Complete Integration

Plexus Online helps Honda supplier TOMASCO mulciber, Inc. integrate systems, optimize inventory and secure ISO certification

Plagued by EDI problems, inventory issues and short shipments, TOMASCO, a Japanese joint venture company for the Honda supplier system, finally decided it was time for a new Enterprise Resource Planning (ERP) system. Understanding that complete system and platform changes are initially time-consuming and expensive, the Columbus, Ohio automotive metal stamping and welding company felt it had no choice--it had reached the point where it had to change.

 "We weren't meeting our customers' needs," says Marty Staats, Assistant Vice President of the Supply Chain Group for TOMASCO. "We had to get our inventory, especially our work-in-process, under control. We didn't know how much we had or where it was at. We'd end up consuming our safety stock. We were also missing shipments due to incorrect requirements data within our system.

"Thanks to Plexus Online, we've moved from a reactionary company focused on day-to-day issues to a proactive company. We now work with real-time inventory, which has reduced our inventory by 20 percent. We've reduced our work-in-process inventory by 40 percent, and optimized our finished goods inventory, which was our goal. As a result, our shipping performance has improved dramatically. Our EDI system is fully integrated throughout the company and is easy to use and update. With Plexus, everything operates in real time, and we haven't had any problems staying current with changes in Honda's EDI.

COMPANY: TOMASCO mulciber INC.

BUSINESS:
 Metal Stampings and Weldings

SECTOR: Automotive

CHALLENGES:
 Honda's Delta certification
 Systems Integration
 Inventory controls
 Process controls
 Raw material/parts traceability
 Short shipping

SOLUTION: Plexus Online

RESULTS:
 Honda's Delta and ISO 9000
 certifications achieved

 An integrated system providing real-time data to all departments

 Inventory reduction of over 20%

 Work-In-Process reduction of over 40%

 Ability to trace down to a container of 30 parts

 100% shipping achieved

We no longer have to wait until the end of the month to see where the problems are--we see them immediately. We couldn't have achieved the ISO certification without Plexus or met Honda's 100 percent traceability requirement. Plexus has worked extremely well for us."

With a mission to find and implement a fully integrated ERP system, TOMASCO began analyzing its business processes in February 2002. Karen Patterson of the IT consulting firm Revolution Group was hired to develop a detailed flow chart of systems-based activity and process flows to pinpoint exactly what TOMASCO should require from a new ERP system. The four-month-long analysis evaluated 40 separate business processes and identified 131 manual processes, 69 independent databases, 88 duplications of effort, and four interfaced databases. TOMASCO was using 14 different software products on four different platforms. This type of patchwork system is typical in manufacturing, but TOMASCO didn't want to be typical. It wanted to be state-of-the-art.

By July 2002 TOMASCO had developed an RFQ. Its goal: secure a complete, fully integrated software system to effectively manage all aspects of TOMASCO business processes. The system had to be progressive, cost effective and easy to implement. It also had to be certified by Honda. TOMASCO knew exactly what it needed, but did such a system exist?

Patterson began to search for the ideal software system. She identified 12 prospective vendors and narrowed them down to three. Plexus Online was among the finalists invited to conduct a two-day demonstration of its software capabilities.

"We were looking for a system that offered complete integration, including EDI, release accounting, and barcode printing," Patterson says. "Of course, the vendor had to be a Honda-approved EDI and barcode software provider, and that proved extremely difficult to find. We wanted a browser-based system that could be accessed from anywhere since TOMASCO's parent company has operations across the globe. The system needed to be multi-lingual, including Japanese, and offer an exceptional shop floor data collection system, including label printing on the shop floor. It needed to integrate lot control management from raw materials to finished goods, for 100 percent traceability. And, the company needed to be positioned to fully participate in the future of automotive communications."

Plexus was not Honda certified at the time, but it committed to quickly achieving Honda certification and developing a Japanese language version of its system. In January 2003, TOMASCO hired Plexus Online to integrate its business systems using its modular ERP system. Plexus immediately began its own independent certification process with Honda and became Honda certified a few months later.

Results seen quickly

"We started in early 2003 with the Parts Building module in the stamping area on the shop floor," Patterson says. "It was adopted relatively easily by the shop floor employees. Initially there was concern that it would take longer to input the data than it would to write it down by hand, but once the shop employees realized how easy and efficient the system was, they embraced it."

