



Toyota Material Handling Uses Zebra MotionWorks Enterprise to Boost Productivity

Industrial Manufacturer Improves Visibility into Workflows to Streamline Operations and Enhance Customer Service

Challenge

A large-scale industrial equipment manufacturing plant is a challenging environment for a real-time location solution. Along the facility's many conveyor lines and assembly stations, dense metallic steel is formed, pressed, drilled, laser-cut and spot welded by heavy machinery. Each process is done simultaneously, which generates high decibels of noise that can disrupt the signals and flight times of the solution's ultra wideband (UWB) sensors and tags. The loud environment poses a series of technical hurdles making it difficult to leverage real-time location technology.

Toyota Material Handling faced that exact challenge when it partnered with Zebra to integrate MotionWorks Enterprise within a quarter of its 1.3 million square-foot manufacturing plant. The company sought to build the foundation for a "smart factory" that would drive its just-in-time delivery to customers by increasing product visibility and streamlining workflows. This section of the facility is responsible for producing 180 industrial trucks per-day, so products are susceptible to misplacement amidst the whirlwind of daily operations. The solution needed to fully integrate with Toyota Material Handling's existing technology infrastructure to allow the company to quickly alleviate disruptions and delays by monitoring – and ultimately enhancing – response times on a second-by-second basis. The end-goal was to ensure products flowed from Point A to Point Z with complete transparency so the company could provide excellent customer service synonymous with the Toyota Production System core value of Jidoka – the Japanese term for "built-in quality."

SUMMARY



Customer

Toyota Material Handling
Columbus, Indiana

Industry

Manufacturing

Challenge

Toyota Material Handling needed real-time product visibility to enhance the operational efficiency of its manufacturing plant

Strategy

- Hosted Enterprise Discovery Workshop
- Assessed Needs of Facility
- Collaborated to Develop and Design a Blueprint

Solution

- Zebra MotionWorks Enterprise
- Zebra Ultra Wideband Tags
- Zebra RFID Sensors

Results

- Automated Analysis of Product Flow Disruptions
- Increased Employee Productivity
- Streamlined Workflows
- Enhanced Customer Service

SUCCESS STORY

MOTIONWORKS ENTERPRISE AND TOYOTA MATERIAL HANDLING

Real Problem Solving

Another Toyota Production System core value is Genchi Genbutsu, a Japanese problem-solving concept that translates to “real location, real thing” and “go and see.” In the spirit of Genchi Genbutsu, Toyota Material Handling began the strategic process by hosting Zebra’s team of engineers for an on-site consultation at its facility. Through the MotionWorks Enterprise Discovery Workshop, Zebra and Toyota Material Handling identified the foundation of the company’s needs to ensure the solution infrastructure and UWB sensors and tags were optimized for the use-case. Over a three-week span, Zebra and Toyota Material Handling worked side-by-side to assess the facility’s programmable logic controllers and line conveyors, troubleshoot technical challenges, and develop a design blueprint for how MotionWorks Enterprise would generate a holistic view of the facility, as well as the precise locations of the sensors and tags. In adhering to each step of the process without cutting corners, Zebra and Toyota Material Handling were able to solve installation challenges to ensure performance goals could be met.

Zebra and Toyota Material Handling seamlessly installed the MotionWorks Enterprise infrastructure without disruption, leveraging existing Application Programming Interfaces (APIs) to create order number associations and product statuses. More than 400 UWB tags were deployed to manually operated forklifts, and 60 RFID sensors were meticulously placed in predefined areas that minimized the possibility of obstructions. In the event of an abnormal excursion, employees would scan the forklift’s UWB tag with a Zebra handheld mobile scanner to access reports and graphs of its previous movement data, which revealed actionable insights on the location and cause of the excursion. Then, employees could use those insights to take corrective action and prevent future disruptions.

“Zebra’s experience in the manufacturing space helped guide us through technical hurdles within our facility. By hosting their team on-site at our facility, we worked together to solve challenges and put planning to action. It was a no-brainer to make an investment with Zebra.”

Steven Norman,
Toyota Material Handling



SUCCESS STORY

MOTIONWORKS ENTERPRISE AND TOYOTA MATERIAL HANDLING

Visibility Leads to Productivity

After a flawless consultation, design and implementation process, it became apparent that the partnership between Zebra and Toyota Material Handling was a perfect fit. For eight months, Toyota Material Handling has utilized the real-time product flow visibility provided by MotionWorks Enterprise to make continuous improvements to maximize efficiency and customer service quality. The company was already using Zebra's mobile scanners, so employees were previously familiar with these tools. The only added task was attaching and detaching the tags on each forklift, which approximated to four seconds per-associate. By automating root-cause analysis of workflow disruptions, MotionWorks Enterprise empowers Toyota Material Handling's staff to focus on more high-level responsibilities.

The company's long-term vision includes expanding its use of MotionWorks Enterprise for production, parts delivery and distribution to optimize the tracking and tracing of its entire value stream. The expansion will enable Toyota Material Handling to perform detailed location monitoring that ensures every product moves efficiently from the initial manufacturing stage to the last mile of just-in-time delivery.



“Every interaction I’ve had with the Zebra team has been positive with a spirit of determination. Zebra has a proven history with manufacturing solutions and the company’s perseverance was so important to driving success in any project we were going to engage in.”

- Steven Norman, Toyota Material Handling

To learn more about how Zebra MotionWorks Enterprise can benefit your company, visit our [webpage](#).



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