



RFID Trends



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Checkpoint Systems whitepaper



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RFID Trends

In **2025**, the growing importance of data is reshaping industries globally. Businesses across various sectors are increasingly relying on **data to drive decision-making, ensure regulatory compliance, and optimize operations —while also leveraging AI, which only functions effectively when supported by the high-quality data that RFID technology can provide.** Radio Frequency Identification (RFID) technology plays a crucial role in this transformation, offering unparalleled capabilities in **tracking, monitoring, and automating data collection.**

The global **RFID market**, is expected to reach **USD 25.24 billion by 2033, up from USD 12.61 billion in 2025, at a CAGR of 9.1% from 2025 to 2033** according to a new report by [MarketsandMarkets™](#), reflecting its rapid adoption in industries.

This growth is fueled by the demand for **enhanced security, and sustainable solutions.** Companies in retail, logistics and supply chain, and manufacturing among other industries are leveraging RFID to gain real-time insights, reduce costs, and meet evolving consumer expectations.

In this whitepaper, we will explore some of the **key challenges and opportunities that industries will face in 2025**, analyze the latest market trends, and examine how different sectors are harnessing RFID technology to navigate this ever-evolving landscape.

RFID technology plays a crucial role in data-driven decision-making and operational optimization.





Challenges & Opportunities in 2025

The growing complexity of supply chains and the increasing demand for rapid deliveries have exposed significant gaps in order and delivery synchronization.

These discrepancies affect **customer happiness and brand loyalty** in addition to creating significant **operating costs**. It is crucial to address these inefficiencies to gain a competitive advantage in a world where **precision and timeliness** are expected.

The rise of **Organized Retail Crime** (ORC), particularly in supermarkets and grocery retail chains, also represents a **growing challenge**. Traditional EAS systems cover basic security needs, but they can be enhanced with new technologies that provide additional benefits, such as more accurate alarms which generate more staff confidence, and better shrinkage management thanks to data prosecution, whilst optimizing on-shelf-availability thanks to real-time inventory data.

Sustainability is the third fundamental pillar to consider in this new year. Regulations, such as those related to the **circular economy and reusable packaging**, require significant transformations in production and logistics processes. For example, the European Union has taken the first step with the Packaging and Packaging Waste Regulation (PPWR) requiring all packaging to be reusable or recyclable by 2030, provisionally agreed on with the [European Council and Parliament](#). In addition, the goals of **EU Single-Use Plastics Directive (SUPD) – Directive (EU) 2019/904** set for 2025 will impose progressive measures, such as banning single-use plastic packaging for specific applications. Considering this, companies around the world face immense pressure to adopt more sustainable packaging solutions.

In this scenario, RFID emerges as a key solution, offering a **comprehensive approach to address some of these issues while opening new business opportunities**.



Transforming business through RFID

RFID technology has rapidly evolved, leading to solutions that are revolutionizing key sectors such as fashion, logistics, and food and beverage, among many others. These innovations improve operational efficiency, boost sustainability, and create unique customer experiences. Below are the **main trends related to the evolution of RFID technology** and its impact on various industries.

Smaller and smarter RFID tags:

Advancements in RFID chip sensitivity have enabled the creation of smaller yet high-performance tags, significantly expanding their applicability. From textile products to food packaging, these tags are ideal for a wide range of environments.

Semi-Passive Tag (Battery-Assisted):

These innovative tags can record and transmit critical information, such as temperature or humidity, enabling advanced applications in agriculture, logistics, and the cold chain.

RFID Process Automation:

Tools such as counter stations and RFID tunnels have revolutionized inbound and outbound processes, automating repetitive tasks and significantly reducing human errors.





Sector by Sector: How RFID Tackles Challenges

Fashion: Innovation in the Apparel Sector

The fashion industry is undergoing a revolution thanks to RFID technology. Soft RFID tags, integrated directly into garments, are transforming how **inventory** is managed. This advancement encourages moving away **from manual in-store labeling, streamlining processes and optimizing inventory accuracy.**

Moreover, RFID will enable a **frictionless shopping experience** by enabling features like self checkout, reducing wait times, and improving customer satisfaction.

In addition, RFID implementation in **fitting room** offers valuable insights by collecting key performance indicators (KPIs), such as the amount of **time customers spend in fitting rooms, the garments they try on, and potential cross-selling opportunities.** This feature enhances customer understanding and allows brands to refine their strategies based on real-time data.

In the supply chain, the use of this technology, from the early stages, **allows errors to be detected** before they impact later operations, improving overall efficiency.

RFID appears as a strategic solution to situations including effective **stock management, loss prevention, and enhancing the omnichannel experience.** From source labeling for real-time traceability to advanced inventory control systems, this technology is redefining the industry standards and empowering brands to remain competitive in a fast-paced market.





Sector by Sector:

How RFID Tackles Challenges

Food and Grocery: Reimagining the Supply Chain

The food industry faces crucial **challenges related to accuracy, sustainability, and the management of perishable products**. In grocery, transitioning from traditional Electronic Article Surveillance (EAS) systems to **RFID** ones, **is taking EAS to the next level**. With the rise of ORC, RFID enhances traditional EAS systems by providing data prosecution and false alarms reduction. This evolution allows retailers to **improve security while maintaining operational efficiency**. Additionally, its ability to specifically identify which items trigger security alerts allows for more efficient management, enhancing the customer experience and reducing friction at the point of sale.