The Plexus Manufacturing Execution/Shop Floor Control module is a powerful user interface for shop floor personnel to track and control a work station's machine status, labor hours, production, inventory, tooling, etc. Soon after the module's implementation, TOMASCO found that its overall equipment effectiveness (OEE) reports were consistent and accurate, eliminating hours of manual calculations by supervisors. The new system also automated the reporting of scrap and downtime.

TOMASCO also began implementing the Plexus Purchasing, Purchase Receipt and Cycle Count of Raw Materials modules. At this point there was no effective inventory control for the coil room. By mid-2003 they had enhanced the communication between purchasing and production and eliminated the need for a "hot list" and the constant expediting of raw materials.

The next targets were EDI, Shipping and Accounts Receivable. By early 2004 Plexus revised the EDI process and allowed TOMASCO to implement required Honda changes without the need for internal expertise or involvement. Plexus moved TOMASCO to a new platform without any problems.

Machine Maintenance Goes From Reactive to Predictive, and Quality Scores Soar

"Before we implemented the Plexus Maintenance module, we had improved our quality each year since 2001 by 25.1 percent." says Ken Keller, Senior Manager, Operations. "We went online with Plexus in March 2005, and our quality improvement jumped to 39.9 percent in a year when we were building parts for five new model launches, a record for new launches in one year—we usually have two. We could make these improvements because the information we now have access to allowed us to move from reactive maintenance to preventive maintenance. Now we're moving from preventive maintenance to predictive maintenance."

Assistant Manager-QMS Deb Reining spent many weeks entering maintenance information and recommended preventive maintenance for every machine for which she had records. When TOMASCO went online, every employee could see the repair logs and preventive maintenance performed by machine. What they saw was that some machines had never been repaired, others broke down consistently, and still others did not receive the preventive maintenance they needed to optimize usage. Employees were encouraged to input maintenance requests for machines as soon as they identified the need, and they did so in droves. By enabling all employees to request maintenance, TOMASCO increased response time to maintenance requests by 81 percent.

"The EDI capability in Plexus is a tremendous asset," says Patterson. "Honda used a method called a 'mailbox' to send and receive EDI as part of its value added network. In a legacy system, you have to pull the mailbox, break it down…it takes highly trained, technical people and dedicated time. With Plexus, you no longer have to deal with the technical aspects of EDI. Plexus handles it. They update everything. Honda recently offered suppliers the option of a File Transfer Protocol (FTP), which Plexus implemented. TOMASCO now saves the cost of all the manhours devoted to EDI, plus it was able to eliminate the IBM's Value Added Network, saving thousands of dollars per month. By moving from VAN to FTP, they don't have to pay for every transaction."

The implementation of the Shipping and Accounts Receivable modules in early 2004 eliminated two major system interfaces, three full time jobs in shipping and one in billing. Customer release information was immediately available to floor supervisors, removing the traditional eight-hour communication lag. The real-time customer release information eliminated the need for a full time position developing and maintaining the information.

The cycle count of finished goods was also brought online in early 2004, eliminating four hours spent daily counting inventory and communicating to floor supervisors.

Steering hanger beams are one of TOMASCO's key product lines. TOMASCO implemented the Quality Management System modules and worked with Plexus to enhance the quality check sheet process used to gather quality information for every steering hanger beam produced. Each beam has 75 welds, and each of these welds undergoes a quality inspection. Prior to Plexus, the operator would record any issues by hand, but an analysis of issues was not completed until the end of the month.

In 2004, Reining recorded 4,945.15 maintenance hours. In 2005, after the Plexus Preventive Maintenance module was installed, she recorded 10,469.15 hours. "We used the system to prove we needed more personnel," says Reining. "For the first time we could use the equipment control log to show how many hours were needed to keep every machine in good working condition."

"Maintenance finally had a clear picture of what was needed and the manpower required," says Keller. "We are now able to track the life cycle of key parts, so we can order them in advance instead of having to expedite them, saving us money and machine downtime. Since we now have established preventive maintenance requirements, schedules and estimated PM completion timings for each machine, our Equipment Control Technicians can more efficiently arrange their work around planned machine downtime such as lunch breaks, shift changes and weekends."

