



**MAR-BAL INCORPORATED**  
**QUARTER OF A MILLION**  
**DOLLARS IN SAVINGS**

Case Study

## WHAT WOULD YOU DO IF YOU SUDDENLY FOUND 5,000 EXTRA MACHINE HOURS?

Mar-Bal, Inc. is a one-source solution provider of thermoset composite products. From design and formulation to compounding, molding and finishing, Mar-Bal is a privately-held manufacturing company with 350 employees producing state-of-the-art products across four facilities in North America. Over the last few years, Mar-Bal had been experiencing challenges in its day-today operations. Mar-Bal's customized (AS400-based) ERP software was outdated, preventing the necessary increase in manufacturing activity required to keep Mar-Bal competitive in today's global economy. As each year passed, it became more expensive to operate the old ERP system due to the specialized support required to maintain and upgrade it.

Among many of the old system's pain points was the absence of a strong Electronic Data Interchange (EDI) program required by Mar-Bal's customers. Inbound EDI with the old system was limited to a time-consuming interface with customer portals to retrieve customer product demand and outbound EDI capability was nonexistent. The old system lacked the essential services (such as the automatic transmission of advanced shipping notices and electronic invoices) necessary to conduct business with key clients.

Inventory control with the old system was also sorely deficient. The inability to scan inventory from the shop floor was making inventory management a manual and extremely time-consuming process that included redundant data entry and unavoidable data entry errors. As Mar-Bal expanded and increased manufacturing activity, its operations needed to be more agile, but employees were instead spending an average of six hours

a day verifying inventory. The lack of inventory visibility also required a full physical inventory to be performed once per month that included machine downtime, wasting valuable production time while all employees manually checked inventory levels.

In addition, consigned inventory was also difficult to manage with the old system. It did not keep track of what was on hand at the customer site and allowed no way to add or reduce vendor managed inventory (VMI) based on shipments and consumption.

To round it all out, the old ERP system contained very limited reporting tools and forecasting abilities and no way to easily segregate the separate plants' costs and sales. Month-end activities required nearly two weeks to wrap up. Internal system communication and access to information was also a problem, resulting in poor customer service as sales people on the road could not access necessary order status information, resulting in longer response times to customers.

## AN EXTENSIVE ERP SOFTWARE SEARCH BEGINS

Mar-Bal had two options: pour more money into its outdated system and attempt to manually streamline processes in its manufacturing system, or find a new ERP provider. Mar-Bal chose the latter and the search began for a modern system with more capabilities (such as EDI, a robust inventory/warehouse management system and real-time plant floor production monitoring) without adding more operational costs to the existing organization.

### Return on Investment

- 5,000 potential machine hours no longer lost to downtime for physical inventory
- More efficient inbound order EDI processing: \$40,000 annually
- Capacity for outbound EDI invoice and ASN processing: \$20,000 annually
- Regular and monthly physical inventories eliminated: \$83,000 annually
- Quicker month-end close: \$23,000 annually
- Accurate production reporting through the RealTime interface: \$62,000 annually
- Accurate reporting of global material purchases allowing for more negotiating power with volume purchasing: \$30,000 savings to date

### Software

- EnterpriseIQ™ ERP software system
- Customer Relationship Management
- Document Control
- EDI with eServer
- E-Plant
- Forecast
- Preventative Maintenance
- RealTime™ Production Monitoring
- ShopData
- Time & Attendance
- Warehouse Management System
- Quality Control



Desiring an industry-specific software solution, Mar-Bal compiled a list of providers offering software related to the plastics industry, but which also could be used for assembly and finishing. Mar-Bal differentiates itself by being a one-source solution provider and required a system that could differentiate cleanly between its multiple manufacturing types.

Multiple software suppliers were researched and the list was narrowed to the systems that could process more transactions in less time while still allowing Mar-Bal to grow sales without expanding staff for data management. Industry references were contacted and the functionality of the software was investigated from the user's point of view, which revealed DELMIAworks (formerly IQMS) and one other package as finalists. Manufacturing site visits were conducted, and DELMIAworks' comprehensive, industry-specific ERP solution rose to the head of the pack.

"EnterpriseIQ has the functionality to support not only our molding operations, but also our other manufacturing needs," said Aaron Bable, Director of Business Process Systems at Mar-Bal, Inc. "IQMS' support capabilities and experience in manufacturing, plus their impressive cooperation with users, made the choice of EnterpriseIQ clear."

