



C.H. ROBINSON



Technology & Electronics Solutions

CASE STUDY

Teradyne improves supply chain efficiency with merge in transit program

CHALLENGE

Teradyne is a leading supplier of automation equipment for test and industrial applications. In this industry, having the shortest time to market is critical. Teradyne must continually balance logistics costs against fast transit times while ensuring the product arrives in good condition.

SOLUTION

Teradyne has a robust supply chain strategy that includes a merge in transit program. C.H. Robinson helps support that strategy by planning and shipping oversized components and just in time (JIT) freight, consolidating orders in Taiwan before shipping to final destinations.

RESULT

By leveraging its strategy, Teradyne has been able to increase freight volumes over the past four years from 8 million kgs to 12 million kgs, while reducing costs significantly during the same timeframe.

TERADYNE

Teradyne Group is a leading supplier of automation equipment for test and industrial applications. The company's Automated Test Equipment ("ATE") products are used to test semiconductors, wireless products, data storage and complex electronic systems for consumer, communications, industrial, and government customers. In 2017, Teradyne had revenues of \$2.1 billion and employed 4,500 people.

Central to the company's reputation—and to their competitiveness in the market—is achieving the shortest time to market and having the product arrive in good condition, which can be challenging with oversized freight.

When Kendrick Ng, Global Logistics, joined Teradyne in 2013, the ATE division had a merge in transit program supported by C.H. Robinson. The program streamlined handling of the company's oversized crates of equipment and made it easier to manage capacity and transit times while minimizing damage. At that time, equipment components from the U.S. and China were transported by air into Taiwan and other locations and then merged onto a single truck for final delivery.

Working together, Teradyne and C.H. Robinson identified opportunities to continue strengthening the supply chain strategy. Ng said, "It's part of Teradyne's DNA to look at cost, balanced against transit times and getting the product to its destination in good condition. We want to avoid unnecessary costs and do things better each time."

With a significant amount of equipment being shipped on demand via air, Ng wanted to provide more visibility internally to the cost implications associated with air freight. Ng said, "Air freight is carbon-heavy, inefficient,

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GLOBAL LOGISTICS,
TERADYNE

and expensive. We had to improve our understanding of what the various divisions needed for transit times and then begin advising as to which modes would be most effective.”

By refining the merge in transit program and reducing reliance on air shipping, Ng believed Teradyne could increase efficiencies and further reduce supply chain costs. Ng said, “For our program to work effectively, we would need consistent transit times, both for the oversized freight and the products we needed to supply consistently.”

Together, Teradyne and C.H. Robinson developed a reliable plan that would significantly reduce the amount of air freight required and still maintain a quick time-to-market environment. Now, C.H. Robinson works to ensure ocean transit times are consistent and that the freight arrives in time through the merge in transit program to meet customer needs. “The C.H. Robinson team smooths out the issues very quickly and monitors the shipments,” Ng said. “They collaborate with stakeholders and vendors so everything will merge properly at the warehouse. They pay attention to every detail and maintain the integrity of the solution, even when ocean carrier alliances change.”

The benefits have quickly made an impact. Ng said, “Every year, just by moving shipments from air to ocean, we save a significant amount of money. In addition, our planning caters to six weeks, which requires highly consistent schedule integrity. We can store inventory, but most is floating, so we don’t have to pay for additional warehouse storage in Los Angeles or Taiwan.” By keeping inventory in transit, Teradyne provides customers with a single, complete delivery. In addition, while separate components are dutiable when imported, components that are merged in transit can be cleared as a “system” with no duty, increasing the company’s savings.

“Teradyne has always had a strong approach to their supply chain,” says Stream Xi, C.H. Robinson account manager. “However, they have proven that investing in continuous improvement and identifying new and innovative ways to improve their supply chain can make a real impact.”

EXCEPTIONS MANAGEMENT

In addition to identifying opportunities to leverage cost-effective shipping modes, Ng also realized there were opportunities to improve how exceptions were managed. Some equipment is shipped in crates fitted with four labels that detect potential damage. If the shock watches are triggered

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by the time the equipment reaches Taiwan, the product must be returned to the U.S. for examination. To do so, Teradyne expedites the equipment at a higher cost to ensure it arrives in time to be consolidated.

Upon investigation, however, multiple physical audits showed that sometimes, no internal impact to the equipment had actually occurred. The Quality team at Teradyne agreed to relabelling in situations of this type. C.H. Robinson now checks for external damage at the Taiwan warehouse, communicates their findings, and obtains Teradyne’s authorization to change the labels if the equipment is determined to be undamaged. This protects Teradyne’s reputation for quality and eliminates the inconvenience and cost of shipping the equipment to the U.S. to perform unnecessary checks.

THE BENEFITS OF A GLOBAL RELATIONSHIP

The relationship between Teradyne and C.H. Robinson continues to grow. “Many initiatives are cost driven,” Ng explained. “If assistance from C.H. Robinson’s offices in the U.S., Europe, or Asia is required, our local Shanghai team handles the communication.” C.H. Robinson has developed an understanding of Teradyne’s business and understands when shipments move, how they are routed, and how to allocate costs. The requirements can be dynamic and flexible, but with established standard operating procedures, the team is able to anticipate what Teradyne needs.

“C.H. Robinson provides real value. The team is always looking for ways to drive down costs, even if shipments must be transported by air freight. Whenever C.H. Robinson can lower the costs from their own suppliers, they pass the savings on to us,” Ng said. “They provide value in their initiatives and their collaboration with us, as well as in their ongoing efforts to drive down costs.”

To develop a sustainable, long-term relationship, Ng believes that shippers and their providers need to share the 3C’s: communication (share and align strategy), collaboration (shared benefit, a.k.a. win-win), and commitment (shared risk looking to future investments and benefits).

To learn more about Teradyne, visit their website [here](#).

To learn more about C.H. Robinson, [watch our video](#), visit our [website](#), call 800-323-7587, or email solutions@chrobinson.com.