RTLS Delivers For Material Handling & Logistics

Companies implementing real-time locating systems have reliably earned high ROIs in a wide range of applications and industries.

According to VDC Research, which surveyed over 350 companies that implemented RTLS:

- More than 80% of implementing companies achieved payback within 18 months
- More than half achieved payback in 12 months or less
- All companies improved asset utilization by 20% or more
- Nearly half improved asset utilization by 40% or more
- All companies reduced operating costs by more than 9%
- Half reduced operating costs by more than 30%.

FOR MORE INFORMATION ON VDC RESEARCH’S REPORT ON RTLS, CLICK HERE.
RTLS Delivers Consistent Savings in MHL

Among the uses of RTLS that consistently provide particularly substantial savings are material handling and logistics (MHL).

As companies implement LEAN manufacturing and logistics processes, the value of tracking assets in real-time increases—and for some it becomes mission-critical. In logistics and material handling, RTLS reduces the wastes of unnecessary movement, unnecessary transportation, lost inventory, waiting and line stoppages. Moreover, integrated RTLS and related software make warehouse management (WMS), manufacturing execution systems (MES) and enterprise resource platforms (ERP) more effective and beneficial.

RTLS improves processes across all major functional areas of MHL: receiving, put-away, manufacturing replenishment, picking, order staging, shipping, yard management, WIP tracking, finished goods quality testing, returnable rack and container tracking, and warehouse management. RTLS delivers efficiencies and savings in each major area. For example, when integrated with a WMS, RTLS delivers:

Operational labor savings — Orders get filled faster by eliminating product search time plus streamlining the put-away, picking, staging and consolidation processes. In addition, an automated map for each forklift or cart operator cuts a few more seconds off of every move.

Incentivized performance gains — Since RTLS precisely measures the performance of staff, RTLS enables incentive systems that improve productivity even more.

Inventory reductions — RTLS can dramatically improve inventory accuracy, which enables reducing safety stock and freeing up working capital.

Space savings — RTLS makes staging and consolidation of orders dynamic and flexible, which speeds order fulfillment and frees up staging space.

Facility capacity/throughput gains — When orders get filled faster, and space is freed up, throughput accelerates and the total capacity of the facility increases. Warehouses with significant staging areas can receive significant gains; facilities with sizeable yards can receive dramatic gains.

Asset utilization — As RTLS-enabled processes speed fulfillment of orders while decreasing inventory, the productivity of assets increases.

Line stoppage reduction — RTLS-enabled systems streamline and prioritize replenishment of parts to factory lines. When the factory floor’s need for a particular item reaches a replenishment point, an assembler presses a button on a nearby RTLS device. The system then prioritizes the request and directs a picker to replenish that item in time.

Expedited service cost reductions — Because RTLS keeps accurate inventory and prevents lost inventory, it enables on-time procurement and reduces expedited procurement. In addition, when customers pay for expedited deliveries, RTLS automates and reduces the costs of prioritizing and speeding picking, staging and shipping.

Non-value-added labor reductions — By eliminating or minimizing lost inventory, search time and location-finding time, and streamlining processes, RTLS reduces non-value-added waste.
Safety improvements — Since RTLS-enabled systems direct operators along paths that avoid congestion, accident rates drop. Since RTLS reduces clutter, accident rates drop even more. Since the system streamlines order staging and consolidation, accident rates drop still further.

Equipment tracking and management — RTLS can track equipment as well as inventory, eliminating time wasted searching for it.

Flexibility gains — By making picking, staging, replenishing and consolidating processes dynamic, RTLS makes those processes flexible. When a company has flexibility to react efficiently on the fly to changing customer needs, it becomes a more dependable and valued company.

Supplier relationship improvements — Most companies start out using RTLS within their own operations because it makes ROI sense and getting suppliers to put tags properly on shipment containers would delay those gains. However, if, over time, suppliers learn to apply RTLS’ RFID tags properly, they can cut their own costs of serving your organization, which can then be turned into procurement savings. Moreover, when suppliers apply tags, the cost of receiving drops.

Continuous improvement acceleration — Since RTLS measures MHL operations precisely, it provides data that identifies areas for improvement. It also provides data that verifies that targeted improvements were achieved — and continuously maintained.

RTLS in Logistics Improves Customer Satisfaction

Since RTLS provides location and status information, it speeds picking, staging, consolidating, packing and shipping customer orders. It improves flexibility for accommodating last-minute changes to customer orders. It also makes order fulfillment more accurate. Item-level RTLS can also speed scan-and-pack, which assures that orders are filled accurately.

By reducing errors, RTLS yields more accurate invoicing and less non-value-added time adjudicating disputes.

When customers learn to rely on your company’s accuracy and speed, they learn to trust your organization. Then customers reduce safety stock on your goods, which makes you a more profitable supplier.

That yields top-line improvements as well as operational cost reductions.

