

# What I Wish I Had Known

The RFID project I managed was ultimately successful, but there were a few lessons I learned the hard way.

Aug. 29, 2005—Hindsight is always 20/20, they say. In the third quarter of 2004, Colorado's El Paso County embarked on a project to track all of its computer assets with RFID technology (see Tracking Assets from Prairie to Peak). During that time, I worked for the county's information technology (IT) department as a project manager for that deployment.

El Paso County's IT department supplies all 2,400 county employees with computer equipment. Various departments within the county's organization have their own IT staff, and they may need to move the equipment once it is in place. This makes it very difficult for the county's IT department to track the location of the PCs and other IT equipment. We determined that we needed a tracking system in which the assets could identify themselves, their location and other basic information. RFID was a natural match for our requirements.

Our RFID project was quite successful, but there are a few things I wish I had known when we started. From the vantage point of a finished project, I'd like to share with you some lessons I learned.

## **Define Your Processes First**

Once we embarked on the project, we realized part of our problem was that the processes we used to receive, distribute and inventory our IT assets were not very well defined and varied greatly depending on who carried them out. A good example was in receiving: Different staff members tracked different information about the assets. Some were quite diligent about tracking each asset's serial number; others, however, were not. Since the system they had was an Excel spreadsheet, it was difficult to have the users follow consistent processes.

I sat down with a group of my colleagues—the IT warehouse staff, the CIO, the help desk staff and the PC support team. After charting out their As-Is (current) processes, I helped design their To-Be (desired) processes. We needed processes that were clearly defined and repeatable so our RFID system would be able to capture the desired data. Without good, clear processes, any type of data-collection system will fail to bring a benefit to an organization. If your processes aren't clearly defined, spend some time in the first stage of the project to map them out and gain buy-in for the new processes from the people who will need to perform them. Be sure, also, to document your To-Be processes well, and to state clearly where and how RFID will be used to facilitate those processes. Well-defined business processes and a clear understanding of the role RFID will play are critical to the success of the project.

## **Test, Test, Test**

When planning the implementation of our project, we expected to need two days to test the tags and readers to determine which brands and models would best suit our requirements, and how we would deploy those tags and readers. If you multiply our estimated time by 10, you will be close to the actual time it took us to figure out the optimal tag placement and our average read range.

After some preliminary testing, we ran into problems with receiving consistent read ranges. If a tag was

mounted on a PC's side instead of its top, the range was different. If it was mounted with thin double-sided tape versus double-sided tape with a foam layer between the tag and the computer, the range was different. After countless variations of location and material to secure the tag, we finally found our best combination. We had wanted to achieve a 10-foot read range, but the best range we could obtain consistently was about 4 to 5 feet.

We also struggled quite a bit when it came to testing the initial reader we purchased. At first, it was difficult to determine why it would read in some situations but not in others. We eventually learned that many external factors affect transmission between the reader and the tags.

Other frustrating characteristics about our reader included a battery life that was impractically short (less than four hours) and a keypad several of our employees felt was too small. Ultimately, we found the task of testing the RFID reader and tags took much longer than anticipated, but it was still crucial to spend adequate time on this step. We were unable to do anything to improve our reader's battery life or keyboard size, and we are still using it today. Before purchasing additional readers, however, the IT department will do further research. The user satisfaction and success of this project rested largely on finding the right tag-reader combination to meet our needs.

### **Find Out What's in the Pipeline**

When we discovered the read range wasn't going to be what we had thought it would be, we began investigating other tags and readers. The technology was improving and coming to market rapidly, so I contacted various tag and reader providers to find out what was coming to market in the next six months. I recommend you do the same, as well as test what is currently available. At the time we were doing our project, there weren't many better options than what we already owned, though in the next six months, new models with significant improvements would be coming out. We were eager to test those, but we needed to move forward with our project and could not wait.

### **Implement a Pilot Project**

Considering the evolving nature of the technology, as well as the numerous environmental factors that affect RFID systems, I highly recommend undertaking a pilot project prior to full deployment. Over the years, I have worked on many other types of projects involving different software packages, hardware platforms and industries. Rarely have I wanted to take the time to undertake a pilot project prior to full deployment. However, we did conduct a pilot at El Paso County, and it uncovered quite a few problems we would not have anticipated otherwise. The involvement of knowledgeable users in our pilot project greatly increased the benefit we derived from it.

When you carry out your pilot, I suggest you involve people at your organization who best understand the capabilities of your supply chain software and your operations. The pilot's scope should be very well-defined to ensure you adequately test the desired functionality. Participants should be encouraged to give honest feedback, even if it isn't popular. A pilot project is an excellent way to limit significantly the risk involved with the main project.

With this evolving technology, nothing is going to be in perfect clarity at the moment. Still, the options are very good and can achieve your business objectives. When considering doing an RFID project, make sure you have your processes well defined, give yourself adequate time for testing the tags and readers, explore new technology and, if possible, conduct a pilot to prove your concept. Good luck!

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