

ROLLAND

Paper gains...and more!

WAREHOUSE MANAGEMENT SYSTEMS BENEFITS WHOLE SUPPLY CHAIN

A warehouse management system (WMS) can do far more than optimize a company's storage and inventory functions, however important that purpose may be. The right system, properly implemented, will also influence the supply chain in both directions from the core activity -enhancing distribution and customer service levels on one side and helping to achieve production efficiencies on the other.

By Richard Rix

A casebook study of such a system is in operation at Rolland Inc. fine papers division, a member of the Cascades group of companies since 1992. System implementation was completed at the Saint-Jérôme, Quebec, paper mill and distribution centre in 1999. It has already had a dramatic effect on key aspects of production and order fulfillment and even the way that business operations are shaping up for the future.

The system uses radio frequency and barcodes under the direction of custom-engineered software running on an AS/400 platform. Developed by TECSYS Inc. of Markham, Ontario, TECSYS WMS is a software package that was tailored to Rolland's unique needs, including a direct interface to the existing production system. TECSYS also assisted Rolland in the selection of key hardware, such as barcode scanners, and in the strategic placement of barcode tags in storage locations.

TECSYS WMS supports all industry-compliant barcode labels, such as MH-10 labels as well as internal slot labels, license plate labels and product labels. It employs radio frequency (RF) terminals online to the system and functions with all RF technology.

“The flexibility to adapt the software to our needs was a major selection factor. says Bernard Lamoureux, Director of Information Technology for Rolland Inc. .Otherwise, we would have been looking at buying a big package with no flexibility. From the IT point of view, an added advantage is that the program runs on an AS/400 platform - which we were already using - with all the inherent advantages of stability and reliability.”

Among the achievements of TECSYS WMS, it has raised customer service levels sharply, with no more late deliveries and very few back orders. It has also helped bring about a drastic reduction in rejections and reworks and has eliminated the need for physical inventory counts. As a bonus, TECSYS WMS has helped facilitate plans for Rolland to pursue new business opportunities at the distribution centre.

The mill and distribution centre in Saint-Jérôme, a small town about 35 km northwest of Montreal, are in two separate buildings a few kilometers apart. The mill's early roots are revealed by its sturdy 19th-century red-brick architecture and the close proximity of the lively Rivière du Nord, once an important source of power for the mill. The distribution centre, whose initials CCDR stand for Centre de Conversion et de Distribution, division de Rolland Inc, occupies a more modern building with good highway access.

Rolls of paper are shipped from the mill to the CCDR for converting on the machines there. The quantity shipped depends upon customer demand, and can vary from less than 200 tonnes one day to more than 500 tonnes the next. On average, some 6,000 tonnes comprising 1200 SKUs (stock-keeping units) of finished product are stored at the CCDR. Shipping quantities can fluctuate as widely as receiving quantities, which is a feature that TECSYS WMS can accommodate.

As for the mill itself, it maintains an inventory of around 3200 tonnes of paper, in rolls. The main product is high-grade printing and writing paper, produced at different basis weight levels with a high degree of brightness and opacity. Much of it is shipped direct to end-users who will do their own converting.

Therefore, CCDR may be regarded as one of many customers of the mill. The mill also produces some security papers, which called for secure/restricted zones to be defined within TECSYS WMS.

The mill and the CCDR each have approximately 15 barcode scanners, both handheld and forklift-mounted units. An RF system by Symbol has been in place at the mill since the mid 1990s. TECSYS WMS interfaces perfectly with it, as it will with any RF system. If there had not already been an RF system in place, TECSYS would have installed one.

The CCDR is a 220,000-square foot building, with about half the space dedicated to converting operations and the other half to storage, handling and shipment preparation. Some 110 people work at the CCDR but there are no foremen, just two coordinators. After paper is converted, it is stored according to one of three major classifications:

- 1) Inventory, on a max./min. basis;
- 2) Custom Order Processing, which accounts for close to 40% of converting activity; and 3) Make-To-Hold for specific customers.

All the racks at the CCDR are barcoded, a feature that is an integral part of TECSYS WMS. Order picking takes place from the lower levels and restocking from the upper levels. There is a good deal of less-than-palletload picking, requiring 14 people working on two shifts.

Among material handling highlights, the racking was designed and installed by Technirack, with special steel plates at the base to spread the weight. Storage is five levels high, with access from nine-foot aisles. There are about a dozen Hyster and Raymond lift trucks, with reach trucks working the aisles.

There is also a large bulk storage area. Barcodes have actually been produced at Rolland for several years, on in-process rolls and for finished goods. As we will see soon, TECSYS WMS is key to the successful operation of the CCDR but there is more to it than that. It also interfaces directly with the mill's production system and takes care of the mill's own finished goods inventory.

"We provided the specifications and TECSYS wrote the interface program," Mr. Lamoureux says. "It took five to six weeks, followed by a problem-free installation. Now, once roll wrapping is done in the mill and it is sheeted as a finished product, it enters TECSYS WMS." Once TECSYS WMS accepts the inventory, shop-floor control is advised that they cannot make any further changes to it as a production item. It is a two-way interface, and items can be returned to production, if necessary, for rework or recycling.

