

RFID Asset Tracking



As the business case for RFID utilization in the personal property arena develops, asset management will likely adopt this methodology to implement asset tracking applications with RFID technology. Fixed assets are often one of the most neglected areas of compliance. Records are commonly incomplete and most companies have a very incomplete picture of what assets they do own. Wall-to-wall inventories when compared to the fixed asset ledgers invariably differ. Thirty percent of assets on the books no longer exist, partial retirement of complex assets never get recorded, and optimal asset utilization cannot be achieved without good data on which to base one's decisions. Business challenges in asset management can be categorized as:

- **Manufacturing**
 - **Product Recalls**
 - Inability to accurately identify what lots to recall
 - Limited knowledge of pedigree information
 - **Production Inventory**
 - Resulting in more scrap
 - Limited manufacturing visibility at process level
 - **Defect Tracking**
 - Inefficient quality tracking resulting in low yield
 - Inability to quarantine defective parts at point of failure
 - **Manufacturing Throughput**
 - Inefficient machine utilization
 - Longer manufacturing cycle times
- **Distribution**
 - **Inventory Availability**
 - Inaccurate inventory stock
 - Inventory shrinkage
 - Limited work-in-process visibility

- **Order Delivery**
 - Inaccurate order receipts & fulfillment
 - Delayed proof of receipts & delivery
 - Short-receipts and miss-shipment of merchandise
- **DC Performance**
 - Inefficient utilization of warehouse resources
 - Higher labor costs resulting in higher costs of processing an order
 - Loss of productivity
- **Service Management**
 - **Asset Inventory**
 - Inaccurate asset inventory
 - Longer cycle count times
 - **Asset Maintenance**
 - Inefficient service and maintenance process
 - Shrinkage and underutilization
 - **Asset Security**
 - Higher risk of liability due inefficient traceability
 - Limited security audit and traceability, legal compliance OSHA, JCHAO, HIPAA, SOX

Why RFID Asset Management:

The promise of RFID is total visibility in real time of individual parts through production to purchase or even disposal. This visibility promises to lower manufacturer's losses due to theft or counterfeiting, increase the on-shelf availability of products, allow tainted foods to be tracked back to their point of origin and provide consumers with item identification for recall or warranty purposes. Fixed Asset visibility could also provide an up-to-date, real-time inventory of personal property assets at any moment.

RFID does not require specific orientation or line-of-sight to gather data thereby minimizing human error potential while offering greater automation opportunities, higher read rates, greater read accuracy and longer read ranges. Retail adopters plan to lower supply chain costs, reduce theft and counterfeiting, and improve product restock rates. Thus RFID can play a vital role in the following area of concern:

- **Automated Check-in/Check-out:** With Check-in/Check-out, asset managers have complete control and visibility over each and every asset moving in or out of an area. Check-in and Check-out can be implemented both to process one asset at a time or multiple assets (when the large numbers of assets are moving in or out of the facility). Dashboard can be used in such cases to monitor the asset movement.

- **On-Demand Asset Visibility:** Online dashboard can be developed for Asset managers with the flexibility to monitor the assets in real time from any remote location.
- **Location Maps:** By uploading floor maps of the facility, users will be able to tighten asset control and accountability by knowing exactly where each and every asset is with respect to the physical layout. Users will be able to zoom in any chosen map area to get detailed information and real time positions of the assets. On the other side users can search for a particular asset using its id or name and can locate its position.
- **Asset Violations and Exceptions:** Dashboard provides users with the ability to take action on asset violations as they occur. Alert messages are displayed for all assets that do not conform to company defined business rules and users can drill down to detailed information behind each alert.
- **Alerts:** Alerts and notifications engine can be built to raise different types of notification they would like to receive when one or assets enter or exit a zone that they are not supposed to. Based on the user requirement many more alerts can be defined where any particular asset not present in a group or some unexpected asset if found in a group of asset.
- **Inventory Management:** Empowers users to conduct inventory audits and take inventory of all tagged assets within a facility or at any remote location. Users can now manage inventory with greater accuracy and speed. Asset managers can generate different flavors of asset inventory reports for one or more locations and drill down to granular asset information for a given time period or asset types.
- **Asset History:** Asset history reports provide managers with complete traceability of one or more assets. Users will be able to learn how a given asset moved through the facility for a given time period.
- **Asset Utilization:** Asset utilization reports provide users with the ability to calculate asset usage. These reports not only provide asset usage patterns but also help asset managers track asset maintenance and repair.
- **Asset Maintenance:** These reports provide asset managers with information that help them manage preventive maintenance based on service level agreements by facility and asset types.

Challenges!

- Technical issues such as signal interference, competing standards and regulatory differences most likely will be solved as RFID technology improves and the industry matures. The social issues will be harder to overcome.
- RFID's reduced effectiveness on metal containers and packaged liquids will be minimized through improvements in RFID and packaging technologies, experimentation in tag and read/writer placement, and engineering solutions.
- One primary concern with RFID tracking systems is the amount of data generated. Business users need to be prepared for the volume and determine the best way to use it. This data explosion must be considered during the planning phase.

Future of RFID Asset Management:

RFID technology will continue to mature with a fair number of early adopters. However, adoption will probably not proliferate until global standards emerge and become widely accepted. Costs will need to continue to fall to levels comparable to current technology formats used today, i.e., barcodes. In the case of privacy concerns, asset management and asset tagging is not likely to become a significant issue; although access control and identification with RFID will continue to raise a few eyebrows.

Affixing asset smart tags or labels in an office, lab or controlled-access environments would be an obvious application. These tags could serve both as asset tags and as security tags if/when an RFID-enabled security system is deployed.

In the manufacturing environment, an RFID specialist would probably need to be involved to determine the environmental challenges, frequency interference levels, factory or office layout, business process, appropriate data collection methods and locations. Undoubtedly, this list just begins to touch the surface of all the factors to be evaluated and considered. RFID will continue to emerge and companies will need to remain in touch with the many developments. In the case of Asset Management, expect to see real-time integration across the enterprise in the future.