

POWER Partners



Hugh MacDonald, director of special projects for Schenker Distribution, left; Mike Therrien, manager of logistics operations, Unilever Canada.

by P.C. Pethick

Unilever Canada looks to 3PL provider for DC edge

If you're going to enter a foot race, you aim for first place. After all, crossing the finish line before the rest of the pack demonstrates the traits of every consummate champion: perseverance, skill and the drive to succeed.

Is it any surprise that these same traits are also present in supply chain winners? Witness the successful blend of strategic warehouse automation at Unilever Canada's newest food distribution centre (DC) operation in Bramalea, ON, and you'll know that champions aren't only born, but built with teamwork and ingenuity.

Unilever Canada, the internationally established food and consumer goods fixture, known for such brands as Lipton's tea, Hellman's mayonnaise and Ragu pasta sauce, took one step towards the winner's podium when it recruited Schenker of Canada Ltd., a Stinnes Logistics company and its operations/project team, to develop the new facility and act as coach and trainer.

As a long-time specialist in third-party logistics (3PL) operations, Schenker offered a regiment of racking strategies, multi-tiered conveyor-driven picking and a robust warehouse management system (WMS) to put Unilever's supply chain through its paces.

At first glance, the 26,800 square-metre Schenker warehouse (of which Unilever is the sole tenant) is non-descript against a back drop of industrial facilities and "Big Box" retail stores. Step inside, however, and the serpentine coils of conveyor, the bustle of stockpickers and towering racking structures reveal a facility to be reckoned with.

"The project was a lot of hard work," says Mike Therrien, manager of logistics operations and one of several team members to work on the project from Unilever Canada's end. "But when you look at what we were able to achieve—all the key performance indicators, the productivity and the efficiencies, we're actually exceeding our goals."

With more than 25,000 pallet positions, the warehouse acts as a staging ground for a number of Unilever-brand

food products sourced from various production facilities in Canada, the US and Europe. Outbound loads typically head to national grocery distribution centres and the direct-store delivery market across Canada. While the outfit sounds simple enough, what makes the facility a real winner is the systems integration and strategic automation, which has full-pallet and case-picking operations running like finely tuned athletes.

“What we’ve been able to deliver are some really high standards,” says Hugh MacDonald, director of special projects for Schenker Distribution. “We’ve seen a reduction in damages, accuracy is up and pallet qualities going out of the building are superb. It’s potentially setting new industry standards.”

A smooth operation wasn’t the only prize for Unilever. One of the main goals behind the project was to go to a single source for warehousing its Canadian food operation. Unilever studies on the idea not only pointed towards cost savings, but also value-added service to customers because the single location was simpler to manage.

“We had a model with our Home and Personal Care (HPC) unit to go to a single source DC for all of Canada,” says Unilever’s Therrien. “Given the increase in transportation costs, with technology now tracing en route and the speed of double teams, we got away many years ago from having one warehouse in every province to eventually having strategic warehouses throughout Canada.

“Now, we’re going down to just one location. The move has simplified our forecast planning and sourcing, while getting us away from having the wrong case and the wrong product in the wrong location for demand.”

In a distribution juggling act, Unilever and Schenker moved into the new building and began relocating Lipton food products in mid-February, while consolidating 9,290 square metres of HPC products into the former Lipton base. Unilever’s Best Foods division, located primarily in Montreal, was rolled into the facility shortly thereafter. At press time, a third facility based in Calgary was due to settle into the new digs.

“It’s no different than seeing a house being built—watching it go from a hole in the ground to seeing it slowly completed and fully operational,” says Therrien. “It was a great success.”

Heart Rate

The rapid pulse of the facility is driven by SoliNet, Schenker’s robust WMS, developed in conjunction with Markham, ON-based Application Solutions Inc. (ASI). As a highly integrated WMS, SoliNet is linked to every function of the warehouse, controlling inventory, directing inbound putaway, wave generation and pallet building—not to mention the radio frequency (RF)-driven, full-pallet picking operation.

“This WMS is a package,” says Jim Hanning, ASI’s vice-president. “The system is configurable and capable of doing various kinds of businesses. Our trick is to figure out what’s unique in the operation, to see what little details we’re going to stub our toe on because the devil is in the details.”

Product coming into the facility is initially unloaded at one of Schenker’s 30 dock doors, which are bar coded and can be used for both inbound and outbound movements, depending on the day’s



The Schenker/Unilever warehouse has more than 25,000 pallet positions.

activities. Each pallet in a load is checked and entered into the system, with a receiving label pre-printed by ASI's subsidiary Barcode ServiceExpress Inc. At this point, it's also designated a location in the warehouse, depending on first in/first out (FI/FO) rules.

"Everything is 'real time' and paperless," says Schenker's MacDonald. "If it's scanned in receiving and put in an overflow location, we know where to go check. The forklift driver will in turn be directed to that location to do a putaway, or cross dock if it's required."

J.H. Ryder Machinery Limited of Toronto supplied the fleet of Crown materials handling equipment that provides the muscle behind full-pallet movements. There are surprisingly few vehicles, however, for a facility with such a large footprint. This is due mainly to the inventive use of EAB's high-density, shuttle-rack systems, imported from Sweden in 25 shipping containers, and installed by Mississauga-based Johnston Equipment.

