RFID Drives Savings
and Enhances Customer Service

With ROI in as little as two years, radio frequency identification boosts operational efficiency

By Bill Dougherty

Three of the biggest operating expenses incurred by textile maintenance operators are production labor, merchandise and delivery costs. Shortages are the most frequent complaint that textile service operators receive.

Advanced technology provides textile maintenance operators with greatly increased speed when counting soiled textiles. It also allows for the verification of the content of bundles of items, while speeding the processing of soiled and clean textiles through a processing facility. By verifying what's going out on delivery vehicles it can eliminate special deliveries caused by plant discrepancies. Many operators that have embraced technology have experienced a reduction in labor costs on average of 1-3% and a reduction in merchandise costs of 2-4%.

RFID systems, like the ones shown above and at right, improve production speed and precision because technology drives the system, not people.

The industry was introduced to Radio Frequency (RF) technology in the early 1990s, when the first textile rental company began using it in Europe to track garments. Since then the technology has undergone dramatic improvements. Today, hundreds of textile service operators are using several hundred million RF chips worldwide. While there's no organization or group that establishes standards for the textile maintenance industry, a quasi-standard has evolved featuring high frequency (13.56 MHz)—multiple read technology. This meets both ISO 18000-03 and 15693-02, 03 specifications.

With multiple-read technology, many chips can be read simultaneously. This makes it possible to scan several soiled or clean items at once, including apparel, healthcare, food and beverage items, as well as mats, mops and other textiles. These can be counted in piles, bags, bundled together, in packages or as single items.

The most common-size chip in use today is less than 16 mm in diameter (which is smaller than a dime) and less than 3 mm thick. End users hardly notice them, since they can be sewn into a garment or hospitality or healthcare item, or contained in a walk-off mat or mop. There are several systems available that will improve productivity and reduce merchandise costs. In addition, RF provides a method to electronically identify what's going out on a delivery vehicle to ensure complete and accurate deliveries and reduce, or eliminate the need for special deliveries to customers.

Some of the common industry uses of RF that operators enjoy today include:

Manual Sorting of Clean Garments on Hangers – RF technology drives the manual-sorting process of clean garments. It allows you to eliminate the guesswork or exception books and/or charts to refer to, or memorize. Productivity is always consistent, with employees that have performed the task for years, or relatively new ones. Why? Because the software drives the process—not the employee.

A system is generally comprised of two sorts. The first sort can be a stationary spider-type system, or a moving graduated-hook conveyor. The second sort, which is also the final sort, can be a stationary system or another moving graduated-hook conveyor.

An RF-driven system eliminates the need for a third sort.

A significant benefit is that the garments are in route-delivery sequence on the second sort with only one handling.

Operators are reporting a constant production of 1,200-1,400 pieces per operator hour on each sort with few if any errors.

Operators can track the uniforms at every step of their whereabouts: in the wardrobe clean, out to an employee, back from the employee, out to the laundry for cleaning, back from the laundry. The system also provides exceptions such as missing pieces, items turned back in late, etc.

Automatic Sortation of Clean Garments – There are several very happy operators using fully automatic clean-garment sortation systems driven by RFID. Unlike barcode-driven scanning, which generally results in a high 'no read' factor, garments containing RF chips usually have a scan rate in the 99%+ range.

RFID technology enables operators to avoid scanning or counting individual apparel items, like the ones shown above/right. With multiple-read chips, the system can automatically count a bundle of garments and record the contents electronically.

Clean Garment Bundle Reader – There's no longer a need to scan or count individual clean pieces to obtain a bundled-garment count. With multiple-read chips, you can now read all the chips in a hangered bundle, and verify the contents electronically, prior to staging it in the route-ready area. Productivity is in the 3,000+-piece per-hour range.

If the bundle isn't complete, or contains one or more wrong items, you'll know immediately. With a complete system, it's easy to determine the last place a particular piece was handled, if there's a discrepancy.

Folded Items – Reduce the space and labor required to perform the sorting and assembly of folded items. There are two versions:

1. The first is for folded garments, or hospitality or healthcare items.

2. The second is a version designed for use in a clean room, where airflow is required in a controlled environment.

Mats – The processing of clean mats containing RF chips has eliminated two of the four steps usually performed in a plant when processing and pulling clean mats for route make up. By going directly from mat rolling, or folding to route building, operators are able to reduce space needed in the plant for mat storage, and the number of people required to handle clean mats.

Happy customers have indicated a reduction in labor and a 2-4% decrease in merchandise costs with an RF-driven mat sorting and tracking system.

In addition, the sorting system also contains a tracking system that provides the ability to identify the exact location of every mat, whether it's in the plant, on a truck, or at the customer—all the time—with no additional labor in the plant or on the route.

This system works with mops as well.

Tunnel Reader – Verifying the number of soiled textiles received at the plant has always been an issue. In addition, soil counts are often in dispute.

Worry no longer—chips in garments, high-value hospitality and healthcare items as well as mats and mops can be scanned on a conveyor belt as they move through a tunnel reader, providing accurate soil counts of many pieces simultaneously.

In addition, the tunnel reader also can be used to verify the contents of wrapped bundles being dispatched clean from the plant.

Hospitality Wardrobes – Hotel, casino and theme park uniform management can be a major operation. Without the proper garments, customer contact personnel simply won't be properly attired.

There are various methods for managing this critical operation. The concept of wardrobe areas with minimal attendants is an ideal installation. RF chips can reduce the manpower needed to operate these installations, while providing accuracy not attainable without electronic identification. ☞

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Party Rentals – Control of merchandise, identification of customers responsible for losses and damages, late returns, etc., have plagued party linen rental operators who use manual systems to distribute and track their linen items.

Similarly, the makeup of orders can be cumbersome and subject to employee error when done manually. RF identification and order filling, driven electronically by RF technology, provides accuracy and backup documentation of the whereabouts of every piece of party linen containing an RF chip.

Era of electronic tracking

Many textile maintenance and rental operators have proven that the use of RF technology reduces payroll and merchandise-replacement costs, while improving distribution. This technology provides the user with the tools to justify loss and damage charges. It also identifies complete loads, reducing, or eliminating the need for special deliveries caused by the laundry.

RFID gives operators greater control over party rental items than manual systems by more effectively identifying those customers responsible for losses, damage and late returns.

The average ROI has been reported as less than 24 months. With all the benefits this technology provides to move a company into the age of electronic tracking, one must ask: Why haven't more textile service companies embraced the concept and implemented it in their operations? TR

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