

RFID - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts 2019 - 2029

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Report description:

The RFID Market size is estimated at USD 14.98 billion in 2024, and is expected to reach USD 26.01 billion by 2029, growing at a CAGR of 11.68% during the forecast period (2024-2029).

Key Highlights

- Supply chain management and logistics make widespread usage of RFID technology. Sensor-based RFID technology is being increasingly integrated into product packaging to track and trace the origin of the product and prevent any source of contamination or tampering within the supply chain. Logistics and transportation are major areas of implementation for RFID technology. Warehouse management, yard management, shipping and freight, and distribution centers are some of the areas where RFID tracking technology is usually used.
- Radiofrequency identification (RFID) primarily refers to a wireless system comprising two major components: tags and readers. The reader is basically a device comprising one or more antennas that emits radio waves and receive signals back from the RFID tags. The tags, which make use of radio waves to communicate their identity and other crucial information to the nearby readers, can be passive or active type.
- The passive RFID tags are mainly powered by the readers and do not have a battery. However, the active type RFID tags are powered by batteries. These RFID tags can store a wide range of information, right from one serial number to several pages of crucial data. The RFID readers are offered in a mobile form factor so that they can be carried by hand or can either be mounted on a post or overhead.
- One of the most common usages of RFID technology has been tracking goods in the supply chain, tracking parts moving to a manufacturing production line, tracing assets, security, and payment systems that let clientele pay for items without using cash. In addition, RFID is frequently used in the healthcare industry on patient wristbands to offer tamper-proof, exact identification for facility access control and security.

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-Moreover, multiple distribution centers and warehouses around the globe have been investing in improving their process efficiency to increase the efficiency of the overall processes as a part of their improvement programs. Such investments in the market landscape are anticipated to drive the growth and implementation of RFID technology.

-There has also been an increasing demand in the aviation sector for RFID labels, especially in providing enhanced services for passengers, such as real-time baggage tracking. According to Avery Dennison, implementing RFID-based labels in the Aviation industry has reduced mishandling rates by 13% and has cut ramp loading time by around 4 minutes per aircraft turn.

RFID Market Trends

Retail Segment is Expected to Hold a Major Market Share

- RFID in retail involves the utilization of RFID tags on items that emit signals to RFID readers, which are then processed by the software, providing real-time results for transactions, stock taking, inventory levels, or individual customer purchase order history. RFID in retail eases the typical retail inventory process, which is manual, time-consuming, and only performed at predetermined intervals. Item tracking is one of the major applications that retailers use RFID. RFID in retail can also be used to prevent theft and track items that are usually moved and often misplaced.

- Several companies have adopted RFID as an approach to control inventories. Leaders include Zara, H&M, Target, Macy's, Uniqlo, Nike, Adidas, Lululemon, Footlocker, Levi's, Tommy Hilfiger, Ralph Lauren, and Victoria's Secret. E-commerce is fueling much of the adoption, with high inventory accuracy levels required to support processes like store fulfillment and BOPIS (buy online, pick up in-store). More adaptive retailers are innovating new applications of RFID, such as streamlining omnichannel offerings, such as BOPIS (buy online and pick up in-store), as well as improving supply chain visibility and self-checkout.

- RFID-processed merchandise also makes factual data available to management. It may lead to smarter purchase decisions and give management better expense control, as inventory accuracy is crucial to lowering shrinkage, thus, better profits. Usage of RFID may improve overall merchandise management; accurate tracking of inventory and its location saves money. It also drives greater topline revenues, as it becomes easier to assure that sales are completed. Bottom line, adoption of the system ensures more profitable performance, as there is a more accurate accounting of the merchandise wherever it is stored.

- Retailers across the world have been making extensive use of RFID technology, especially in the Apparel business. The Canada-based company, Logistik Unicorp, has been using radio frequency identification as a tool to ensure that Canadian military uniforms are delivered swiftly, along with the guarantee of meeting strict quality requirements. It has been able to reduce the time required to ship goods by 35%. Such initiatives encourage new opportunities and developments and initiatives for RFID in the market and decrease the dependency on retail goods.