RTLS Takes Lean to a New Level

Android Industries is probably the world’s premier module assembler and sequencer. It manufactures complex modules such as engines, instrument panels and auto suspensions. Moreover, Android delivers them to OEMs at the right time (which can be just 2 hours from receiving an order) and in the right sequence for the OEM’s just-in-time operations.

While major American competitors of Android have succumbed to outsourced manufacturing in low-wage countries, Android has expanded profitably while paying American wages. It has thrived based on its world-class lean and flexible manufacturing processes, technology, and innovative continuous improvement initiatives.

To take its already-world-class lean manufacturing to a yet-higher level, Android obtained real-time visibility to entire facilities using RTLS. With RTLS, Android automated its entire material flow and replenishment system to increase speed, reduce waste, and gain both flexibility and scalability.
How Android Achieved It All

Android’s RTLS system includes WhereNet technology wireless tags at storage and staging locations throughout its factory/warehouses. When someone needs more material, that person scans a barcode or pushes a wireless button that communicates to the system what material is needed and where. The system automatically prioritizes the request, then assigns picking and delivery of the material to a specific forklift or cart operator. It also selects and communicates the best route for the operator to take.

Each material handling operator has a scanner and mobile terminal. When an operator reaches an assigned pickup or delivery location, he/she scans the item being picked or delivered, and the system immediately alerts the operator if he/she is making an error — another way of reducing waste.

For more information about Android’s RTLS operation click here.

Adding Both Speed & Flexibility — the New Paradigm in Warehouse Management

By integrating RTLS with its WMS, Zebra Technologies transformed its processes for picking, staging and consolidating orders. The system delivered productivity gains, space savings, increased throughput and capacity, improved safety, and flexibility to adjust to ever-changing business needs.

The results were impressive. The RTLS-enabled system:

- Reduced labor by 4%
- Reduced use of mobile equipment by 10%
- Eliminated the need for stock handlers to pull and flag containers for forklift operators
- Integrated real-time performance and planning data with Android’s existing MES
- Accelerated forklift delivery speed by minimizing congestion and automating selection of forklift routes while maintaining Android’s world-class achievements in safety
- Improved Android’s ability to accommodate customers’ changing just-in-time delivery needs with speed, accuracy, and efficiency
- Improved Android’s ability to accommodate customers’ increasingly complex modules with scalable, flexible, and lean operations.

Accelerated Continuous Improvement Success

One of the greatest gains enabled by RTLS was providing Android’s continuous improvement process with a large new source of extremely accurate performance data about people and processes.

The RTLS data allows Android teams to identify innovative opportunities for improvement, take more waste out of material handling and logistics processes— and measure the actual improvements with extraordinary efficiency and accuracy.

According to Android’s Dirk Cranney, “We haven’t tapped all the potential elimination of waste via RTLS. Our continuous improvement initiative will keep improving performance. Moreover, as we scale our operations, the RTLS system will deliver increasing efficiencies.”
The project created a new paradigm in material handling and logistics.

More specifically, the RTLS-enabled system:

- Enabled multiple pickers per order
- Eliminated staging order search time
- Minimized clutter and congestion in aisles and floors, speeding picking and delivery while increasing safety
- Streamlined staging and consolidation processes dramatically, adding flexibility as well as speed and savings—dynamic staging saves an average of 3 minutes for every drop after the first
- Reduced the space needed for staging by 40%
- Delivered total savings that paid back the RTLS investment in six months—even figuring in the prices a customer would pay for an identical RTLS system
- Improved on-time shipping, which improves customer satisfaction.

After such dramatic success in its U.S. facility, Zebra immediately implemented RTLS in its European facility. The European facility is now achieving similar gains.

Speed of implementation increased ROI. Zebra used its System Builder Tool to map the wireless warehouse network virtually, considering locations of metal racks and other things that inhibit radio signals. The tool streamlined the traditional task of painstakingly (and gradually) measuring signal strengths throughout the entire warehouse and factory.

How Zebra Achieved It All

When a factory-floor/reconfiguration area associate completes a WIP unit, he/she pushes a button on a WhereCall RTLS tag. That wirelessly signals the system, which directs a warehouse operator to retrieve and put away the completed unit. Rules in the WMS determine the best location for the unit being put away.

RTLS-enabled WMS provides more efficient picking, too. RTLS tags in the staging area direct operators to the correct location. By viewing scanner screens, operators find the targeted RTLS location with an accuracy of one foot or less.

In the staging area, color-coded traffic cones that contain RTLS tags make it easy to see the route to the proper staging location quickly. A traffic cone gets placed on top of the order being staged, identifying the location for the next operator staging the next part of the order. When the order is complete, the traffic cone is temporarily removed as the order gets shrink-wrapped. Then the cone is placed on top.

When operators arrive at a pick or staging location, they scan a location bar code. If an operator is in the wrong location, the WMS alerts the operator via an error message on the scanner.

According to Gary Meekma, Zebra’s Senior Manager Warehouse Operations—North America, “Deploying RTLS has helped us ‘turn the lights on’ within our warehouse operations. We are better than ever before.” For more information about Zebra’s RTLS implementation, click here and here.