



TOP TO BOTTOM

we know

they know

END TO END

NMHG raises manufacturing efficiency with SAP and IBM

Overview

■ The Challenge

Existing business systems at NACCO Materials Handling Group (NMHG) Italy provided good support for each operational area, but little by way of company-wide information. Corporate headquarters wanted financial data to be delivered more rapidly, and looked for cash flow and efficiency savings. However, existing legacy applications were cumbersome and time consuming; the month-end closing process was slow, data was provided on manually extracted spreadsheets; and the lack of current information impeded logistics, inventory and production improvements.

■ The Solution

NMHG Italy engaged IBM Global Business Services and SAP Italia Consulting to complete a feasibility study over a 16-month period and subsequently implement a complete suite of SAP applications into the Italian subsidiaries. SAP applications provide an integrated business management system that delivers near real-time financial and operational data both for

NMHG corporate headquarters and NMHG Italian plants, and integrates data into a shared financial framework.

■ The Benefits

Month-end closing figures are available in two days, a 30 percent improvement; the solution offers more control for inventory and stock management; materials requirement process (MRP) runs have been reduced from days to hours, and delivery time forecasts are now 100 percent accurate, improving customer satisfaction.

■ Key Solution Components

Industry: Manufacturing
Applications: SAP® ERP applications including financials, controlling asset accounting, materials management, production planning, quality management, plant maintenance, sales and distribution, warehouse management and SAP NetWeaver® Process Integration
Hardware: IBM® Power Systems™ model i570
Software: IBM i, IBM DB2®
Services: IBM Global Business Services, SAP Italia Consulting

NACCO Materials Handling Group (NMHG) is a subsidiary of the Cleveland, OH, based NACCO Industries, Inc., with total revenues of around \$3.7 billion annually. NMHG designs, engineers, manufactures and sells a comprehensive line of lift trucks and aftermarket parts marketed globally under the Hyster® and Yale® brand names. The company also operates wholly owned dealers that sell, lease and service the trucks, including sales of related service parts.

Business management systems at NMHG, originally designed pre-Internet, had been heavily customized and had reached their practical limits. Report generation and analysis for both production and financial matters relied on extracting data to spreadsheets, a costly and slow process.

The Italian operations, NMHG Italy, were tasked with finding a way to improve information performance and find the most cost-effective way to integrate data from local units with NMHG corporate headquarters' systems.



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Pierluigi Mastroddi, Project Manager,
NACCO Materials Handling Group

Pierluigi Mastroddi, Project Manager at NMHG Italy, explains, “From a business perspective, there was information we were unable to deliver, affecting operational areas. We had become part of a larger group, which meant that financial analysis was at a premium. Our materials management processes were not able to provide real-time reports – essential in a business like ours, where much of the value is in the materials cost. And finally, without connections between suppliers, manufacturing, sales and service, it was difficult to introduce planned new quality processes.

“We would act as a pilot project for all the NMHG businesses, worldwide, and if successful the model would be used as a template for other NMHG operations globally.”

Reporting up the chain

For NMHG, where the emphasis is on manufacturing, sales and service, legacy systems had provided completely acceptable functionality. The need to integrate with an extended worldwide finance, management and supply chain required a complete transformation of business systems infrastructure.

Pierluigi Mastroddi comments, “NMHG corporate uses SAP applications for financials and controlling its business processes, and clearly SAP applications were a prime contender for NMHG Italy. We selected IBM Global Business Services to help us with this strategic change, and to assist with an open tender process. We looked at many competing products, particularly for evidence of success with similar companies, and chose to migrate to the complete SAP ERP application suite.

“The next step was to find a partner to provide the necessary SAP implementation services. It was clear that SAP Italia Consulting offered by far the leading expertise and resources, and as an IBM subsidiary would have a close relationship with IBM Global Business Services.

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New automated functionalities, specifically for the integration of data management and the rules concerning segregation of duties, have made the transition from the former manual processes to the integrated SAP applications possible.

Efficient data management

NMHG Italy implemented a complete range of SAP ERP applications, including financials, controlling, asset accounting, materials management, production planning, quality



management, plant maintenance, sales and distribution, warehouse management and SAP NetWeaver Exchange Infrastructure.

Pierluigi Mastroddi reports that during the consultation process and pilot production, SAP Italia Consulting discovered critical lessons for successful implementation: “We found that we had multiple copies of data such as customer records, held in sales, marketing and service databases. We were able to eliminate the duplication and provide a single master data management service that has reduced the number of databases and improved data quality for every aspect of our customer operations.”

