

Deployment of **MERLIN** results in 50% Utilization increase

VERMEER CORPORATION

Vermeer Corporation for over 60 years has been making an impact with its high-quality, high-value industrial and agricultural equipment. With innovation in its DNA, the company experienced phenomenal success and grew from meeting the need of just the agriculture industry to serving the needs of more than eight diverse industries.

As a customer-focused organization, Vermeer has always strived to increasingly better the quality of life for its customers. The company is constantly looking for quality improvement, cost reduction, and waste reduction methods.

BUSINESS SITUATION

As Vermeer had expanded, each of its facility evolved as a separate business unit. With one-third of its annual revenue coming from exports the company choose to adopt Lean, continuous improvement philosophy. The new approach was aimed at re-structuring operations into more logical cells to improve flow of work and reduce redundancy.

The daunting task facing the lean team was consolidation of operations across the nine Vermeer facilities. Furthermore, they needed to identify inefficiencies in the process and implement change to foster improvement, efficiencies, and capitalize on capacity.

TECHNICAL SITUATION

Even though Vermeer had a Kanban system that provided daily requirements of parts to be machined or products to be assembled to meet customer orders, the company lacked shop floor visibility. There was a lack of "Pull" incentive to drive manufacturing efficiencies for meeting the customer demand in a timely fashion. Vermeer had no system in place to measure productivity, labor, utilization and throughput of machines, cells, assembly area or the entire facility. There were no reporting metrics or quantitative efficiency tracking for management to act upon.

Vermeer required an enterprise-based system solution that was built under MS – SQL database environment and utilized latest software tools. Furthermore, the solution had to be easy to use and self-maintaining. Vermeer planned to deploy the solution across the company to provide a standard robust monitoring and reporting system for effective, reliable feedback and Lean Continuous Improvement.

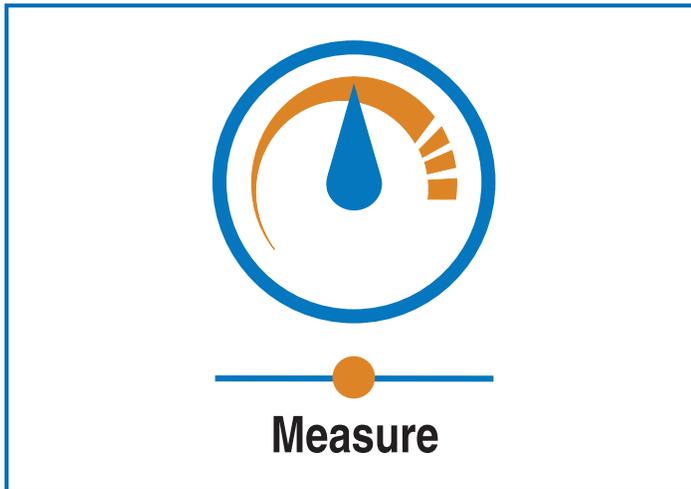


MERLIN is an IIoT Shop-Floor-To-Top-Floor communications platform that provides manufacturing analytics in Real-Time.

SOLUTION

Vermeer champions recognized that to manage efficiency they had to first measure actual events at the machine. They estimated that there was vast potential for improvement, but without empirical data as proof they were unable to secure buy-in from management for new productivity initiatives. The team determined that an off-the-shelf packaged toolkit that could be adapted to many machines was an ideal solution for them. They undertook a formal buying process, evaluating very carefully many automated machine data collection products and its vendors. Their main interest was tracking the Overall Equipment Effectiveness (OEE) metric. Furthermore, Vermeer needed a vendor that would assist in the installation of the equipment and had a reliable track record in the industry. This search lead then to the select MEMEX and the company deployed

- MERLIN communications platform software
- MERLIN Ax9150 Universal Machine Interface
- MERLIN Handheld HMI for downtime recording
- ERP Interface
- Reporting, Charting, Real-Time KPI screen and Dashboards

