RFID FOR RETAIL

By 2021
RFID Global Market is Projected to be worth

15.84 billion USD,

at a CAGR of nearly 9% over that forecasted period*

Global RFID Market 2017-2021 Report, by Technavio
RFID market was dominated by North America with around 44% shares of total market in 2014. A strong demand for RFID in North America is mainly stemmed from U.S. North America is followed by Asia Pacific and Europe. Retail, Healthcare and manufacturing constitute the most rapidly expanding sectors that would be instrumental in driving future demand for RFID technology.

Nike will tag all of its footwear and apparel and is using RFID in its corporate stores.

Source: Zion Research Analysis 2015
50% of retailers still not able to provide a single-view of their stock position in stores and warehouses.

$24.2 billion
Amount of capital North American retailers have tied up in additional safety stock to compensate for out-of-stocks.

56% online shoppers have encountered major problems in stores while picking up their online purchase.

46% of small businesses use don't track their inventory or don't have an automated method to track it. (Wasp Barcode State of Small Business Report, 2017)

Long and never ending queues at the point of sales terminals.

7 out of 10 retailers still not able to track and manage the product availability across channels.

Supply chain visibility is among the top strategic priorities of companies worldwide. (GEODIS Supply Chain Worldwide Survey, 2017)

75% U.S. adults that have experienced unavailability of an in-store product over the past 12 months. When this happens, 1 in 3 blames the retailer.
## Current Trends in RFID Implementations

### 50%
RFID technology cuts retail out of stocks in half

### 34%
Retailers Plan Investment
In real-time Inventory for 2021, 46% report either Working on it or Having the Tech in place

### 30%
Retailers already have or are implementing Item level RFID

### 31%
Accuracy with U.P.C. Data

### 99.9%
Accurate using RFID Tags to capture information

### Exploding acceptance of cloud computing is expected to accelerate the adoption of RFID technology

#### Zara
- Rolled out to 700 stores across 22 markets
- Mostly recyclable tags
- Real-time inventory view
- Plans to rollout to other Inditex brands
- Item level rate of sales in store and compare with online

#### Target
- Already deployed in 1600+ stores
- Helps find products quickly in store
- Higher BOPIS deliveries
- Leveraged to boost supply chain and in-store inventory visibility
- Enhancing the omni-channel retailing

#### Macy's
- RFID enabled merchandise fulfilment rate was 6.1% higher than non RFID
- Full price sales increased 2.1%
- Inventory markdowns decreased
- Display compliance improved for Women's shoe department from 30% to 4-5%
RFID Benefits

Key Drivers

- Real Time Inventory visibility’ Product Identification
- Supply Chain Visibility
- Smart Checkout
- Product Velocity
- Loss Prevention
- Omni-channel Fulfillment
- Experience Enhancers
- Brand protection

Store & WH Use Cases

- Counterfeiting
- Loss prevention
- Product locator
- Stock Replenishment
- Traceability
- Inventory Accuracy
- Automated Checkouts
- Clienteling
- Marketing and Promotions
- Connected Trial rooms
- Social shopping

Derived Benefits

- Product and Asset Tracking
- Smarter and faster checkouts
- Staff productivity
- Product Authenticity
- Customer experience
- Replenishment accuracy
- Better Risk management
- Faster sorting and picking
- Seamless Order fulfillment
- Omni-channel experience
- Lower inventory costs
Item level RFID Benefits

- Item level RFID assists in retail operations within a store with its traceability
- Smart automated check-outs at the cash register or more accurate POS data can also be implemented when the products have RFID tags
- Increase product availability on the shelf, and decrease the number of out-of-stock (OOS) events
- Accuracy of both store orders and backroom-to-shelf process
- It’s a significant contributor to Data Analytics platform for
  - better understanding of the customer behavior,
  - Improved execution and experience

- Converge Digital Product Content
- Connected Dressing Room
- Inventory Accuracy and stock Mgmt
- Fraud and Loss Prevention
- Smart Checkout
- Optimized Product displays
- Loyalty
- Product Location
TechM's RFID Solution

ESL Gates

ESL Base Station

RFID Reader

ESL TAGS

I - Tek Shell

Back of Store

RFID Inventory
Dashboard & Analytics

Features of Handy
Warehouse operations assisted by RFID

- **Tagging**
  - Soft tag
  - Hard Tag

- **Put Away**
  - Bay
  - Aisle Location

- **Dispatch**
  - Picklist
  - Location
  - Pallet

- **Inventory**
  - Location tag
  - Pallet tag
  - Item tag
Key Considerations in RFID implementations

Building RFID Framework is crucial as they are part of the data collection ecosystem, hence for better understanding of the various stages of the RFID implementation process.

