The Computerworld Honors Program

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Final Copy of Case Study

LOCATION:
Irvine, CA, US

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2011

STATUS:
Laureate

CATEGORY:
Business Responsiveness

ORGANIZATION:
Symetrics Industries, LLC

ORGANIZATION URL:
http://symetrics.com/

PROJECT NAME:
A Truly Paperless Manufacturing Floor

PROJECT OVERVIEW

Symetrics Industries specializes in the design, manufacture, and test of electronic systems for military applications that integrate into airborne or ground platforms. Noteworthy products include their Countermeasure Dispenser System and Improved Data Modems. Symetrics is built on a solid foundation with cornerstones of leadership that have prepared them to impact the defense world by supporting and protecting our military. In 2006, Symetrics initiated an upgrade, revolutionizing their manufacturing floor. The project is called “A Truly Paperless Manufacturing Floor,” and the outcome has affected many aspects of the manufacturing process. Symetrics was concerned about using hardcopy documentation to control the process. Four types of documents were being used to convey work requirements to the operators: Drawings, Job Travelers, Detailed Work Instructions, and Operational Procedures. When an operator looked at a hardcopy of one of the documents, there was a risk that the document was not current, not complete, or not available – which could result in a defective or late product. In the world of supporting our armed service members, there is no room for either of those outcomes. Succeeding in the areas of Drawings, Detailed Work Instructions, and Operating Procedures did not present a particular challenge, and these areas were completed quickly. For the Job Travelers, however, issues were not as easy overcome. Hardcopies were limiting because when Symetrics wanted to employ continuous flow techniques, they had to make additional paper copies of the traveler so each sub-grouping of the job would have proper identification. The amount of paper generated to enable the necessary level of control was overly wasteful in terms of expense, and environmental responsibility. Symetrics decided to eliminate hardcopies of these documents, thus saving money, doing less harm to the environment, reducing errors, allowing more flexibility in product movement, improving quality, and reducing cycle time. Moving to a paperless environment required a series of steps taken by Symetrics, including implementing the Epicor 9 next-generation enterprise resource planning (ERP) solution. Integration with its ERP solution allowed Symetrics to automate and streamline operations, implement real-time traceability, and

improve data flow throughout the organization via a paperless system. The first step was to install a client terminal at every operator's workstation, giving them access to all of the particulars about a job through the latest revision of documentation. That method was used for the Drawings, Work Instructions, and Procedures. To eliminate paper travelers, Symetrics used Epicor to provide serial number tracking through the manufacturing process. With this capability being released as part of Epicor 9, Symetrics began the final leg of the journey in 2009. A traveler could be accessed electronically by an operator on his/her terminal for whichever serial number was being worked on. Paper Job Travelers were removed so parts can be tracked as they move through to each operator in whatever quantity is needed, facilitating a continuous flow of parts and ultimately production. Any imperfections are spotted immediately and production can be stopped in real time for corrections, reducing product/manpower cost and waste.

SOCIETAL BENEFITS

"Lean" and "Green" initiatives continue to grow in importance in the manufacturing arena. Taking Symetrics' shop floor paperless is an excellent example of how to reduce waste, drive continuous improvement, and improve response times, while also addressing sustainability initiatives. Impressively, Symetrics reduced paper use by 25% company-wide, and a near-100% on the shop floor.

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PROJECT BENEFIT EXAMPLE

1. Customer Value • Cost reductions allowed Symetrics to reduce prices. Examples are reduced paper costs, reassignment of the person that had been trying to keep all the paper copies up to date (nobody lost their job, but through increased growth, that person could get a job in another part of the company), less scrap and rework due to improved quality. As compared to a control period before these steps were initiated, overall paper usage for the company dropped 25%, and labor as a percent of revenue dropped 18%. • Quality improvements allowed Symetrics to maintain a terrific reputation with the customer base, thereby attracting more business. Improvements came as a result of all operators using nothing but the correct documentation, and being able to see it right at their workstation whenever they wanted. In some areas, quality levels improved by 60-75%. In other areas, they improved by 90% or more, which means there are virtually no defects in those areas. Test results at the end of the process improved 31%. Warranty returns from customers, which were already at a very low 1.6%, dropped 13%. • On-Time Delivery soared, which is another key factor to winning more business. When your quality is near perfect, there is much more predictability in the process because things are not slowed down by test failures, troubleshooting, and rework. Symetrics can now decide to have less work on the floor because they know exactly how long everything will take. This leads to lower lead times, so customers can get their products sooner, with less advance notice. On-Time Delivery stands at 100% each month now, up from about 88%. Lead times improved 29%. 2. Operational Consequence The project has revolutionized the way Symetrics operates, and has led to quality improvements and cost reductions that make Symetrics much more competitive in the marketplace. 3. Cultural Change The cultural change has been substantial. All involved in the paperless system have a much greater confidence in the exactitude of their work. The improvement has been a win-win situation, creating an environment that not only fosters a profitable effect from a corporate position, but also builds an employee commitment of keen attention to detail in all facets of the quality process. The end result is positive from all aspects, and keeps Symetrics on the cutting edge as they climb to greater success. 4. Financial Impact Not all the improvements can be attributed to this project alone, but it was instrumental. As a result of the cost reductions and the improvements in Quality and On-Time Delivery, revenue increased 77% over that same time period, while not adding a single

manufacturing operator. Symetrics is positioning itself to be a key player in the Aerospace and Defense electronics industry so it can attract more business and add more manufacturing jobs. Already, Symetrics has added many engineering and office jobs, so much that it had to buy a nearby building to house the new staff. This, however, was not due directly to this project.

IS THIS PROJECT AN INNOVATION, BEST PRACTICE? Yes

ADDITIONAL PROJECT INFORMATION

Further results from Symetrics' "A Truly Paperless Manufacturing Floor" initiative include the following: • Increased revenue 77% • Increased items produced 160% (with no increase in the number of manufacturing operators, and a 25% decrease in Configuration Management staff) • Defect rates dropped typically 70%, and in some cases, more than 90% to levels near zero • Functional Test results and customer satisfaction improved • On-Time Delivery improved 83%, and now stands consistently at 100% • Assigning just 25% credit for the above improvements to this project, the payback was realized in just 43 days.