In recent years, radio frequency ID chips (RFID) have significantly benefited laundry services in both the healthcare and hospitality industries. Due to the technology’s ability to adequately track products, reduce lost items and cut costs, an ever-increasing number of healthcare facilities, as well as hotels and resorts, are implementing RFID into their day-to-day operations.
Whether a facility’s laundry service is outsourced or in-house, RFID is a vital tool in managing its thousands of textile products that are cleaned, ironed, folded, shipped and stored each day. Utilizing an RFID system for linen inventory also helps establish more efficient operations, and saves time, money and effort for retailers while building sales volumes.

RFID enables communication between devices and objects through a tag. The tags make any object easily and uniquely identifiable and also allow the tagged object to wirelessly communicate data.

**Ultra High Frequencies**

In the RFID industry, there are three primary technologies: low frequency (LF), high frequency (HF), and ultra-high frequencies (UHF).

Recently, UHF technology has been utilized more frequently because of the capability of its read distance and its ability to scan high volumes of linen quickly and accurately. In the past, the LF and HF had a read distance of around two feet, whereas UHF has the ability to be scanned up to 20 feet away.

With LF and HF capabilities, an average-sized cart carrying around 1,000 pieces of linen was impossible to scan. But with UHF’s ability to energize the entire area of the cart, an inventory of items is provided almost instantaneously.

UHF is also gaining traction from a cost standpoint. “The cost of point of entry is a lot less expensive today than it was two or three years ago,” said Daryl Kuna, vice president of sales of the RFID manufacturing company Datamars.

While RFID offers many values within the linen industry, there has been some negativity surrounding it due to perceptions of employees and/or customers being tracked and monitored by the technology. But in reality, RFID is not active until it passes an energy field and sends a signal back to the antennae. In other words, it is less invasive than people think.

One must also remember that RFID is already being implemented in most other areas of healthcare facilities. Patient identification bracelets, blood bags, prescriptions, and medical equipment are all being tracked by the technology, and in most cases they share the same UHF tags used to track linen.

**Advantages**

In the hospitality industry, RFIT provides the ability to prevent loss of high end textiles. With the technology, hotel managers can determine what percentage of linen went to the laundry but never returned, as well as the percentage that was scanned into the hotel but never went back to the laundry.

In the healthcare setting, one of the major advantages of RFID is the way it helps hospitals meet government regulations. Certain garments may be restricted to being washed a specific number of times before they are inspected for absorptivity to make sure no bloodborne pathogens are present.

Instead of having to manually check a box on a garment tag each time it is washed, with RFID, items can be quickly passed over antennas and an alarm will sound when they have met their washing time frame and need to be tested.

**Return on Investment**

Much of the return on investment (ROI) for RFID technology depends on whether healthcare and hospitality operations plan to charge their customers and/or employees for loss of linen (i.e. scrubs). For example, in the healthcare industry, it makes a big difference whether a facility is an OPL that owns its own laundry, whether it owns the linen (COG) but outsources its laundry processing, or whether it rents linens from a linen company.

Hospitals that own their own linen and laundry facilities are responsible for the entire process, so they feel the pain the most when linens are being lost. On the other hand, hospitals that rent their linen and have contracts with big laundries pay a lot more money up front, but since they don’t see the numbers of lost linen, they don’t realize the cost difference.

OPL’s and hospitals using COG’s bear all the responsibility for linen inventory and linen loss. On the other hand, hospitals that outsource laundry processing and have rental linens may be charged a flat linen replacement cost per pound and therefore, do not understand the impact of linen loss. Hospitals that bear the cost of linen replacements, or have contractual fees associated with linen loss will have a direct incentive to invest in RFID technology as a means to manage and control inventory to reduce linen replacement costs. Hospitals that have no contractual obligation to help control linen loss do not have a financial incentive to invest in the technology and in this case, the laundry bears all financial gain to implement the RFID technology.
In the hospitality industry, there may be rules in place to retire specific linens after a certain number of washes. RFID technology will allow the facility to compare one linen piece to another because they’ll know the date of service it goes into play and how many wash cycles they’re going to get out of it. The technology can help a facility determine if product is deteriorating too quickly and allows it to quality control the item.

RFID can also track a hospital employee garments, as well as patient bedding and blankets. Linens can often be taken by outside ambulance crews that bring patients in and out of the hospital. By putting RFID scanners above all the exit doors, the hospital will know exactly which linen pieces are coming and going.

Another advantage of using an RFID system is its role in sorting and measuring productivity. The system has the capability of not only scanning each piece of linen, but also sorting and identifying when an item is damaged and needs to be mended. The RFID tags also reveal how fast items are being sorted, washed, ironed, folded, and provide an ROI.

Once a RFID system is put in place to track each individual piece of linen, the facility needs to decide how or if it will charge for losses for their customers.