Evaluation process with assessment methods for RFID systems.

Policies to shortlist on equipment’s and applications for RFID integration.

Selection of RFID - considering their performance, quality, technical support availability, integration services etc.

Security features supporting data confidentiality and compliance (GDPR).

Site survey for:

- RF Spectrum Analysis to search for any interfering or competing signals.
- RFID tag testing.

Collaborate with experienced, reputed system integrators and Vendor to achieve the benefits of reduced operations cost, inventory and labour costs etc.
Key Considerations in RFID implementations

- Selection of middleware, enterprise applications and decision support systems for RFID can provide data to identify problems and can be the catalyst to address problems, that work in real time is a MUST.

- Training of the staff to embrace the new technology, and propagate real time thinking.

- RFID is a fast evolving technology and various factors affecting an implementation might change quickly, hence periodic assessment of the deployment must be included as a Process.
Call us today to estimate the RFID ROI for your business

### RFID Retail Solution - ROI Estimator

**Dashboard**

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount (in USD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Investment / store (for 3 years)</td>
<td>46K</td>
</tr>
<tr>
<td>Total Benefits / store (for 3 years)</td>
<td>180K</td>
</tr>
<tr>
<td>Chain wide total Investment (for 3 years)</td>
<td>255M</td>
</tr>
<tr>
<td>Chain wide total Benefits (for 3 years)</td>
<td>730M</td>
</tr>
<tr>
<td>Payback (in Months)</td>
<td>7</td>
</tr>
</tbody>
</table>

**Benefits of RFID Solutions**

1. **Reduction in Shrinkage**
   - Reduction in Shoplifting: 20%
   - Reduction in Employee theft: 20%
   - Reduction in Paperwork errors: 60%

2. **Reduction in Labour Hours**
   - Reduction in Staff enquiry cost: 36%
   - Reduction in Stock keeping time: 75%
   - Reduction in security & surveillance cost: 28%

3. **Increase in Inventory Turn over**
   - Reduction in Failed Sales: 10%
   - Leaner inventory: 5%
   - Reduction in Obsolescence Cost/Mark down cost: 0.10%

4. **Increase in Revenue/Sqft**
   - 5.00%

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### Cost Benefit Analysis/ Store

- **Red**: Total Cost attributable to RFID in (USD)
- **Orange**: Total Benefits per store (in USD)

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Cost</th>
<th>Total Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>YEAR 1</td>
<td>34,274</td>
<td>57,168</td>
</tr>
<tr>
<td>YEAR 2</td>
<td>60,026</td>
<td>60,026</td>
</tr>
<tr>
<td>YEAR 3</td>
<td>60,026</td>
<td>60,026</td>
</tr>
</tbody>
</table>
Leading Apparel retailer benefitted with the implementation by item level tracking at the store level, stock taking, source tagging, DC operations etc.

<table>
<thead>
<tr>
<th>Feature</th>
<th>Before</th>
<th>After RFID</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inventory Accuracy</td>
<td>75-80%</td>
<td>97-99%</td>
</tr>
<tr>
<td>Omni-Channel Fulfilment</td>
<td>65%</td>
<td>99%-100</td>
</tr>
<tr>
<td>Picking for Omni-Channel</td>
<td>24-48 hours</td>
<td>Less then 4 hours</td>
</tr>
<tr>
<td>Manpower Tagging</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>Safety Stock for Omni-Channel</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Frequency of Physical Inventory</td>
<td>Once a year</td>
<td>Every Day</td>
</tr>
<tr>
<td>Time Taken for Physical Inventory</td>
<td>2 Days</td>
<td>2 Hours</td>
</tr>
<tr>
<td>Shrinkage Visibility</td>
<td>Twice a year</td>
<td>Every Day</td>
</tr>
</tbody>
</table>
INTEGRATED ENGINEERING SOLUTIONS (IES)

Is a Connected Engineering Solutions business unit of Tech Mahindra. At Integrated Engineering Solutions, customers are at the core of every innovation. We align Technology, Businesses and Customers through innovative frameworks. We deliver future-ready digital convergence solutions across Aerospace and Defense, Automotive, Industrial Equipment, Transportation, Consumer Products, Energy and Utilities, Healthcare and Hi-Tech products. Our ‘Connected’ solutions are designed to be platform agnostic, scalable, flexible, modular and leverage emerging technologies like Networking, Mobility, Analytics, Cloud, Security, Social and Sensors, that enable launching of smart products and deliver unique connected consumer experiences, weaving a connected world. Coupled with this, our strong capabilities in Electronics, Mechatronics and Mechanical Engineering along with domain understanding and product knowledge, bring excellence to the entire lifecycle of these connected ecosystems.

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