Another significant challenge faced by the food sector is **sustainability** regulations such as the EU Packaging and Packaging Waste Regulation (PPWR), which require reusable or recyclable packaging by 2030.

In this context, Checkpoint Systems has introduced the Chinook inlay, an RFID solution specifically designed for reusable packaging that can withstand extreme conditions such as microwave use.

This technological innovation not only helps to meet regulatory requirements but also strengthens the **circular economy by facilitating efficient collection, recycling, and reuse of packaging**.





Sector by Sector: How RFID Tackles Challenges

Food and Grocery: Reimagining the Supply Chain

A critical challenge for supermarkets and grocery retail chains is the **effective management of short shelf-life products**, as it can lead to massive waste and financial losses. Implementing solutions that enhance tracking and inventory control is essential to mitigate these risk. RFID technology provides granular monitoring of each item, providing **key information such as manufacturing date, manufacturer, and expiration date**. With this data, grocery businesses can efficiently identify and prioritize items nearing their expiration date, helping to minimize waste and maximize profitability, they can also adopt strategies such as discounts for products close to expiration, which not only reduce food waste but also ensure customers purchase fresh, high-quality products.

Throughout the food supply chain, RFID technology enables complete traceability from origin to point of sale. This comprehensive tracking system enhances inventory management and allows for rapid responses to potential issues, such as **identifying and recalling defective batches**. By ensuring product safety and quality, businesses can strengthen consumer trust and improve operational efficiency.

RFID enables automated discounting for near-expiry products, reducing food waste while increasing profitability.





Sector by Sector: How RFID Tackles Challenges

Logistics and Supply Chains: Automation and Precision

In logistics, RFID implementation is revolutionizing **order and delivery management**. Automated verification systems integrated into outbound processes minimize errors, eliminate discrepancies between orders and deliveries, and improve operational efficiency.

Today, retailers face significant challenges with mismatches between the items ordered from their distribution centers (DCs) or stores and what vendors send from manufacturing sites. Implementing RFID on the vendor side for **outbound processes enables automatic verification, helping to avoid these mismatches**. Solutions like the RFID countertop station allow vendors to add a verification stage to their outbound processes without requiring more complex installations, such as RFID tunnels.

The automation of inbound and outbound processes is crucial, requiring appropriate solutions from a hardware and label perspective. On the hardware side, options such as RFID tunnels, cabinets, tables, portals, and overhead readers provide effective localization and tracking capabilities. On the label side, proper RFID tags with high readability, omnidirectionality, and durability are essential to ensure smooth operations.

Real-time traceability, enabled by RFID, allows transportation companies, such as the leading transport companies, to ensure accountability at every stage of the logistics process.

The tracking of **Returnable Tracking Items (RTI)** provides insights into the lifecycle of products, supporting new business models such as in-store product rental instead of traditional selling.





Sector by Sector:

How RFID Tackles Challenges

Beverages: Combating unauthorized distribution channels

The beverage industry faces the challenge of the **grey market**, where products being distributed in unauthorized channels affect both brands and consumers. **Digitizing bottles through UHF RFID ensures authenticity and traceability, protecting customer trust and brand integrity.**

Innovations such as BottleID™, an RFID-based solution, have solved the historical challenges that liquids posed to this technology. Thanks to labels designed specifically to perform in liquid environments, brands in wine, champagne and spirits can now fully benefit from RFID.

BottleID allows for precise tracking of each bottle through a unique identifier, enhancing traceability, distribution, and stock management.

Additionally, the integration of UHF RFID and NFC or QR codes opens new possibilities for consumer interaction, fostering loyalty and enhancing brand experience.





Regulatory Compliance & Sustainability

Compliance with **environmental and sustainability regulations is a priority for 2025 and beyond**. RFID tags could support the circular economy and traceability of the product's lifecycle. Solutions like **Digital Product Passport promotes circular economic processes, encourage sustainable sourcing and material use and increases transparency in the supply chain**.

Additionally, Digital Product Passport is emerging as a key legislation that provide comprehensive information about a product's lifecycle, from manufacturing to repair, reuse and end of life, facilitating compliance with environmental and quality standards.

In the European Union, regulations like the Packaging and Packaging Waste Regulation (PPWR) require all packaging to be reusable or recyclable by 2030. These regulations are driving the adoption of technologies like RFID to ensure efficient tracking right through to support information for recyclers.

In the United States, legislations such as the Food Safety Modernization Act (FSMA) requires advanced traceability in the food supply chain to prevent health risks.

RFID enables companies to meet these requirements by providing real-time data on product movement and conditions.

Regulatory compliance is not only an obligation but also a competitive advantage. Companies implementing RFID solutions can demonstrate their commitment to sustainability and transparency, earning the trust of consumers and business partners. Moreover, the ability to comply with global regulations allows companies to expand into international markets, ensuring their relevance in an increasingly demanding business environment.





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