

Internet of Packaging Market Size, Share & Trends Analysis Report By Technology (Sensor & Tags, Barcode & QR code, RFID), By End-use (Automotive, Healthcare), By Region, And Segment Forecasts, 2025 - 2033

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Abstracts

The global internet of packaging market size was estimated at USD 21.05 billion in 2024 and is projected to reach USD 42.67 billion by 2033, growing at a CAGR of 8.2% from 2025 to 2033. The growing demand for smart packaging solutions that enhance product traceability, consumer engagement, and supply chain transparency drives the market.

In addition, the rising adoption of IoT technologies and NFC/RFID-enabled packaging fuels market growth. Modern consumers increasingly seek transparency, authenticity, and real-time product information. IoT-enabled packaging, integrated with QR codes, NFC (Near Field Communication), or RFID (Radio Frequency Identification) tags, allows consumers to access detailed product data instantly, including origin, expiry date, nutritional content, and authentication features. For example, luxury cosmetic brands like L'Oréal have started integrating QR codes on their packaging to allow customers to verify product authenticity and engage with personalized content, enhancing brand trust and customer engagement.

The global surge in counterfeit goods and increasing concerns over food safety are key factors driving the adoption of internet of packaging (IoP) solutions. Packaging with IoT capabilities can track and authenticate products throughout the supply chain, reducing the risk of counterfeit items reaching consumers. In the pharmaceutical industry, companies such as Pfizer and Johnson & Johnson are piloting IoP solutions to ensure that medicines are traceable from production to the pharmacy, minimizing counterfeit risks and enhancing consumer safety. Similarly, IoP can monitor storage conditions in

the food industry, such as temperature and humidity, ensuring products remain safe and fresh during transport and storage.

Advancements in IoT, blockchain, and cloud computing enable deploying highly secure, scalable, and cost-effective IoP solutions. Packaging integrated with IoT sensors can collect real-time data, which can be stored and analyzed via cloud platforms to improve supply chain efficiency and inventory management. Blockchain technology further ensures the integrity of product data by providing tamper-proof records. For instance, beverage companies like Diageo use blockchain-enabled smart packaging to track the origin and journey of premium spirits, which helps both in anti-counterfeiting and in offering an interactive consumer experience.

The rapid expansion of e-commerce and D2C sales channels is another significant driver for IoP adoption. With the increase in online purchases, consumers often lack physical interaction with products before purchase, making trust and authenticity crucial. IoP packaging addresses this by providing digital engagement opportunities, product verification, and real-time tracking. Companies such as Nestlé and Unilever have begun deploying IoP-enabled packaging for certain product lines to improve transparency, enhance customer engagement, and reduce returns by ensuring product authenticity and condition upon delivery.

Global Internet of Packaging Market Report Segmentation

This report forecasts revenue growth at a global level and provides an analysis of the latest industry trends in each of the sub-segments from 2021 to 2033. For this study, Grand View Research has segmented the global internet of packaging market report based on technology, end use, and region:

Technology Outlook (Revenue, USD Million, 2021 - 2033)

Sensor & Tags

Barcode & QR code

Radio Frequency Identification

Low-Energy Bluetooth

NFC Technologies

Indicators

End Use Outlook (Revenue, USD Million, 2021 - 2033)

Food & Beverages

Healthcare

Personal & Homecare

Others

Consumer Electronics

Automotive

Regional Outlook (Revenue, USD Million, 2021 - 2033)

North America

U.S.

Canada

Mexico

Europe

Germany

France

UK

Italy

Spain

Asia Pacific

China

India

Japan

Australia

South Korea

Latin America

Brazil

Argentina

Middle East & Africa

South Africa

Saudi Arabia

UAE

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