

Programme Name: \_\_\_\_\_\_\_\_**BCS HONS**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Course Code: \_\_**ISYS 2400**\_\_\_\_\_\_\_\_

Course Name: \_\_\_\_\_\_\_**Management Information System**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Assignment/ Lab Sheet / **Project** / Case Study No. \_**1**\_\_\_

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**Introduction**

**About Company**

Mar-Bal serves the appliance, electrical, transportation and industrial marketplaces from its four facilities in North America. Mar-Bal, an ISO 9001:2008 registered company, develops innovative products while maintaining a commitment to client satisfaction and total value.

**Problems faced before implementing ERP**

Mar-Bal, Inc. was experiencing growing pains with their antiquated software that couldn’t keep up with the increase in their manufacturing activity. Their old system didn’t have EDI, lacked inventory scanning, didn’t track customer inventory and VMI accurately, and had limited reporting and forecasting tools. Learn how they realized immediate improvements in production, inventory management, plant floor monitoring, accounts receivables, financial reporting, increased customer service, and more after the implementation of IQMS (now DELMIAworks) ERP software.

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-to-day 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 Mar-Bal’s customized (AS400-based) ERP software was outdated, preventing the necessary increase in manufacturing activity required to keep Mar-Bal competitive in today’s global economy.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 non-existent. 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 salespeople on the road could not access necessary order status information, resulting in longer response times to customers.

**Direct benefits provided after implementation of ERP**

IQMS 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 IQMS’ 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.

Some other benefits are:

* Better goal and objective tracking with real-time reporting of the higher management team
* Time-efficient & cost saving
* Employees got easy accessibility and self-service capacity
* Various centers got to share all the best practices easily with each other

**Increased and efficiency after implementing ERP**

Through IQMS’ 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 IQMS’ 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.

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 salesperson 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 salespeople 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

Mar-Bal, Inc. experienced both immediate and long-term savings with IQMS’ 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 IQMS’ 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.

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. IQMS’ inventory control system provides the required 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.

**Conclusion:**

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.

IQMS' RealTime™ Production Monitoring also gives Mar-Bal an edge over the competition. The immediate, real-time relay of information through the 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 IQMS, 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 IQMS, the seamless flow of information between modules and complete system visibility allows users to see the whole picture.