



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

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**TOMPKINS**  
A S S O C I A T E S



### **I'm Glad You Asked**

*Chris York answers readers' questions.*

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Over the past few months, readers have raised quite a few questions about the column subjects we address. I have tried to respond directly to as many readers as possible, but we felt it might be beneficial to answer some of the more common questions in this forum. The top three questions from readers are answered below.

#### **What do I need to test my product for RFID readability before I ship to Wal-Mart?**

We recently published a [column](#) that discusses testing issues for RFID compliance, but I want to address an area that I touched on only briefly in that report: the site survey. The site survey is critical to successful RFID deployment. In each facility there may be various radio frequencies already in use (wireless area networks for PCs and handheld, mobile phones, and wireless bar-code scanners are just a few). During the reader interrogation process, the competing frequencies can cause many of the tags to be missed because the RFID reader is picking up more information than just that being sent from the RFID tags themselves. The site survey uses a broad frequency spectrum antenna to identify all frequencies present, their strength and direction. Once this information is known, you can develop a plan to shield the RFID reader, or change configuration or layout to ensure consistent performance within your facility.

Since eventually you will be required to include the EPC numbers when you send your ASN (advance ship notice) to Wal-Mart, you need to ensure you are achieving 100% readability. Recent pilots have uncovered instances of specific shrink-wrap materials performing better than others, as well as mobile phone signals causing misreads.

Some of the other variables in getting good tag reads are:

- Product density and moisture content;
- Tag and antenna configuration;
- Tag and antenna placement and orientation;
- Conveyor or forklift travel speeds;
- Environmental conditions;
- Tag abuse such as pressure, cuts and scrapes;
- And potentially, tag/label substrate materials.

### **Where is the best place to find RFID technology companies and information?**

You can look at several Web sites -- [www.epcglobalinc.org](http://www.epcglobalinc.org), [www.RFIDJournal.com](http://www.RFIDJournal.com), [www.usingRFID.com](http://www.usingRFID.com) and [www.RFIDUpdate.com](http://www.RFIDUpdate.com) are the ones to which I often refer. And, of course, do not forget [Tompkins Associates](http://Tompkins Associates) and [IndustryWeek.com](http://IndustryWeek.com).

### **Does any information or template exist for establishing an ROI model for RFID?**

In my experience there are several methods used to establish return on investment (ROI) for any capital investment. Typically, most companies' projects will not be approved without a detailed business case for establishing ROI. Different companies have various factors that will determine if ROI can be achieved for RFID. Cost of capital, payback threshold, and potential cost savings all have an impact on whether an investment can pay for itself. The typical approach is to develop quarterly cash flows, meaning the capital and operating expenses required to deploy the project and the positive cash flows for savings or increased revenue achieved as the project is completed, along with the impact that is actually achieved. For each quarter, you then subtract the costs from the savings to obtain the quarterly "net" cash flow. In most companies you typically want to show the same model with "soft" benefits such as increased sales included, compared with a model that includes both "soft" and "hard" savings like headcount reduction or elimination of customer charge backs.

Once you have the quarterly cash flows forecasted over the planning horizon (3-5 years), you then can calculate the NPV (Net Present Value) and the IRR (Internal Rate of Return) for the investment. The NPV formula requires you to know your internal cost of capital to determine the value of all the quarterly cash flows in today's dollars. In other words, "How much money would I have to invest today to see the same return each quarter that I would achieve spending the money on the RFID project?"

In an upcoming column, I will tackle the topic of developing a ROI model in detail to show how to determine if RFID will pay off for you. Please keep reading and keep those questions coming.

**\*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.**