers can be efficiently conducted.

A woman with long brown hair, wearing a brown knit beanie and a tan trench coat, is smiling and looking at a clear plastic container of salad on a grocery store shelf. She is holding the container with both hands. The background shows other shelves stocked with various products, including more salad containers and packaged goods.

2. COST OPTIMIZATION: EFFICIENT STRATEGIES FOR COST REDUCTION

Am I paying too much for my packaging? Do I have the right suppliers? How do I compare in the industry benchmark? For companies, these questions are not always easy to answer. Often, there is a lack of transparency about the supplier market. We provide this transparency.

Entry at the Item Level

At the heart of cost optimization is the critical examination of current price structures with existing suppliers. It is crucial to determine whether these prices are market-appropriate. This cannot be said categorically. We recommend starting at the item level. A key factor in this is the analysis of providers who not only offer competitive prices but also have the necessary production and delivery capacities. After all, the cheapest supplier is of no use if there are delivery difficulties.

Supplier Performance: Automation is Key

In this context, it is also important to identify companies capable of cost-effectively producing the required packaging portfolio. The manufacturing capabilities, e.g., the degree of automation and the performance of the machines, often make the difference. In conclusion, a well-founded recommendation regarding an optimal supplier structure is essential to effectively define and justify the number of suppliers.

Optimal Pricing: Consider Transport Costs and Value

In some packaging segments, it may be sensible to source on a Europe-wide or even international basis. This depends heavily on transport costs, local production costs, and available production capacities. For example, in the case of corrugated cardboard boxes, transport costs play a significant role. Corrugated cardboard has a high transport volume compared to its relatively low goods value. For this reason, it usually makes economic sense to source these within a radius of max. 300 – 400 km. In contrast, for Big Bags, due to labour-intensive production and existing supplier structures, it is often sensible to source these from South-East Europe or Asia.

3. MATERIAL AND DESIGN OPTIMIZATION: CREATIVE AND SUSTAINABLE SOLUTIONS

Companies that focus on sustainability not only gain the trust of consumers but also actively contribute to environmental protection. The future of the packaging industry lies in the balance between functional, aesthetic, and sustainable solutions. Material, design, and size optimization are key to achieving this balance and shaping a greener future for us all.

Resource scarcity impacts packaging design

The challenges of climate change and resource scarcity also affect the packaging industry. Material and design optimization are at the forefront, aiming not only to address environmental impacts but also to create aesthetically pleasing packaging. Size optimization also plays a crucial role. It is important to avoid over-packaging in both primary and secondary packaging.

E-commerce: Fill rates of only 50 percent

Especially in e-commerce, there is sometimes enormous potential for improvement. The average fill rate here is only 50 percent. Various solution approaches are offered to create transparency and address this core issue.

Material Revolution for a Greener Future

Traditional packaging materials are the focus of a paradigm shift. Companies are increasingly turning to environmentally friendly alternatives that are both functional and ecological. Biodegradable plastics, recyclable paper products, and innovative material blends are opening up new perspectives for a more sustainable packaging industry.

TREND: ECO-FRIENDLY PACKAGING FROM MUSHROOMS

An example of this is the development of packaging made from mushrooms. These biodegradable packaging materials not only reduce the need for conventional plastics but also allow for the creation of individually customizable packaging solutions.



4. SIZE OPTIMIZATION: ADJUSTMENT FOR EFFICIENCY AND COST REDUCTION

By applying size optimization, efficiency and cost reduction in packaging can be improved. The aim is to ensure that the packaging is as small as possible without compromising product quality.

There are various methods to tailor size optimization, such as the use of software or the implementation of smart measuring & weighing systems. These allow for a careful analysis of the packaging sizes used in relation to the packaged goods, replacing assumptions and estimates with fact-based data. Another approach to consider is the use of standard packaging sizes.

Historically Grown Packaging Structure Often, packaging structures in companies have developed historically. In practice, it is common to see cases where the product is adapted, but the packaging is not. This leads to unwanted overspecification for similar product packages.

Frequently, the product can also fit into a smaller outer packaging, which not only saves on packaging material and filler but also reduces packaging costs and positively affects transport costs. Moreover, smaller packages and, consequently, less packaging material also result in lower storage costs and reduce the carbon footprint. Individual size optimization is crucial for packaging since about 80 percent of packaging costs are process costs. Those who specifically use the right packaging and sizes have a very long lever. Therefore, the optimization can include the following aspects:

- New packaging sizes
- Alternative packaging materials
- Alternative protective padding and fillers
- Adjusted product sizes
- Smart product arrangements within the shipping unit
- Adjusted filling technology
- New packing schemes
- Efficient pallet utilization

Improving the volume utilization rate positively impacts sustainability and resource use. Depending on the product, a reduction in packaging size may also facilitate safer transport, as it prevents slipping inside the package or eliminates the need for filler material.

5. SUSTAINABILITY: RESPONSIBLE PACKAGING SOLUTIONS

Packaging serves product protection and is indispensable for transportation to the customer. At the same time, it also has an informational or advertising function. Nonetheless, avoiding unnecessary packaging is of the highest priority because only indispensable packaging has the potential to be environmentally friendly and sustainable. Where packaging is unavoidable, it must be produced with economical resource use and be either reusable or recyclable.

From an ecological perspective, it is essential to responsibly adhere to the minimum standards of environmental protection and social aspects. This means:

- Generally avoiding unnecessary packaging
- Avoiding non-recyclable packaging
- Avoiding environmentally harmful packaging materials
- Avoiding unnecessary single-use products and packaging, regardless of the material
- Using refill products and concentrates

Eco-labels and recycling symbols according to the packaging laws provide guidance. They clarify the product packaging and its possible disposal:

- Recycling Codes: This eco-label indicates the material from which a product's packaging is made.
- RESY Symbol: This emblem symbolizes the comprehensive disposal and material recycling of transport and secondary packaging made from paper and cardboard. Usage rights are required for this eco-label, which are applied to the packaging in the form of the RESY symbol combined with the manufacturer's identification number.
- Use of reusable packaging for take-out sales and in innovative mail-order business. These packagings can be used multiple times.
- Avoiding excessive headspace and unnecessary multiple packagings
- Avoiding “deceptive packaging”

In the upcoming amendment to the Packaging Act, “deceptive packaging.”

Sustainability requires more high-quality recyclates, i.e., material from old, recycled packaging, and new material from renewable resources.

Economically, this means setting the price in connection with an ecologically sensible packaging and taking into account increasingly environmentally conscious customer expectations.

6. PROCESS OPTIMIZATION: INCREASING EFFICIENCY IN THE PACKAGING LINE

The packaging process is an indispensable step in the production chain that requires precision and efficiency. Companies are increasingly relying on innovative technologies to optimize this process. Automated packaging machines, advanced robotics, and intelligent sensor technologies not only allow for accelerated packaging but also ensure higher accuracy and quality. Companies that consider such process optimization as a central component of their business strategy not only create a more efficient production but also position themselves as leaders in an increasingly competitive environment.

Process Optimization as a Component of Long-Term Business Strategy

The future belongs to companies that do not view process optimization as an isolated measure but as an integral part of their long-term business strategy. Enhancing efficiency in the packaging process is key to sustainable growth and economic success.



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