PGI Nonwovens automates production with LANSA

PGI Nonwovens B.V. in the Netherlands is part of the Polymer Group, one of the world's leading producers of nonwoven materials for medical, hygiene, wiping, industrial and specialty uses. PGI used Visual LANSA to automate over 30 production lines at its manufacturing plant in Cujik, the Netherlands. The Windows applications integrate in real time with PGI's PRMS ERP on the System i and drive barcode scanners, label printers and robotic devices that count, pack and label products.

Fred Rambow, IT manager at PGI Nonwovens B.V., says, "With LANSA applications and related process changes, we have increased throughput without adding any production lines and reduced labor by fifteen percent in both our converting and manufacturing divisions. We did this with our own small team at a fraction of the cost of a packaged solution. Plus we have a 100 percent fit."

The Opportunity to Improve

PGI Nonwovens B.V., through its Chicopee Wiping division, is the supplier of well-known brand names as Chux, Dusty, B-Clean, Quix Wet, Lavette, J-Cloth, Super-Twill, Ko-Ton, Triko-Tex and Econoline. From its offices in the Netherlands, PGI looks after the entire European and Middle East markets. Major customers include hospitals, retailers, industrial clients. Its largest customer and former owner is Johnson & Johnson.

PGI has a long history with IBM midrange servers and has used the PRMS ERP since 1987. While PGI successfully used RPG to customize and enhance the ERP's back office applications, Rambow saw an opportunity to increase the company's efficiency with integrated PC-based solutions.

"In the mid '90s we wanted to give sales reps in other countries access to customer and sales history on their laptops," explains Rambow.

"We also wanted to automate production lines and forklifts with barcode scanners, label printers, WiFi and other devices."

"Obviously we could not use RPG to automate these PC-based processes, so we looked for a tool that could help us deliver PC solutions that could also tightly integrate with our ERP implementation on the System i."

"I wanted to keep our IT team small and use the same developers for both Windows and System i. LANSA offered standalone PC, System i and client/server deployment."

In 1995, PGI built a wireless 5250 solution that allowed forklift trucks drivers to see the location of materials. At the time PGI was using an aging IBM S/38 with performance problems, aggravated by slow wireless communication with the forklift trucks.

"We were new to LANSA and WiFi and it wasn't a success. But LANSA kept intriguing us as a development tool and we decided to use LANSA for our next project, which was truly PC-based," continues Rambow.

One of 18 workstations equipped with scanner, screen and label printer that sit next to a slitter machine in PGI's manufacturing department.

"Without adding new lines, we increased throughput and reduced labor by 15%."

Laptop Access for Sales Reps

PGI delivered a small but successful Windows application that gave remote sales reps in France, England and the Netherlands a view of sales figures and budgets from their laptops. The raw data was generated by PGI's PRMS ERP solution and made available for download from a Web server in PGI's U.S. head office. A Visual LANSA application on the laptop imported the rep's data and massaged it into a Sybase database.

"The application shows sales history and recent sales transactions in a friendly, graphical format and allowed the reps to communicate more effectively with their customers and negotiate with more knowledge and confidence," says Rambow.

"Clear proof of the application's success were the phone calls from the sales reps we got immediately the site went down."

The Converting Division

Rambow then saw an opportunity to use LANSA in PGI's manufacturing processes.

The manufacturing division produces large master rolls of up to 6,000 meters of fabric and cuts them into slits of 2,400 meters. Each slit gets a barcode label and several are packed onto a roll, wrapped in plastic and labeled.

These rolls are collected with a forklift and moved to a warehouse. When customer orders are received, the converting division gets the rolls from the warehouse, cuts the fabric into small wipes and packages it for distribution.

Operators in the converting division used hand-held terminals to scan the barcodes and enter the hours they worked, but data was only uploaded to the System i twice a day at the end of each shift. Back office staff then

added additional production information and released it for further processing by PRMS.

Rambow wanted to improve the process by capturing information at the source with thin client terminals communicating via Wi-Fi at each of the 12 converting lines. A LANSA solution that prompts operators to complete work order details on the spot and updates the System i data in real time was implemented in six months by a single developer.

"Information is checked and corrected immediately at the source, which avoids the need for expensive correction procedures by back office staff further down the track. System i production and order data is updated in real time, as boxes roll off the line."

"Production staff, many of them unfamiliar with computers, found the solution easy to use and readily accepted the new procedures."

Next the converting division wanted to use robotic devices to print and apply customer information labels to the boxes of packaged wipes as they left the production line.

"While we were unfamiliar with building software that integrated with robotic devices, we decided to give it a try with Visual LANSA. And we succeeded," says Rambow.

The solution involves three Visual LANSA programs. The first uses a COM port to read the production line's programmable logic controller (PLC) to find out if a box is approaching. The PLC reads a barcode that indicates the type of product in the box.

A second program keeps track of the current production orders by communicating directly with PRMS. This program also determines the information to be printed on the label and updates a label file.

The third program detects boxes as they pass, checks the barcode via a COM port and then reads the label database file. If a label is to be printed, it sends the label information to the label printer, via a COM port and the PLC instructs a robot to stick the label on the box. The time from a box approaching the PLC to sticking on the label and updating the ERP is only five seconds.

The Manufacturing Division

PGI's manufacturing division was using an unsupported barcode scanning and labeling network that met only basic requirements.

PGI Nonwoven's IT development team, from left to right Fred Rambow, Robert Buteijn and Enrico van Dinten.

"There was no connection with our ERP system," says Rambow. "Every work order was printed, resulting in large stacks of paper with production details, including the bills of materials. After every shift, the manufacturing department sent these stacks of paper back to the office for entry in the ERP system."

Rambow and his team put in place a similar, but more complex, work order and product registration solution. Again this was followed by a product labeling system.

"By now, we had experience with Visual LANSA and integration with our ERP system was straightforward," says Rambow. "The biggest challenge was finding a thin client with four COM ports."

"Visual LANSA is pleasant to use and lets us deliver smart solutions, quickly."

The Benefits of Automation

"With the help of the LANSA applications on the workshop floor and related process changes, we have increased throughput without adding any production lines and achieved a fifteen percent reduction in labor in both our converting and manufacturing divisions," says Rambow.

"To put that in perspective, the converting division employs 40 people in three shifts per day for five days per week with 12 workstations where operators use the application. The manufacturing division employs 150 people who work in five shifts per day for seven days per week and have 18 workstations where operators use the application."

"Additional benefits are a significant reduction in paperwork and improved accuracy in work orders and production data. Managers and supervisors also have a better view of what is going on because production information in our ERP system is updated in near real time."

"My team consists of two analyst/programmers and three operational staff who look after the network. With this small team, who also maintain our core RPG ERP system, we have been able to put an automated workshop floor solution in place that has cost us far less money than we if we had purchased a packaged solution, or outsourced the development. Plus, we now have a 100 percent fit," concludes Rambow. ■

Company and System Information

- PGI Nonwovens B.V. (PGI) is a subsidiary of Polymer Group, Inc., the third largest producer of nonwoven materials in the world, with 25 manufacturing facilities in 12 countries on four continents. PGI Nonwovens B.V. in the Netherlands was previously part of the Chicopee Wiping division of Johnson & Johnson and was acquired by the Polymer Group in 1995.
  For more information visit: www.chicopee-europe.com and www.polymergroupinc.com
- PGI uses the PRMS ERP solution from SSA Global Technologies (now part of Infor) running on a System i model 520.
- PGI's IT department consist of an IT manager, two analyst/programmers and three operational staff. Over 150 users connect to the ERP system and the workshop floor solution in the converting and manufacturing division is used via 30 thin clients.