



## Industry Week's **RFID Strategy**

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A S S O C I A T E S



## **RFID Pilot Products in Manufacturing**

*Key steps include determining the goal and gaining executive buy-in*

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Are your customers demanding that you implement radio frequency identification (RFID)? Or perhaps your organization wants to test an integrated system with RFID implementation. Whatever the motivation, it is time to explore the specific use of RFID in the manufacturing environment and learn the key steps in a pilot project.

### **A Note On Integration**

In the last 12 years, I have been in more than 100 manufacturing plants in a variety of industries and can count on one hand the number that used bar codes (and none with RFID) integrated with a manufacturing execution system to provide real-time process control on the factory floor. This means that for many of you, integrated data capture on the factory floor may be a new concept.

### **Manufacturing-Specific RFID Applications**

There are various types of RFID tags that can benefit manufacturers. An active RFID tag can be embedded in an employee identification card to relay as little information as the employee ID or as much information as security access codes to the site and computer network, software application passwords, and biometric fingerprint signatures that match the card to the employee's thumbprint captured real-time via a scanner and finally to their biometric signature within a database to provide the ultimate security control.

Active tags also can be attached to forklifts and pallet jacks to provide real-time visibility of material movement in the facility. Embedded active tags in pallets can be associated with the passive tag IDs for the finished goods (or work-in-process) inventory on the pallet for tracking purposes. Active tags can be attached to all fixed assets as they are installed to capture the asset tag number, install date and equipment specifications. Over time, these tags can be updated to hold full maintenance history. As for passive tags, they can be attached to hand and power tools used by plant maintenance staff to create a check-in/check-out process.

In high-speed manufacturing or material movement environments, conveyor speeds of 600 feet per minute and more have been achieved with RFID. The challenge is to build a system that incorporates multiple readers in a scan tunnel (or process choke point) that can "interrogate" the items as they pass by several times.

Keeping these manufacturing-specific RFID applications in mind, you can move to the pilot project stage. The key steps to developing a pilot project are:

- **Determine the project goal.** Is it simply customer compliance as a first phase, or are you planning on gaining internal efficiencies from the project?
- **Ensure executive ownership.** These projects can drag out for years without an executive champion who can obtain funding and ensure that resource requirements are met.
- **Assign a project leader.** This person should be well liked and have a good grasp of business operations, customer requirements and technology infrastructure within your company. You should have this person (or team if needed) spend a few months going to seminars and learning about RFID before you even begin.
- **Conduct an operations and technology assessment.** Typically, this step is done in conjunction with an RFID systems integrator. The assessment consists of detailed process mapping in affected areas, staff profiles (to identify training needs), facility layout, material flow shown on the facility layout, product profile (which items are in pilot), internal systems that will be impacted, and key performance indicators in use. Once information is gathered, alternatives are documented and prioritized. Next, a high-level costs and benefits analysis is completed and a choice is made on an approach.
- **Develop the business case.** Most companies require that a capital appropriation request be completed with a detailed business case for the pilot project. Other companies simply need a detailed budget of expenditures, since the project may only focus on customer compliance regardless of benefits internally.
- **Conduct product and technology testing.** Here is a **great** use of an experienced systems integrator with an RFID test lab. You can do all of your initial product configuration testing, determine the type of tag, placement of tags, and even "mock up" your environment for some volume testing before you spend money on equipment for your site(s).
- **Production pilot.** There are a variety of actions needed at this step, including developing detailed project schedule and business stakeholder communications; edgware/middleware functional requirements definition; physical set-up of the production pilot test area; conference room pilot with all technology partners; application and interface development and testing; hardware/software installation, configuration and de-bugging; software validation (in regulated facilities); production pilot integration testing; written procedure development; end-user training; and go-live and support.

*Future columns will explore pilot project issues in more detail.*

**\*Chris York's RFID column appears twice monthly in IndustryWeek's RFID Strategy newsletter and on IndustryWeek.com. Click [here](#) to register for the newsletter.**