The Plexus Preventive Maintenance module gives TOMASCO the ability to track which machines have the most problems and what kind of problems they have. When they need new machines, they avoid purchasing the brands their data shows are troublesome. When quoting new business, the sales department can quote parts built on machines which historically run the most consistently. This reduces the potential for repair, expediting, and overtime costs.

"There was great concern that implementing an electronic check sheet at the end of these production lines would have a negative impact on overall production and lower productivity," explains Patterson. "We didn't know if a person could use the computer screen to enter the data on 75 welds before the next beam came down the line. But these fears were proven false. TOMASCO now had a method to collect and analyze quality information immediately and began a procedure to check the information during the day. This allowed maintenance associates to make adjustments to the equipment during operator breaks and lunch times, correcting weld issues so that good parts could be produced consistently. This virtually eliminated the backlog of rework parts and significantly improved productivity in the weld area."

Because quality check sheets can be tied directly to serial numbers shipped to the customer, quality issues can be more easily contained and analyzed. This was a big win for TOMASCO with Honda.

"The 100 percent traceability capability is critical," says Ken Keller, Senior Manager, Operations. "Plexus allows us to trace back to a particular coil of steel or a container of 30 parts. The ability to trace materials with such accuracy has allowed us to reduce our financial exposure should a product issue occur. The quality of the information has also allowed us to significantly improve business processes throughout the plant.

"In the past, we typically handled two new model launches a year. In 2005, we handled five. We couldn't have done this without Plexus."

The detailed information now available through Plexus provides the new product development group with an improved history of failure modes. They are using this info to develop the FMEAs and to design and process potential problems out of individual parts.

"We can trace back to each machine used to produce each part and the exact time the part was made," Keller explains. "We track all maintenance and changes for every machine, when they were made, and by whom. This type of machine history could save us millions if there was ever a safety issue or a product recall. Before Plexus, we didn't have the concrete evidence to pinpoint the exact changes. In a recall situation, we would have had to recall every piece. Now, if we were ever to find ourselves in that situation, we would only have to recall to the point where a proven change in the process occurred."

"In a recall situation, a lack of traceability would bring a supplier to its knees," says Karen Patterson of Revolution Group, an Ohio-based IT Consulting Firm. "Being able to isolate this information can be very difficult without the right system.

"The Preventive Maintenance module is a piece of the Plexus puzzle that can be installed as a stand alone system. Adopting an entire ERP system might be too much for some companies to handle, but the Preventive Maintenance module is one chunk with huge impact. You need well maintained machines to make consistently good parts."

ISO Certification a Natural Byproduct

"We first started working towards our ISO certification in the mid-90s,'" says Assistant Manager-QMS Deb Reining. "There was one issue after another. We were convinced we needed to go to another system platform.

"When Plexus did its demo, they supported our idea that you had to rewrite our entire system. Plexus told us that if we used its system correctly, there was no way we could not get certified. Before we started with the Document Control module, it could take weeks to get signatures on process changes. With the Plexus module, they are e-mailed. And you get an e-mail every day until you approve it.

"We started with check sheets in Stamping. We used to write everything by hand and check the sheets four times a day. When we started entering everything online through Plexus, we had the ability to check for any changes before running the line. We now can have SPC on all the lines. We were actually meeting ISO procedure requirements without realizing it."

The QMS group also implemented the Audit and Training modules, which work together to put information required for ISO certification at their fingertips.

"The Document Controller issues a training sheet every time any procedures or work instructions are updated or changed," Reining emphasizes. "We can track it to an individual. The Audit module allows us to schedule audits, maintain audit results, add notes, etc. We used the Internal Audit module to secure both ISO 9000 certification and the ISO Environmental 14001 certification in 2004. The environmental certification is very important to Honda."

TOMASCO continues to streamline its business systems as it progresses further along its ERP module implementation.

"We can now see costs as they occur, and we don't have to wait until the end of the month to see where our problems are," says Staats. "We have a better understanding of our parts structure, which helps with costing. Everything integrates. We spend considerably less time managing data, and we've resolved a majority of our inventory issues. We are able to meet the needs and demands of our customers, and we are well positioned for the future.

"If a company implements Plexus Online and uses all of its functionality, it can't help but become a great company."