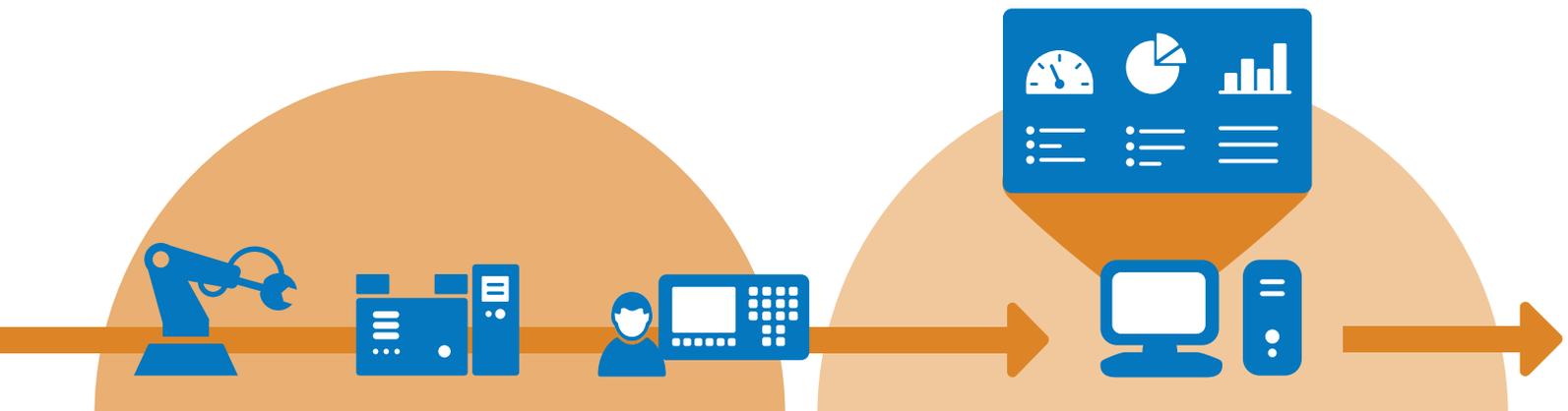


A key requirement for MERLIN was to validate utilization estimates and operator labor; therefore, an automated system connected directly to the machine was critical. Vermeer installed MERLIN on various machines and the teams benchmarked the initial data and defined a “next step” process to assess the new data collected using MERLIN. Their analysis plan included:

- Observing Downtime Parameters collected by the MERLIN vs. Actual to proposed adjustments
- Analyzing respective downtime element to recommend improvement opportunities for machine utilization and provide expected time-savings
- Developing and implementing a go-forward plan based on MERLIN's data
- Some of the changes made for Lean Continuous Improvement include:
 - 10 logistics recommendations that would improve both productivity and setup times
 - Established practices and submit recommendations that will improve setup time without sacrificing productivity thereby increasing capacity
 - Visibility of production metrics to all management and shop floor, including the Director of Manufacturing
 - Improvement of operator time through setup procedures and techniques at each of the machines
 - Audible alerts to the operator at each machine to prompt for action
 - Advanced reporting with text and email alerts to key management

Initially there was resistance from the Operators, until they realized MERLIN data improved their job and made it easier by collecting Real-Time data automatically. Certain operator functions and triggers were desired, which took minimal training. Additionally, Vermeer witnessed a cultural change as Process Engineering department now became part of Manufacturing, where the “Team” owns the complete process.