- The COVID-19 pandemic has increased challenges for retailers. The pandemic also pushed retailers to adopt RFID on a much larger scale. The pandemic became an accelerator of the digital transformation trend, which was already underway. Omnichannel retail strategies to meet the customers' needs on all sales channels became a priority for survival. RFID extended retailers' visibility of merchandise across the stores and the enterprise and distribution centers to meet ever-changing consumer demands.

Asia Pacific is Expected to be the Fastest Growing Market

- The Asia Pacific region is anticipated to hold a significant share of the market and is expected to witness significant growth over the forecast period. The rapidly increasing implementation and research work in the field of automation and a significant expansion of industry 4.0 have been driving the demand for RFID solutions in the region. The region's growth has been significantly driven by the increasing installation of these RFID systems in manufacturing units in order to improve productivity. The growing acceptance of electronic identity cards and RFID tags that are located in smart cards is also acting as a driver for the

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growth of the RFID market in the region.

- The expanding retail sector, along with the rising retailers' focus on embracing digital technologies in order to enhance the customer's shopping experience and optimize the warehouse management process, has also been one of the key factors contributing to the growth of the RFID market. RFID has been one of the efficient technologies used to handle goods and materials in the production environment. The expanding manufacturing landscape in the region, coupled with the increasing adoption of automation and Industrial Internet of Things (IIoT) solutions in the sector, has been propelling the market's growth. Also, the growing investments in asset management by organizations across various verticals and the rising need for contactless infrastructure coupled with government initiatives such as smart cities will further drive the growth of the market during the forecast period.

- Moreover, the public transportation sector is anticipated to be one of the areas in which the market is expected to expand over the forecast period. However, some restraints are limiting the growth of the market. The higher cost associated with installing RFID systems may challenge the market's growth. The device interoperability issues can also hinder the growth of the market over the forecasted period.

- Countries such as India are expected to witness a surge in the adoption of RFID technology as industries mature, and the COVID-19 pandemic is increasing the need for contactless solutions. The biggest boost for technology is also coming from the government side. For instance, in August 2021, the South Delhi Municipal Corporation (SDMC) announced that it mandated commercial vehicles to carry RFID tags to enter the national capital. SDMC has also issued a notice regarding the payment of toll tax or environment compensation charges, which can only be made through an RFID tag for commercial vehicles. Also, to protect inventory loss from shoplifting and theft, optimize store performance, and enable inventory intelligence solutions along with traffic counting, Chinese companies have been deploying RFID solutions in their clothing stores, cosmetics stores, supermarkets, and other retail stores.

- Moreover, in June 2022, Delhi Airport introduced a personalized baggage tag, enabled by radio frequency identification (RFID) technology, which will give passengers real-time information about when and on which belt is their check-in luggage arriving at the terminal.

- Furthermore, in March 2022, Vistara Airlines partnered with an Ireland-based company, ASD, to deploy RFIDAeroCheck technology for quicker scans ensuring accurate data and timely information regarding upcoming requirements.

RFID Industry Overview

The RFID Market is highly competitive and consists of several major players like Avery Dennison Corporation, Alien Technology Corporation, CCL Industries Inc., William Frick & Company, etc. The major players are focusing on expanding their customer base across foreign countries. The companies are leveraging strategic collaborative initiatives to increase their market share and increase their profitability. The competition, rapid technological advancements, and frequent changes in consumer preferences are expected to pose a threat to the market's growth of the companies during the forecast period.

- October 2022 - Avery Dennison Smartrac launched its AD Minidose U9 RAIN RFID inlay for pharmaceutical applications, unlocking critical RFID value for healthcare, pharmacies, and laboratory asset management. AD Minidose U9 is one of the smallest products on the market to receive ARC certification (Spec S) from Auburn University's RFID Lab and to be approved for use by the DoseID industry consortium.

- May 2022 - SML Group (SML), a digital identification technology and solutions provider, launched its Technology Innovation Development Center (TIDC), a first-in-Hong Kong Radio Frequency Identification (RFID) inlay Research & Development (R&D) center and production hub. The new center would be a part of SML's strategic long-term plans as it seeks to develop the technology ecosystem to power increasingly global operations that involve a growing pool of customers transitioning towards a digital-first future where every item will be tagged with a digital ID across markets.

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