

As seen in "APICS-The Performance Advantage" November/December 2003

A Real-Time Solution

Computer repair center finds MES solution key to improving operations and customer service.

CHALLENGE: Provide real-time repair information and accurately project when products will be returned

PRODUCT SOLUTION: InSite from Camstar Systems Inc.

MANUFACTURER: TriGem Computer Inc.

FACILITY: Foothill Ranch, Calif./TriGem America Corp.

OPERATION: Repair center for personal computers and hardware

INDUSTRY: Electronics manufacturing

TOTAL EMPLOYEES: 4,000 worldwide

CAMSTAR

Camstar
900 E. Hamilton Ave.
Suite 400
Campbell, CA 95008
Phone (408) 559-5700
Phone (800) 237-2841
Fax (408) 558-9350
Email: solutions@camstar.com
www.camstar.com

TriGem Computer Inc. is an original design manufacturer that makes desktop PCs, notebook PCs, LCD monitors, and other peripheral devices for some of the largest names in the computer business. Today, it is the world leader in the PC market, and supplies more than four million PCs a year. Its products represent a significant portion of the retail computer market in the United States.

Headquartered in Korea, TriGem has a global network of production, research, marketing, logistics, and service centers in major markets around the world, including the U.S., Japan, China, Europe, Australia, and Mexico. TriGem America has a repair center in Foothill Ranch, Calif. to service all point-of-sale returns in the U.S. The facility operates an assembly line to repair and refurbish computers that are either returned from the channel or from end-users.

The challenge

The Foothill Ranch service center handles the repair of hundreds of different computers and parts daily. The key to its success is the speed and accuracy with which it can repair equipment and return it to the customer.

"Our number one priority is speed and accuracy in identifying the problem(s), capturing repair information, analyzing it, and reporting it to the com-

pany's management and our customers," says Joo Shin, vice president of TriGem's service business unit. "As our operations increased, we found this task to be very labor and time intensive."

As TriGem's sales have increased over the years, so has the number of repairs. With the company's manual data collection process stretched to its limit, TriGem's management was having problems making accurate return projections.

The facility employed five employees who manually collected weekly repair data on returned computer equipment from a multitude of different manufacturers. The complex data that needed to be collected included information such as serial numbers, computer model and make, hardware and parts, as well as where the computer came from and what was wrong with it. It often took TriGem's service center two to four weeks to compile, analyze, and report this data to management. If there was a backlog, the facility simply assigned more people to the project.

In addition to internal reporting challenges, there was the need to communicate detailed and up-to-date status reports to its customers. Since computers have become part of daily life, people feel at a loss without their PC and want a realistic estimate about when their unit will be returned. Because TriGem had delayed repair data, it couldn't provide

customers (either original equipment manufacturers—OEMs—or end-users) real-time updates or projected shipment dates. Instead, the company could only report that they had received the device and that it was currently being repaired.

Lastly, the manual data entry process also hindered TriGem's ability to identify and correct problems in a timely manner. Without real-time repair data, it took TriGem weeks to identify and correct problems, such as throughput on the assembly line and supplier defects.

TriGem's management realized that if repair volume continued to increase, its reputation for customer service would be jeopardized. Their task was to find a shop floor management tool that would not only eliminate the need to manually process the information. It would also need to enable the company to provide customers with quicker and more accurate information.

The solution

TriGem assembled a task force to evaluate their options. The team decided that a manufacturing execution system (MES) was the best solution to automate the data collection process and provide real-time repair data to management and customers.

TriGem reviewed 14 different MES software providers on the following criteria:

- Functionality
- Cost
- Time to set up
- Support.

After carefully reviewing the offerings, the task force chose Camstar Systems, Inc. of Campbell, Calif., and its InSite software system. The advantage Camstar had over its competitors was that InSite required less IT support and would be easier to install—making it less expensive to operate. InSite is a configurable program logic application which made it easier to integrate TriGem's existing systems and custom forms and make new functionality immediately available without disrupting operations.

“One of the key factors in our decision-making process was rapid implementation, since we had a small window of opportunity to make a change without significantly disrupting operations,” says Shin. “Camstar's team of engineers

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worked on site, and within two months, had an initial implementation of the MES system up and running.”

Today, TriGem uses InSite's bill of processing functionality to provide real-time tracking of each device throughout the entire repair process—upon receipt, through the assembly line, to delivery. With access to the live information, operators can collect and report information to management and its customers almost immediately. The InSite tracking framework also provides key data services to the shop floor, including real-time quality checks, yield monitoring, automatic system actions, and lot traceability for improved quality and process. For instance, key personnel can now track which workers are most productive, which suppliers are poor performers, as well as which components have the highest failure ratio.

The results

With InSite, TriGem is able to track and report key information to manage-

ment and its customers faster—the time has been reduced from two to four weeks to one day. Key results within one year of implementation include the following.

■ InSite played a major role in helping TriGem America save millions of dollars by increasing productivity, from 3.7 units per employee per day to 8.0 units per employee per day, through the ability to identify repair problems almost immediately, causing fewer queues in the repair line. With increased employee productivity, TriGem has been able to decrease the number of people in its repair line.

■ By automating repair data collection, TriGem has been able to eliminate four positions, saving thousands of dollars per year in salaries.

■ TriGem has improved the accuracy of its repair data and return projections. An external audit from an OEM customer recently found TriGem's repair data to be 99.97 percent accurate.

■ The company has increased customer satisfaction. Now customers can receive timely information around delivery and problem analysis. The OEMs also can receive and use information to identify and resolve problems associated with their manufacturing process and component suppliers. TriGem can also clearly see where computers are in the repair process so it can give accurate projections about when they will be repaired and returned.

■ TriGem now has access to key metrics, such as cycle times, individual operators' productivity and specific product movement, so internal operations issues can be identified and resolved quickly.

“We couldn't be more pleased with the MES system,” adds Shin. “We're looking into rolling it out in our other repair facilities in Australia, Japan, and China. We're also thinking about ways we can provide it on an extranet to our OEMs in order to track end-to-end life cycle management, starting with production through after-market servicing.” ♦