

## **Smart Packaging - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2025 - 2030)**

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### **Report description:**

The Smart Packaging Market size is estimated at USD 24.28 billion in 2025, and is expected to reach USD 34.25 billion by 2030, at a CAGR of 7.12% during the forecast period (2025-2030).

Smart packaging refers to a specific type of sensor-equipped packaging system used for various items, including food and medication. The technology used in smart packaging helps increase product quality, shelf life, freshness monitoring, and customer and product safety. When products are packaged using intelligent technology, these systems provide details about the product's quality and freshness.

### **Key Highlights**

- The smart packaging market's growth is driven by consumer lifestyle changes brought on by rapid urbanization and increased use of individualized personal items with advanced integrated innovation. The market depends on untapped geographic areas that offer enormous opportunities for competitors. Owing to increasing concern about health and hygiene, especially after the pandemic, the demand for sustainably packaged organic food has increased worldwide.
- According to the Dubai Chamber of Commerce and Industry Euromonitor, between 2020 and 2025, the growth rate of packaged staple food in the United Arab Emirates was the highest at 4%. In developing countries like India, China, Thailand, and Indonesia, the market for organic packaged food has recorded positive growth in the past few years. This is expected to lead to an increase in the demand for smart packaging in these countries in the future.
- According to a survey by YouGov in September 2023 about consumer spending on sustainable food products in India, 38% of the respondents were willing to pay 10% more for sustainably packaged food and drinks than conventionally packaged food products. On the other hand, 4% of respondents were willing to pay more than 100% for sustainably packaged food and beverages.
- Eco-smart packaging features a printed QR code on the outside of the box that connects to a webpage with all available product

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quick start guides (QSG). Customers can quickly download the PDF version corresponding to their new LMI product by scanning the QR code on the box with their smartphone and then perusing the QSGs on the associated homepage.

- Smart packaging also presents economic potential based on digitization, making it compatible with Industry 4.0. Sealed Air launched its digital packaging brand with a portfolio of design services, digital printing, and intelligent packaging solutions. Additionally, in October 2023, the digital technology studio Appetite Creative, in collaboration with packaging company Tetra Pak, launched a new interactive, innovative packaging for European fruit juice producer Rauch.
- However, the high cost of capital for installment, security issues, new techniques for fabricating such sensors and indicators compatible with packaging standards, and consumer awareness are vital restraints and challenges to the market's growth. Building a supporting infrastructure is an additional expense for end users who lack the infrastructure required to enable these package functionalities. To maximize the efficiency and efficacy of investments, every link in the supply chain has developed equivalent technological proficiency due to the existing market structure.

## Smart Packaging Market Trends

### Active Packaging is Expected to Hold a Significant Market Share

- Active packaging technology builds on the traditional concept of packaging by adding functionality to the packaged product, adapting its mode of action to the protective function and needs of the product, and going beyond mere containment, protection, and transmission to limit destructive processes. Active packaging offers a new approach to reducing food waste and loss during increased demand in the supply chain.
- Companies are leveraging smart active packaging to differentiate their products in the market, offering innovative features that enhance user experience and perception of their brand. For instance, in January 2024, NPP completed the acquisition of Active Packaging Limited. Active Packaging, based in Omagh, is a business with a 21-year history supplying various flexible packaging materials to the food, horticultural, and industrial sectors throughout Ireland. With this acquisition, NPP aimed to leverage the strengths of both entities to deliver enhanced and diversified packaging solutions to its customers.
- In January 2024, ProAmpac, a player in flexible packaging and material science, announced the launch of ProActive Intelligence Moisture Protect (MP-1000), a patent-pending breakthrough moisture-adsorbing technology that eliminates the need for desiccant packets. MP-1000 platforms use Aptar's CSP Technologies' 3-Phase Activ-Polymer platform technology to lower the moisture level in the packaging headspace, making it ideal for applications that require optimal moisture control, such as point-of-care diagnostic kits, live culture probiotics, and hygroscopic powdery food products. This collaboration aims to transform how active packaging is delivered and fulfill unmet needs by providing a fully integrated, multi-layer film solution that is flexible and powered by CSP's proven Activ-Polymer technology. Such innovations drive the growth of the active packaging segment.
- Increasing demand for security and tracking solutions drives the growth of the segment. For instance, RFID tags provide the ability to identify, control, and manage the food supply chain. These are more advanced, reliable, and efficient for food traceability than conventional barcode tags. RFID tags for monitoring the products' temperature, relative humidity, pressure, pH, and light exposure are available in the market, aiding in enhancing food quality and safety. In October 2023, Fresenius Kabi announced the introduction of +RFID smart labels for Diprivan (Propofol) Injectable Emulsion, USP, 200 mg per 20 ml in single-dose vials, sold in the United States. The +RFID labels are fully compatible with all significant US RFID kit and tray systems.
- Additionally, Zebra Technologies Corporation, a US manufacturing company, reported that, by 2024, the market-leading packaging manufacturers and end users will likely gravitate toward incorporating more comprehensive technology integrations in warehousing management. According to the Warehousing Vision Study report by Zebra Technologies, the investment in technologies in warehousing, including RFID, sensors, and augmented reality, is expected to increase from 29%, 29%, and 22%, respectively, in previous years to 35%, 35%, and 29% in 2024, showing the increasing growth opportunity of smart packaging.
- Active packaging is increasingly gaining popularity in the industrial sector because it enhances product longevity and maintains quality standards. The food industry extensively utilizes active packaging to preserve perishable items and prevent spoilage.