### **IMPLEMENTATION REVEALS IMMEDIATE RESULTS**

EnterpriseIQ was installed at the Chagrin Falls, Ohio, headquarters and then implemented at Mar-Bal's four facilities. Following implementation, Mar-Bal saw immediate results. Through DELMIAworks' robust and native EDI module, Mar-Bal is now completely connected to its customers' demand planning systems. Real-time order updates from Mar-Bal's customers are electronically entered into EnterpriseIQ, and employees process orders in significantly less time with information entering the system within minutes of customers releasing it. Outbound EDI functionality embedded with the auto-invoicing feature in EnterpriseIQ allows more than 100 invoices to be transmitted within minutes, all by one employee. Mar-Bal has experienced more effective billing and reduced average invoice aging because price or quantity discrepancies are resolved immediately, rather than discovered weeks later.

Through DELMIAworks' Warehouse Management System (WMS), Mar-Bal can now track the movement of all inventory—every single box and part—throughout its plants. With barcode labeling and scanning, full physical inventories are no longer necessary on a monthly basis, saving considerable amounts of time and labor. Additionally, Mar-Bal utilizes DELMIAworks' business activity monitoring system, IQAlert, to flag any predefined occurrences that need investigation, such as negative inventory. Consignment inventory maintenance

also improved, as EnterpriseIQ's VMI module allows for automatic increases to consigned locations upon packing slip creation as well as an easy-to-use consumption menu that is tied directly to invoicing.

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**— Aaron BABLE, Director of Business Process Systems**

System visibility and communication have improved dramatically with real-time plant floor production monitoring and remote access capabilities. The multiple phone calls needed to determine when a customer shipment would be made are no longer needed as a sales person on the road can now look at the EnterpriseIQ application on their smartphone, tablet or computer and see if a job is running or determine the stock Mar-Bal has on hand without making a call. Mar-Bal's customer service representatives and operations personnel can focus on their other responsibilities, and the sales people can get their answers immediately.

New reporting tools, such as Crystal Reports that allow for the clean output of a month's activities and Spreadsheet Server for financial reporting, decreased Mar-Bal's month end close to only four days, rather than eight to 12 days.

**What would you do with 5,000 extra hours of machine time?** Mar-Bal, Inc. experienced both immediate and long-term savings with DELMIAworks' manufacturing ERP solution. Annually, Mar-Bal's total savings were \$270,000 across its four plants as well as nearly 5,000 potential machine hours that were no longer lost to downtime for monthly physical inventory checks.

Mar-Bal found considerable savings when it installed DELMIAworks' innovative RealTime™ Production Monitoring system, tracking all aspects of part production as they occur. Manufacturing performance is optimized as RealTime™ allows Mar-Bal to monitor work center performance as it is happening and proactively address potential problems. Graphically, Mar-Bal can now see all of its presses during a shift and is able to see how jobs are running, how much scrap is being generated, if the cycle time is slow and if there is a problem that requires attention. With the RealTime™ interface, Mar-Bal saved 12 hours a day or \$62,000 annually.

EnterpriseIQ's EDI program has been a huge asset to Mar-Bal, reducing order entry time and increasing customer service. Previously, because order information had to be entered manually into each customer portal, larger customers might receive daily release changes a half a day late, while now, 100 orders can be processed in 10 minutes. Inbound order processing through EDI saved eight hours a day, or \$40,000 annually, and with the addition of outbound EDI, Mar-Bal automatically sends invoices and advanced shipping notices, saving four hours per day or \$20,000 annually.

Improved warehouse management and inventory control visibility was another major area of savings for Mar-Bal. They can now look at the system and see exactly what is on hand and where it is. The time spent verifying inventory locations at all plants is now six hours less per day or \$30,000 annually. DELMIAworks' inventory control system provides the requisite accuracy so that full physical inventories are no longer needed on a monthly basis and Mar-Bal has moved them to once a year, saving 2,750 hours of labor or \$53,000. Additionally, a complete monthly inventory check required the plant to shut down, resulting in lost production time for 90 machines. EnterpriseIQ was able to save nearly 5,000 potential machine hours that were previously lost to downtime for physical inventory.

Month-end was previously a two-week process at Mar-Bal, but now has gone down to only four days, a savings of \$23,000 per year. Reporting capabilities improved dramatically for Mar-Bal with the hundreds of customizable reports that EnterpriseIQ provides, allowing Mar-Bal to measure areas inaccessible to them in the past. Advanced forecasting and budgeting tools allow Mar-Bal to accurately plan for sales and costs in the upcoming year based on projected client demand. Accurate reporting of global raw material purchases delivered Mar-Bal more negotiating power with volume purchasing, saving \$30,000 per year.