In the hospitality industry, some of the larger casinos and resorts have garment dispensing systems that can hold thousands of items. Employees scan an identification card with an RFID tag and their uniforms are delivered on a conveyer belt much like at a dry cleaning facility. Since each uniform is tracked via that system, employees get charged for lost uniforms.

Similarly, in some hospitals, there are scrub dispensing systems that allow employees to scan the RFID tag on their badge, after which a cabinet unlocks and allows the employee to take out a garment that is assigned to him or her. There is also typically a chute where employees place their garments when they are finished with them and the RFID registers that they were returned.

Healthcare and hospitality managers must be prepared to put systems such as these in place once RFID is established in order to properly regulate their linen and make the most of the technology. They may also need to re-negotiate contracts with laundry facilities since they charge for linen by the pound and have an automatic fee built in for replacement items. Contractual terms of laundry agreements may also need to be re-negotiated depending upon the specific terms of the contract.
Guide to RFID Implementation

Converting a linen facility over to RFID is not an easy process, but it can be done. Managers may be overwhelmed by the meticulous task of tagging each piece of linen, as well as the substantial investment in both money and human capital but Kuna always advises his customers to take things one step at a time.

“When a laundry decides to go RFID I always recommend them to identify the item that’s the biggest loss item,” he said. “The only way to figure that out is to look at what they buy the most and what’s the most expensive. I tell them to focus on one item, tag it, and evaluate the process. When you do it that way it becomes very simple.”

After analyzing the results of tracking that one item, Kuna encourages facility managers to communicate the results with their customers and employees, and then figure out how they should change their business model. Getting the entire management staff on board to properly implement RFID, learning how to properly use the technology and evaluating the results is a crucial part of the process.

Since the adoption of a new RFID system will impact employees, customers, and business partners, the details of the new process need to be communicated to all levels of an organization in a clear and decisive manner.

Creating a formal mission statement to better explain RFID to an organization should include the following: a convincing need for the change, documented proof the RFID system will deliver long-term tangible benefits, and a detailed road map that will guide planning and decision-making.

While RFID technology has been around for more than 25 years, only a small percentage of healthcare facilities have implemented it into their linen operations. One of the primary reasons for this is because until recently, RFID tags could not endure the commercial laundry process.

It was just three years ago that Datamars developed a technology that would allow RFID tags to withstand the chemical processing and extreme pressure of the ironers in the laundry. Datamars is now in the process of doing trial runs with several large healthcare and hospitality facilities across the country and teaching them how to implement the technology.

How can you get the biggest bang for your buck?

To get the most out of a RFID system, a facility must determine where its biggest linen losses are. For example, in healthcare, a vast amount of employee scrubs disappear during the month of October because of the demand for Halloween costumes. In hospitality, it’s often robes and towels—especially those on cruise ships—that frequently go missing.

Once loss rates are determined, the facility must conduct an analysis and ask why it is losing that particular item. Is the item being lost at the hospital or hotel, or at the laundry? Are employees taking textiles out of the facility?

After those questions are answered, the facility can take the necessary steps to change the way it conducts business and manages its employees, thus reducing its losses.

“When a laundry decides to go RFID I always recommend them to identify the item that’s the biggest loss item”
When shopping for an RFID system, there are several factors a facility should consider.

1. If you rent linen from an outside company, are you being charged for losses? Or if you do own the items, how do you want to manage your linen inventory? There are a variety of RFID antennas that can be purchased to accomplish different tasks.

2. How many sets of linen are used for each room? This will help you know how many RFID tags will be required. Four par of linen per room is usually suggested in order to have one set on the beds, one in the laundry, one coming back from the laundry, and one on the shelf.

3. Are your linens being lost by your laundry service or is it being taken by the employees or guests? RFID technology has the capability to track each one of these groups if a facility wishes to do so.

4. How advanced do you want your RFID technology to be? For example, do you want an audible voice to sound whenever an RFID tag from a linen piece leaves the building? Do you prefer to use motion video or still photo technology in order to detect exactly where your linen is going?

5. Are there government regulations that require you to manage your garments or linen in a certain way?

6. Are there regulations where you would need to determine the last time an item was laundered?

7. Will RFID technology interfere cause interference in your particular facility?

As more casinos, fitness clubs, hospitals, hotels, theme parks and other organizations begin implementing RFID systems to track laundry items on a larger scale, asset visibility will be improved and the number of stolen and lost items reduced. From an efficiency standpoint, it just makes sense.

While converting to an RFID system requires an initial financial and time investment for a facility’s management staff and employees, research shows it’s a worthy decision to make. Taking advantage of this technology and thus embracing the way of the future could boost not only a company’s profits, but also its employees’ morale. If implemented with the right intentions and care, RFID systems will help the linen industry run smoother and pave the way for a more productive future.

**RFID**

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