While most of the benefits of TECSYS WMS accrue at the CCDR, the mill itself benefits in many ways with regard to roll storage and handling, according to Michel Charbonneau, General Operations Manager.

"Before, we were using two teams per shift at the mill for warehousing and shipping, including one checker who had to verify the identity of the roll before loading it onto a truck," Mr. Charbonneau says. "As often as not, the checker was also the one who would have to locate the roll, and he could be running all over the warehouse trying to find it. With TECSYS WMS, we don't need the checker, so all the shipping employees are working to load trucks for shipments."

Precise inventory location and rapid loading have improved customer service levels and have led to other savings, as Mr. Charbonneau explains.

"Because we often had problems finding inventory, we would have to do a physical count twice a year. On average we'd find 300 tonnes of misplaced inventory each time, which meant that 600 tonnes per year had not been shipped because it couldn't be found, which impacted customer service and revenue and often meant we had to recycle product. Today, it's no longer a problem.

"We are in a much better position to respect delivery dates, and we've achieved 99% or better order fulfillment from both the mill and the CCDR in the last six months. Five years ago we set an objective to become a world-class producer of fine papers (ISO 9002 certified). Now, we're halfway there and we

would not have achieved this without TECSYS. With their TECSYS WMS, we're now shipping the right product to the customer on time, and the twice-yearly inventory count is a thing of the past."

It is within the CCDR itself that TECSYS WMS is having the biggest impact. As well as the production interface, the system interfaces with order entry, shipping transactions and inventory to result in total integration of the complete order fulfillment cycle, including order tracking, order picking, load consolidation, freight transportation ... and a lot more. The impact on customer service is truly impressive, yet TECSYS WMS is structured in such a way that customer service is not inundated with data that it doesn't need. TECSYS WMS controls and directs the warehousing operation, but at the end of the process it distills all the information that can be of use to the customer and billing departments, so automatically fulfilling both operational and administrative requirements. In the process, it has helped the CCDR revise its warehouse map, stock locations and picking patterns, making everything far more efficient. "Customers are noticing the change," says René Goguen, the CCDR's General Manager. "We have always been a service-oriented company but the pressure to be so was increased when we transitioned from full-pallet to split-pallet shipping, as customers put in their own automated systems, requiring faster and more responsive service from us."

Mr. Goguen says that the previous manual system was error-prone and caused excessive delays in making shipments, leading to high rates of overtime.

"We used to have 18 people and an overtime rate of about 27%. Now, it is 14 people and 2 1/2% overtime. As well, there is so much more space made available in the warehouse that we can do a much better job of stock rotation and of seeing what's going on. We're now looking at bringing in outside inventory for distribution. We're in a position to convert outside product here and track it right through to shipping:"

Any order for a warehouse item received by 5:00 p.m. will be delivered next day, wherever physically possible. Some 60% of CCDR's business is cross-border, with the other 40% in Canada, coast to coast.

"Our business was 80% Canadian until free trade," Mr. Goguen says. "The competition from the US meant we had to move from commodity to specialty papers, leading to an improved product line in text and cover grades:" Mr. Goguen says that TECSYS WMS has almost .plug-in. capability and is extremely flexible - far more so than most big systems.

"Now, trucks leave on time and on schedule. We can 'blitz' an order if necessary, picking a complete load in 15 or 20 minutes if the trucker comes early. Before, the trucker had the bill of lading and would have to wait for hours for the load. Now, he has the load and is waiting five minutes for the bill of lading!"

Among operational features, TECSYS WMS allows the CCDR to split orders, wave pick and consolidate them again at the dock. Stock is allocated to the order as soon as the order comes in, and if the stock is not in a picking position, TECSYS WMS triggers a letdown. It also interleaves picking with replenishment, for the most efficient use of time and equipment.

"The system allows us to do things that we couldn't do before, for all kinds of productive reasons," Mr. Goguen says. For example, we can analyze shipments as groupings by customers, and we can set some proactive parameters, such as not sending less than 2000 pounds per stop-off.

"Customer service is the biggest beneficiary, though. There are no overs and unders, we have gotten rid of multiple bills for multiple orders, and as for late deliveries, they went away right away."

The use of radio frequency means that pickers are selecting and recording products in real time, as they are picked. "It's very easy to re-prioritize orders and perform sequential load building. We can plan orders in advance, make accurate forecasts and alert customers as to what to expect. TECSYS WMS smooths the workload and provides full, up-to-the-second detail on orders that are currently being picked. We have a lot of information at our fingertips now that we never had before:"

IT Director Bernard Lamoureux says that he was particularly impressed by TECSYS' knowledge of both software development and the practice of warehouse management. "If we had had to write the software by ourselves, we would have missed a lot of functional things and taken two to three times longer. They have good technical people on the AS/400 - applications people who know and understand warehousing."

In summary, TECSYS WMS has streamlined activities both at CCDR and in the mill's finished goods area. Order picking and truck loading take place faster, and there is no further need for physical inventory counts because nothing ever gets misplaced. Customers receive their shipments on time, every time, thanks to the highly efficient order fulfillment process and the impressive levels of customer service that are realized through implementation of TECSYS WMS.

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