IBM Global Business Services created a supply chain template that could be used at the NMHG Italy site and throughout the NMHG subsidiaries. This approach would allow NMHG plants worldwide to share information rapidly and easily, with minimal effort, an essential tool when rolling out global integration.

“SAP applications allow us to operate a complete business process, from design through manufacture, sales, supply and service, with full product traceability. Though we are a relatively small business, we have learned the value of defining our relatively complex business process within the SAP applications.”

SAP Italia Consulting and the NMHG Italy project team completed extensive technical investigations, including network response times and capacity planning, before implementation. The applications are hosted on IBM Power Systems servers at the NMHG data center in Danville, IL. SAP BASIS support is outsourced to Symmetry Corporation, while the NMHG IT department manages system administration and the future strategic

direction of SAP applications and investments.

Faster month-end closing

The implementation and migration project ran for 16 months, and included a skills transfer program completed by IBM Global Business Services to ensure that NMHG can operate its SAP applications autonomously. Both NMHG Italy and NMHG Portland Executive Center are reaping information and business efficiency benefits, particularly in the areas of finance, inventory, production-planning and customer service.

Pierluigi Mastroddi explains, “Previously, providing month-end closing figures was a cumbersome, ad-hoc manual process that was very time consuming and subject to error, with data extracted to spreadsheets. Using the SAP financials and controlling components, we can complete month-end closing in a matter of days. As executives at NMHG’s Portland Executive Center also use SAP applications, they are able to understand and analyze this data immediately, which is essential for a worldwide operation.”

Formerly, NMHG Italy had been using isolated systems for each operational area, making it difficult for departments to understand the business impact of, for example, stock shortfalls or production delays. The integrated nature of NMHG’s operations – from manufacture through sales to ongoing service – is fully reflected in the SAP applications.

“Using the materials management component, for example, we are able to investigate and explore the requirements generated by new orders. The former business system was highly customized, and it took days to complete a materials

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TECHNICAL LANDSCAPE

Servers: IBM® Power Systems™ model i570, 12 processors in 3 LPARs of 1, 4, 7 processors, uncapped. Two Auxiliary Storage Pools, total 10TB

Software: IBM i, IBM DB2®

Users: Total SAP 325, SAP NetWeaver BW 32, SAP NetWeaver Supplier Relationship Management 221

requirements process (MRP) run. With the SAP applications, a full MRP is scheduled to run daily for each manufacturing plant, with the production manager completing a run for each customer account as required. Using this data, it is possible to forecast delivery times and ensure real-time procurement with the SAP production planning component," says Pierluigi Mastroddi.

"Currently there is a great deal of management attention on working capital requirements. Using the insight we have on our materials, we can now easily reduce our stock levels and continue to be fully in control of our production and delivery schedule. We have even increased our available-to-promise and customer fulfillment percentages while reducing inventory days, boosting cash flow in both directions, so to speak."

Enhanced customer service

The integration of internal systems has produced a positive effect on the quality of service delivered to customers. NMHG has established new quality management processes that were not possible before, with links right from suppliers through assembly to final delivery. Where points of failure are identified in a particular lift truck or range of trucks, NMHG is able to track back through the complete manufacturing chain and offer feedback to the supplier.

"SAP applications provide the connection between the different pieces in the puzzle," says Pierluigi Mastroddi. "For example, dealership partners are able to inspect the

availability of parts and retrieve information on the service history of that specific truck. The finance team is able to inspect and understand why the logistics team requires more or less budget. With the SAP applications, people can now see the whole chain rather than an isolated part, and see the impact of their actions."

Best-practice consulting from IBM

IBM Global Business Services encouraged NMHG to adopt the best practices embedded in the SAP applications, with very few changes to the standard applications.

"IBM Global Business Services provided outstanding support and advice, and showed us that if the best practices within the SAP applications were good for other manufacturing businesses, they were likely to be good for us," says Pierluigi Mastroddi. "Despite what we perceived as the complexity of our environment, the SAP applications have covered our complete business process, and it is important to highlight the benefits of moving away from application silos to fully integrated solutions."

"This project attracted high visibility throughout NACCO Industries Inc.," comments Pierluigi Mastroddi. "As we roll SAP applications out beyond NMHG Italy the co-operative benefits will be huge. We plan to expand the SAP applications throughout the company, providing a global manufacturing blueprint for future implementation, and it will enable every part of NMHG, existing businesses and new acquisitions, to act as a coherent international team."



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