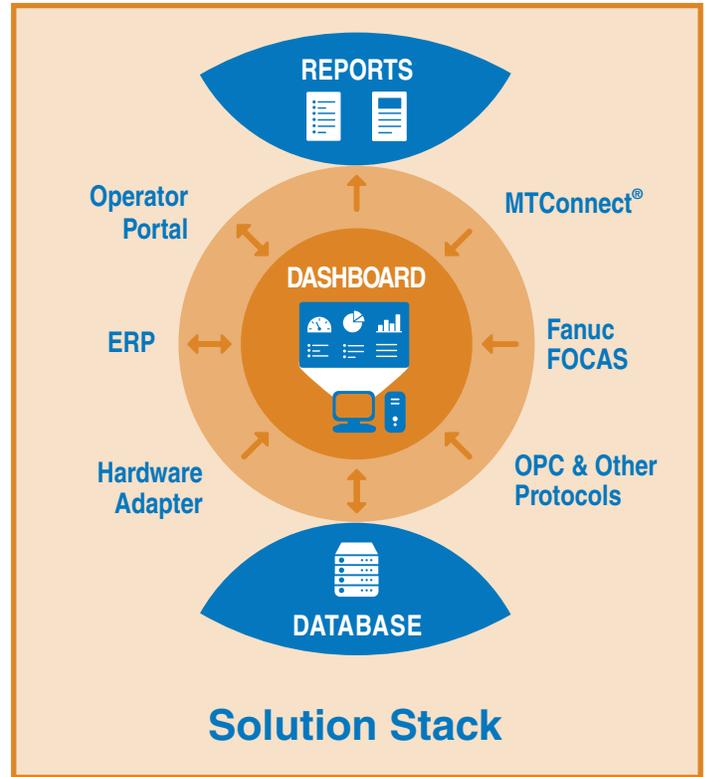
Data-Driven IIoT Manufacturing



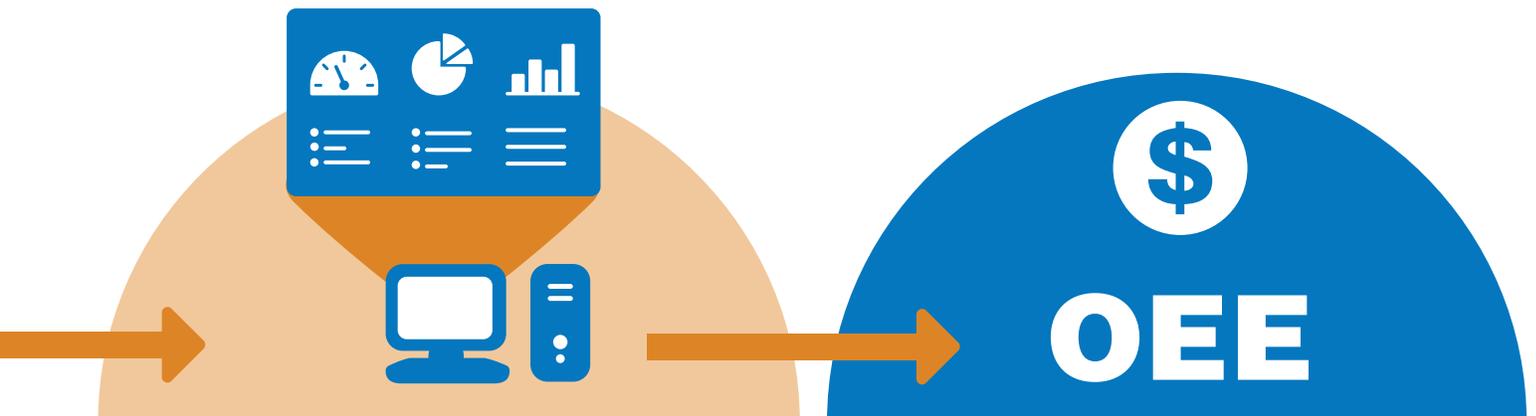
BENEFITS

Effective deployment of Real-Time MERLIN automated data collection has resulted in the following benefits for the Vermeer manufacturing team:

- Increase in OEE expected to be 100% overall as machine utilization moving from 30-35% to over 65%
- Reduction of setup time by 60 minutes per shift, directly improving capacity
- Uptick of 50% in machine utilization very early after the system was installed
- Use the data to ensure better decisions are made with respect to utilization as well as capital expenditure
- Accurate data from machines



From Shop-Floor-To-Top-Floor



ABOUT MEMEX™

The Industrial Internet of Things (IIoT) powered by machine to machine (M2M) connectivity coupled with software capable of collecting, analyzing, and intelligently presenting streams of manufacturing data represents no less than the next Industrial Revolution. MEMEX with its visionary attitude has been on the leading-edge of the convergence of the industry trends in Computing Power, Connectivity of Machines, Industry Standards, Advanced Software Technology, and Manufacturing Domain Expertise. Leading this transformation is MEMEX Inc., the developer of MERLIN, an award winning IIoT technology platform that delivers tangible increases in manufacturing productivity in Real-Time.

MEMEX, with its comprehensive understanding of the manufacturing industry, is the global leader in machine to machine connectivity solutions.

Committed to its mission of “Successfully transforming factories of today into factories of the future” and encouraged by the rapid adoption and success of MERLIN, MEMEX is relentlessly pursuing the development of increasingly innovative solutions suitable in the IIoT era. MEMEX envisions converting every machine into a node on the corporate network, thereby, creating visibility from shop-floor- to-top-floor.

MEMEX, with its deep commitment towards machine connectivity, offers solutions that are focused on finding hidden capacity by measuring and managing Real-Time data. This empowers MEMEX's customers to effectively quantify and manage OEE, reduce costs and incorporate strategies for continuous lean improvement.



PRODUCTIVITY

10%-50% average productivity increase



PAYBACK

payback in less than four months with an Internal Rate of Return (IRR) greater than 300%



PROFITS

20% + profit improvement based on just a 10% increase in OEE



CONNECTIVITY

connects to any machine, old or new

Contact MEMEX to implement IIoT data-driven manufacturing now.



MEMEX
Measuring Manufacturing Excellence™

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