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However, the growing costs associated with incorporating active packaging components, such as sorbents, into food products may hinder market growth in the future. For instance, in June 2023, cost efficiency was optimized by leveraging the benefits of FreshCase active vacuum packaging. FreshCase active packaging reduces costs and boosts profitability effectively. In response to the escalating expenses faced by processors, Amcor Limited's innovative solution enhances consumer appeal and maximizes profit margins per unit.

#### North America is Expected to Witness a Significant Market Growth

- The region is expected to record significant growth. Consumers in the United States are increasingly demanding tech-savvy and value-added features such as freshness indicators, interactive packaging, and product authentication, which smart packaging provides.
- With food safety being a top priority, especially in light of recent foodborne illness outbreaks, there is a growing demand for smart packaging solutions that offer real-time monitoring and traceability throughout the supply chain. The US Centers for Disease Control and Prevention (CDC) estimated that every year in the United States, 48 million (or 1 in 6) people get sick from a foodborne illness, 128 thousand are hospitalized because of a foodborne illness, and 3,000 people die from a foodborne illness.
- Due to favorable regulatory conditions, a growing focus on sustainability, and the rising demand for active and intelligent packaging across various end-user industries, particularly food and healthcare, the smart packaging market in the United States has experienced substantial growth over the past few years.
- According to the Food and Agriculture Organization of the United States, an estimated 133 billion pounds of food, worth USD 161 billion, is wasted yearly. Efforts to reduce food waste are multifaceted, including increased diversion of food to food banks, education and outreach, and efforts to standardize date markings on food labels. Further, reducing food waste using smart packaging is gaining significant traction in the United States.
- Moreover, the growth of intelligent packaging in the food industry is significantly attributed to government efforts, as smart packaging can track the location and condition of food beyond reducing food waste or helping to ensure food safety. For instance, the US Department of Defense (DOD) and the Food and Drugs Association (FDA) have encouraged the use of RFID technology for supply chain management and the tracking and tracing of products requiring innovative packaging.
- Technological advancements, such as sensors, RFID tags, and NFC (Near Field Communication), have made innovative packaging more accessible and cost-effective, driving its adoption across various industries in the United States. For instance, in February 2023, UPS invested USD 140 million in an initiative as it implemented the technology at its 940 remaining US buildings. The initiative entails affixing RFID tags to packages and equipping employees with wearable devices. This move aims to automate scans, minimize misloads, and expedite parcel processing within the delivery company's warehouses.
- Companies are increasingly using smart packaging to differentiate their products in a competitive market, offering innovative features that enhance consumer experience and brand perception. For instance, in May 2023, Amcor PLC, a prominent global company specializing in sustainable packaging solutions, confirmed its acquisition of ModaSystems. ModaSystems, known for its advanced automated protein packaging machines, focuses on creating and servicing significant, customizable vacuum packaging systems tailored for the meat, poultry, and dairy sectors.

#### Smart Packaging Market Overview

The intensity of competitive rivalry in the smart packaging market is moderately high and is expected to remain the same during the forecast period. Some of the major players in the market are Sealed Air Corporation, Amcor PLC, Ball Corporation, BASF SE, and Huhtamaki OYJ. Players in the market are adopting strategies such as partnerships, innovations, and acquisitions to enhance their product offerings and gain sustainable competitive advantage.

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- January 2024: NPP acquired Active Packaging Limited, a supplier of flexible packaging materials to the food, horticultural, and industrial sectors throughout Ireland. This strategic move was designed to fuse the best of both companies, promising customers a broader spectrum of packaging solutions. The focus is on upholding shared values of quality, sustainability, and customer-centricity. Through this acquisition, NPP underscored its dedication to spearheading the packaging sector and adapting to its clientele's changing demands.

Additional Benefits:

- The market estimate (ME) sheet in Excel format
- 3 months of analyst support

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