## GAINING THE CRITICAL EDGE

Mar-Bal gains an edge over its competition with a better understanding of costing and profitability at both the micro and macro level. Detail-rich features in EnterpriseIQ allow for Mar-Bal to see precise production and labor costs so they can quickly and confidently send accurate quotes to customers. Through global material purchase reports, Mar-Bal's Corporate Procurement Department is able to negotiate for volume purchase price breaks, which translates into a better price for its customers.

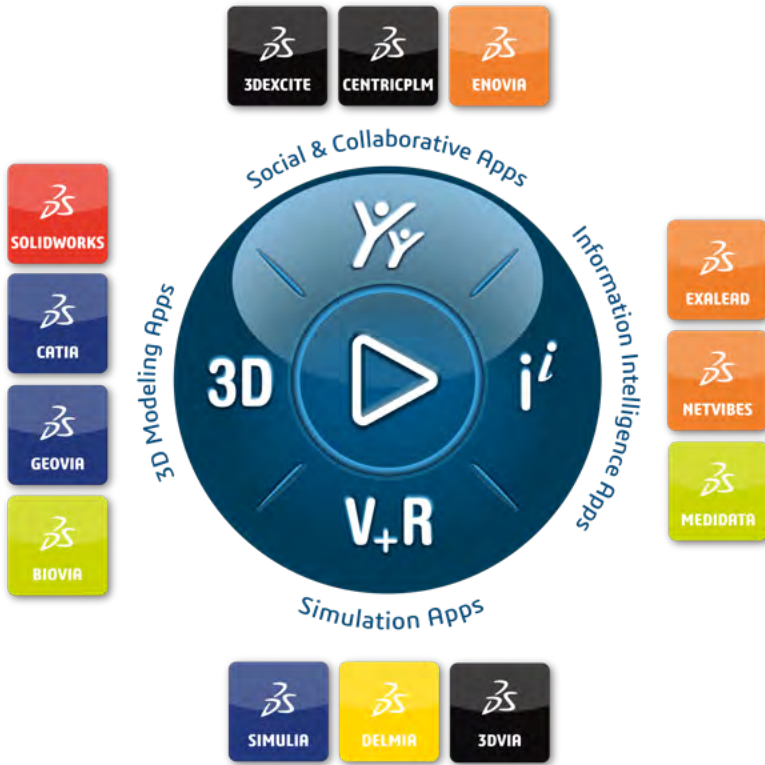
EnterpriseIQ's RealTime™ Production Monitoring also gives Mar-Bal an edge over the competition. The immediate, real-time relay of information through the EnterpriseIQ system allows employees to quickly respond to customers when a delivery date needs to be changed and/or items can ship sooner than expected. The scheduling module natively integrated with RealTime™ is very easy to use and can calculate updates to tens of thousands of orders in a matter of minutes.

In addition to the documented and visible benefits of EnterpriseIQ, Mar-Bal also noticed some bonus benefits that were not listed in the initial project plan. Cross functional awareness soon developed among its plant users shortly after launch. In the past, Mar-Bal's departments often operated in department "silos" due to the old system's lack of visibility, but with EnterpriseIQ, the seamless flow of information between modules and complete system visibility allows users to see the whole picture.

"We saw our employees not waiting for the conflict to occur, but taking proactive steps well before the conflict became a serious issue," said Bable. "A culture of continuous improvement, coupled with the capabilities EnterpriseIQ offers, gives us a distinct advantage over our competitors. We are able to process an order at less cost, more accurately and without increasing headcount."

Founded by Jim Balogh and headquartered in Chagrin Falls, Ohio, Mar-Bal is a compounder and molder of thermoset composite products. Since 1970, Mar-Bal has engineered and manufactured quality, customized materials and parts. Mar-Bal serves the appliance, electrical, transportation and industrial marketplaces from its four facilities in North America. Mar-Bal, an ISO registered company, develops innovative products while maintaining a commitment to client satisfaction and total value. The entrepreneurial spirit continues at Mar-Bal under the leadership of the second-generation Balogh family. Scott and Steven joined their father's company in the early mid-1990's and began growing the business through customer collaboration, engineering design and investments in innovation. Mar-Bal is clearly positioned to advance thermoset composites and provide their customers and partners a one-source solution.

For more information, please visit [www.3ds.com/delmiaworks](http://www.3ds.com/delmiaworks) or call 1.866.367.3772



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