



Thomas R. Cutler
 President & CEO TR Cutler, Inc.
 E : trcutler@trcutlerinc.com

Business Process Improvement for Engineer-to-Order Manufacturers Streamline Systems Guides MDC Vacuum Products

MDC Vacuum Products is a global leader in Vacuum, Gas Delivery and Ceramic Seal Solutions. From its offices in the United States and Europe, the company provides engineered solutions worldwide, for a variety of industries including, Aerospace, Bio & Pharmaceutical, Medical Devices, National Labs, Oil & Gas, Semiconductor, Solar and Nuclear.

Over the years MDC has expanded its portfolio acquiring Insulator Seal (ISI), a ceramic to metal bonding company and Innovent Technologies, a gas and vacuum weldment (a unit composed of an assemblage of pieces welded together) company. The MDC product line has evolved against a backdrop of careful research and development as well as the implementation of the latest in automated manufacturing techniques.

Today MDC manufactures of a broad range of standardized high and ultra-high vacuum components as well as custom-engineered solutions for both science and industrial vacuum applications and gas delivery. In its make-to-order (MTO) and engineer-to-order (ETO) manufacturing environment, many MDC Vacuum products are unique to a specific customer. Consequently, MDC offers a virtually unlimited number of different products, and the product management cycle is more complex.

Complicating operational management, sales orders involved web transactions from the company website, customer punch out sites, with intercompany transactions, typically between a local subsidiary and the fulfillment facilities based in the United States.

As the company grew through acquisition, evolving into a truly global enterprise, the IT infrastructure became increasingly

disparate and complex. For many years, MDC had relied on a legacy ERP system that significantly constrained the ability to grow.

Due to this antiquated enterprise resource planning system, the management team was unable to upgrade underlying technologies to gain the necessary improvements in processing speed and delivery of information to employees. The legacy CRM (customer relationship management) solution was not fully integrated making it extremely difficult to maintain customer service and develop effective marketing campaigns. These factors led MDC executives to a critical decision point: upgrade their existing ERP or invest in a more effective long-term solution.

Engineer to Order manufacturing is complex and new technology solutions often represent a point of contention and concern. MDC strongly considered an upgrade solution from the existing vendor before selecting Microsoft Dynamics AX and Implementation Partner, Streamline Systems, LLC. Finding such implementation partners that understand the nuances and unique issues facing ETO companies is rare. Few can deliver quality implementations for Engineer to Order companies, like MDC.

Rick Kent, the CFO at MDC Vacuum noted, "We explored upgrading our existing systems. After careful analysis of this upgrade, we realized we would have been operating the exact same way without the features and full integration that we felt was necessary. We chose Microsoft Dynamics AX because we wanted to improve our business operations. It had significant functionality over our out-dated ERP system. We chose Streamline System

we wanted to accomplish with the software. Together with their exceptional industry consultants, we focused on setting up business processes that would make us much more efficient and enable us to have the information at our finger tips to make much better decisions."

Streamlined Business Processes

MDC had many opportunities for business process improvement formerly hampered by the inefficient legacy system and lack of integration. The Streamline Systems' business process improvement process accounts for the unique Engineer to Order requirements, and focused on delivering improvements throughout the entire project.

MDC Vacuum offers unique engineer-to-order products as well as off the shelf products for their variety of industries. The company needed the ability to handle somewhat complex technical quoting processes as well as handling orders directly from their online ordering system. Optimizing Microsoft Dynamics AX, with its flexible and adaptable design, supported the MDC Quoting requirements. The solution reduced overhead and wasted time in the quote cycle bringing better value to MDC customers and prospects.

Streamline helped MDC gain production-planning and scheduling improvements because their consultants come from the industry and were able to introduce efficiencies in sourcing and supply chain management. Production staff consolidated multiple orders into one Subcontract Purchase Order or Release; MDC could then track the number of units at each subcontractor location as work in process (WIP). Production orders link to the appropriate purchase order for each subcontractor to facilitate payment when work is completed.

MDC Vacuum had an aggressive schedule for the implementation. Long, drawn-out implementations that often plague



Industrial Electronics Today

Engineer to Order companies with their complex business processes were unacceptable. Only organizations with ETO industry expertise are capable of meeting the challenge, and provide a detailed Statement of Work, delivered on time and on budget.

"MDC was looking to dramatically improve their productivity...as a global manufacturer, their business model requires the highest efficiency to maintain their excellent on-time delivery and customer service. They were not able to operate optimally with their existing ERP system. Our focus during the implementation was to establish efficient business processes. Their team did a great job prioritizing the critical business processes to achieve the desired results. Together, we improved operations and dramatically improved productivity," noted said Al Galinot, Senior Partner at Streamline Systems.

A Unified Platform Serves ETO Manufacturers

Concurrent with the ERP implementation, MDC was able to upgrade other Microsoft technologies, including Windows 7, Microsoft Exchange Server, Microsoft SQL Server, t

Microsoft SharePoint, and Microsoft Office applications to take advantage of the significant performance benefits of Dynamics AX running on a unified platform.

Standardizing on the Windows platform and Microsoft technology stack simplified management of the global IT infrastructure. The common platform has also reduced the demands on the MDC IT staff to perform point-to-point integrations between disparate systems, and simplified support requirements.

The consistent interface between Microsoft Dynamics AX and the Microsoft Office system helped users adapt to the new solution; the ability to easily copy and paste data between applications in the Microsoft Office system, such as Microsoft Office Excel, and Microsoft Dynamics AX, streamlined many analysis processes.

Quantifiable Benefits

Streamline was able to deliver a successful implementation within six months and stayed within the agreed upon budget for the project.

Within the first three months, MDC experienced benefits from their investment.

- Order entry capacity increased over 13% enabling MDC growth without added headcount
- Quote and order entry turnaround improved 11%, shortening the time it takes to respond to customer requirements.
- Production planning efficiency increased by 4%, enabling MDC to reorganize, providing more capacity to customers.
- Inventory levels were reduced 7% through more effective planning and control freeing up capital to invest in other business initiatives.

Larry Cohn, Managing Director said, "ETO companies like MDC are a good fit for us (Streamline Systems) because they had multiple companies worldwide, multiple sites, and mixed mode of manufacturing – make-to-order and ETO. MDC saw the value of Microsoft technology and were committed to success at the highest levels in the company. They were looking for a partner to help them improve business operations. The project was a complete success."

Industrial Electronics Today