LANSA Case Study

Hyster-Yale lifts its manufacturing efficiency with Visual LANSA

Hyster-Yale Materials Handling, Inc, with its global headquarters in Cleveland, Ohio, USA, is one of the world's largest forklift truck manufacturers. Hyster-Yale used Visual LANSA to develop FlowBase, its own sophisticated flow manufacturing system. The solution has been successfully rolled out to 10 plants and over 360 users around the world, in three different languages.

Ron Duffett, Manager of Global Manufacturing Systems, said, "The LANSA toolset has enabled us to deliver a user-friendly and cost-effective solution that drives our global manufacturing operations with accuracy and timelines. LANSA performed well in our demanding environment and its multilingual facilities allowed us to deploy FlowBase in several languages from a single code-base."

The Challenge

Hyster-Yale designs, engineers, manufactures, sells and services a comprehensive line of lift trucks and aftermarket parts, marketed globally primarily under the Hyster® and Yale® brand names. Its lift trucks and component parts are manufactured in the United States, Northern Ireland, Mexico, the Netherlands, the Philippines, Italy, Japan, Vietnam, Brazil and China.

Hyster-Yale uses flow manufacturing as an operational strategy. Flow manufacturing is a lean manufacturing technique aimed at improving efficiency. To be able to respond quickly to customer demand, production batches are relatively small in flow manufacturing. Therefore, production line setup needs to be flexible and allow for quick changes.

Although Hyster-Yale implemented flow manufacturing during the nineties, it didn't have a computer system to manage the flow environment. All plants shared the same ERP system for Material Requirements Planning (MRP), but when it came to flow, each plant used its own solution and its own pocket of data, primarily through spreadsheets that were not standardized or maintained for future use.

Flow requires accurate data and includes very specific procedures. Key items include process and material definition, sequence of events, line design, Kanban techniques, Operational Method Sheets (OMSs) and resource planning. Duffett explained, "It was difficult to manage. If we planned for a process or engineering change, the required data was found in multiple un-integrated solutions and spreadsheets. We wanted to standardize the process and pick a best practice solution."

Hyster-Yale started to look for a packaged flow manufacturing solution, but could not find one that sufficiently met its requirements. Eventually it was decided to develop a flow solution in-house, that way guaranteeing it would meet Hyster-Yale's unique requirements and provide competitive advantage.

"Visual LANSA performed well in our large and demanding global development and deployment environment"

Up till then, Hyster-Yale had been using mostly older development languages and technologies to maintain its ERP system. These were not suitable for a large new development project. The search for a rapid application development platform, that would help to deliver the solution in a quick and successful manner, began.

"LANSA suited our needs best," explained Buddy Evans, Director Global I.T. Applications Development & Support. "The LANSA rapid application development platform had a long track-record with many customer references and successful projects. We could use it to develop both web and rich-client applications. Also, although LANSA was a clear leader on the IBM i platform, it didn't lock us in. We could deploy LANSA-developed applications on Windows and other platforms as well."

The Solution

FlowBase phase one consisted of modules for Line Design, Materials Definition, Operational Method Sheet Management and Kanban Management. It was designed to tightly integrate with Hyster-Yale's MRP and Order Management systems. To prevent data duplication FlowBase retrieves data in real-time from these and other Hyster-Yale systems.

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Integration with third party applications was especially important in the Operational Method Sheet (OMS) module. OMSs are pictorial representations of the work content. The Visual LANSA code in FlowBase calls Adobe Photoshop to create the sheets and then presents the graphic display of the sheets inside a browser within the application.

During the project Hyster-Yale's developers received formal training as well as informal on the job mentoring from LANSA Professional Services. System testing was done by representatives at plants across the world. Phase one, consisting of roughly 400 programs and 200 database files, took 18 months including training, design, development, testing and the global roll-out to eight plants in three different languages.

The Benefits

"Our developers found LANSA's high-level language and Repository easy to use. The biggest learning curve was to understand the event driven paradigm of Web and Windows development. It was very helpful to get best-practice mentoring and real-life hands-on experience under the guidance of LANSA Professional Services. There was a tremendous knowledge transfer. The system is now supported and maintained by our own IT team," said Evans.

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"Flow manufacturing requires accurate formalized data and complex calculations. The LANSA toolset has enabled us to deliver a user-friendly and robust application that drives our global manufacturing operations with accuracy and timeliness. The custom solution creates a competitive advantage and has allowed us to sustain and continually grow the efficiencies and benefits already realized," said Duffett.

Conclusion

"FlowBase is a large application with hundreds of functions and files and many integration points with other systems. In support of our global approach, LANSA's multilingual facilities made it possible to deploy FlowBase to over 360 users in English, Spanish and Italian, from a single code base. In addition, the project involved development and testing teams in multiple locations worldwide," concludes Evans.

"Visual LANSA performed well in our large and demanding global development and deployment environment. We are now looking at using LANSA for other solution opportunities."

Company and System Information

- Hyster-Yale Materials Handling, Inc, with its global headquarter in Cleveland, Ohio, USA, is one of the world's largest forklift truck manufacturers. Hyster-Yale designs, engineers, manufactures, sells and services a comprehensive line of lift trucks and aftermarket parts marketed globally primarily under the Hyster® and Yale® brand names. Hyster-Yale is a publicly traded company listed on the New York Stock Exchange.
- For more information visit: www.hyster-yale.com
- The Visual LANSA developed FlowBase application integrates with a custom developed order management system and the PRMS Materials Requirement Planning system, both on the IBM i platform. In the Windows environment, FlowBase integrates with Adobe Photoshop and a document management system.

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