As one of the largest shuttle-rack installations of its kind in Canada, the Unilever operation employs 12-deep and 24-deep configurations, using one of eight RF-guided shuttles to move product from the back of the racks to the front, again remaining consistent with FI/FO rules. According to MacDonald, it was a move that helped eliminate the requirement for more than 4,600 square metres of racking space, had they gone with a standard approach.

Single selective pallet racks, from Burlington, ON-based Pacific Westeel Racking Inc., are also used throughout the facility, lining the outer walls and forming a maze of aisles stacked five positions to the ceiling. "We've also got some bulk overflow storage locations right now, measuring about 30,000 square feet [2,787 square metres]," says MacDonald. "We have the ability to flex into that area if business requires, and that can be either more high-density racking or standard single selective racking."

Pick Podium

When an outbound order comes in from Unilever via electronic data interchange (EDI), it's downloaded into the WMS and the facility jumps to life—splitting orders into full-pallet and case-picking waves. Obviously, the full-pallet picks are the simpler of the two and are carried out by stockpickers equipped with Psion Teklogix 7035 RF units to direct their actions.

The case-picking operation poses a challenge that's far more intricate and labour intensive. First, the WMS operator must group



WMS and RF technology help workers locate pick orders.



The conveyor snakes its way through the warehouse.

orders and create a wave based on a number of criteria, which is then manually checked and released in the system.

"We'll group orders based on proximity, delivery times or appointments," says MacDonald. "The system, once a wave is released, prints labels [on a Sato America CL408e bar-code printer]. In turn, they're handed out to pickers on the floor."

To increase efficiencies over purely manual case-picking operations, Schenker opted for a pick-to-belt strategy, and saved space by stacking pick faces into a pair of double-high towers, also installed by Pacific Westeel. Product, depending on its weight and velocity, is loaded into three-deep pallet flow or single selective racking, allowing for easy replenishment when stocking requirements demand.

The conveyor, engineered by Michigan-based Ermanco Inc. and installed by Mississauga-based Logix Conveyor, snakes its way through the lower level of the pick zone, climbs up through a coil to the tower's top level and eventually winds its way down to the recirculation area and several manual pallet building stations, which are located near the dock doors. With the ability to add a third level, the pick towers could be easily expanded by an additional 30 percent if necessary.

"By going to the pick towers and conveyor, we reduced the need for end riders and RF hardware, while at the same time, simplifying the pick process by directing employees to one pick location or zone as opposed to travelling a complete pick run," says MacDonald. "By reducing the amount of travel and simplifying the pick, we were able to increase the accuracy and productivity, while



The distribution centre makes use of warehouse automation at its best. The profile includes: leading-edge conveyors; powerful WMS technology; high-density, shuttle-rack systems and more.



reducing the amount of training required by employees.”

When a wave is ready to be picked, Schenker employees take up their positions in the towers and begin picking product according to the labels they've been designated, which are applied to the top of each carton. Cases, beginning with the heavier selections first, wind their way along the conveyor system until they're scanned by an Accu-Sort fixed scanner. The latter diverts the cases to a pallet-building station, recirculation or into a hospital lane, if the pick label is unreadable or the product damaged.

“What the scan does is check with the computer whether the picker put the right label on the right product,” says ASI's Hanning, noting that two additional scanners pick up each carton's SCC code printed on the side for near 100 percent verification. “The database keeps track of the fact that there were say 2,840 cases to be picked. It knows each case number going through the scanner and ticks it off as it passes through.”

Schenker employees in the warehouse can view their progress on a giant “scoreboard” installed to promote visibility. By accessing the scoreboard via the Web on a standard html page, Unilever employees are also able to monitor progress on the warehouse floor. When a case passes underneath the scanner under normal circumstances, it's diverted to a pallet-building station. Pallet builders identify pallet and level for each case (incorporated in the label), with the system building the best pallet using predefined criteria. This process is actually decided earlier when SoliNet creates the waves, in order to ensure pallets going out the door to the store are assembled with quality.

“One difficulty was understanding how the system could work, and that's why we did a lot of data simulation,” says Hanning, who credits the combined efforts of the ASI and Schenker implementation teams in the development of the pallet-building simulation programs. “Building a pallet is a lot like building a pyramid in that you have to have a solid base. What we had to do was take our system and rework it to help build the waves, figure out the sequencing and interface it all.”

According to Therrien and MacDonald, what Schenker and Unilever have managed to develop, in collusion with a number of local and national suppliers, could be a first for Unilever globally.

“What this warehouse allows us to do is maintain our low cost-per-case, using strategic automation,” says Therrien. “We had to invest a lot of money in technology and automation, but we've been able to maintain the costs we enjoyed over the last five years. It's really a ‘win/win’ for us.”

Finish Line

While those gathered for the facility's grand opening in June may have thought Unilever and its 3PL partner Schenker crossed the finish line in fine form, both companies will tell you the race has just begun. The next hurdle will have the two organizations prepare for Unilever's growth over the next 10 years, something they've already begun training for.

“We have the flexibility to expand every system in here,” says MacDonald. “Whether it's single selective or the high-density racking, whether it's the conveyors or the pick towers—we've allowed substantial room for growth with Unilever. We're not going to limit our customers in a specific area. If they're going to grow, we want to grow with them.”

“After all, the only way you're keeping customers these days is to develop a relationship they're able to work with and expand on. If we stop that at any one time, we're going to fall by the wayside.” **MM&D**