



Industry Week's RFID Strategy

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The 3 R's: RFID, ROI, Reality Check

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How do you justify the cost of implementing an RFID project? I hear this question nearly every week; therefore, our topic for this month is the return on investment (ROI) for RFID systems.

How Much Does It *Really* Cost?

The first step in building an ROI model is to identify all of the cost elements associated with the RFID system. These include the obvious costs of tags, readers, other hardware, and software. Other elements to consider are costs associated with process changes, labor to apply the tags, staff training, and data handling/analysis.

And due to the less-than-100% read-rate of current tags, there is the cost of re-working cartons that have a bad tag attached. My experience shows that the typical cost of a 4 x 6 "smart tag" would be approximately 50 cents per carton (depending on volume), but the full incremental cost per carton would be between 65 and 70 cents (with equipment costs amortized over three years).

Why Would I *Add* Cost To Each Carton Shipped From My Facility?

The traditional task of a distribution manager or industrial engineer is to take costs *out* of the supply chain. Currently, RFID technology *adds* cost to cartonization within the warehouse or manufacturing facility. Why, then, are so many companies embracing RFID technology? There are three principal reasons behind adoption of RFID technology:

1. The need to comply with a mandate (Wal-Mart, Department of Defense (DoD), etc.). Despite the additional per-carton cost, RFID implementation is necessary to keep selling product to a particular account.
2. Competition between third-party logistics providers (3PLs). A 3PL that is able to provide RFID services for their clients has a competitive advantage over their non-RFID peers.
3. The potential for RFID to provide unique data to reduce out-of-stock conditions, inventory shrinkage, and product diversion; and therefore, ultimately to reduce the cost of moving product through the supply chain.

As matters currently stand, the industry is dominated by activities in response to mandates. The growth in 3PLs capable of RFID value-added services is also tied to the various mandates.

Beyond 'Slap and Ship'

The potential of using RFID data to track product and eliminate out-of-stock conditions is, of course, what drives the Wal-Mart and other retail mandates. We are, however, seeing increasing numbers of manufacturing and distribution companies using creative thought in how to extract value out of RFID data. These companies are moving beyond a simple "slap-n-ship" approach and are approaching RFID technology as an enabler that supports process metric improvements throughout the manufacturing and distribution cycle.

I have recently had several guests at our [Emerging Technology Center](#) who represent Asian or Central/South American companies with a distribution presence within the United States. These particular companies rely on manual, paper-based methods of handling their products. Interestingly enough, because they are just beginning to plan for automated material handling, they have an advantage in working RFID into cost-justified new systems. They simply don't have an existing systems infrastructure that duplicates the process-metric potential of RFID technology. Because they are working with "clean sheet" designs, they can leap forward into RFID capability from a low-tech baseline.

Implications For RFID Project Planning

Mandates are fairly straightforward: You either comply or you don't. Even for mandate-driven RFID projects, however, it would be useful to explore ways of creating a return on investment. To calculate a meaningful ROI for RFID implementation projects, then, relies on several conditions:

- The product must be valuable enough to justify the added per-carton costs.
- There must be an existing problem that can be solved by greater visibility into product movement.
- The RFID technology can't simply duplicate what is currently done within the company with barcodes or other data-collection methods.

If you can't come up with answers for each of these conditions, you may not have much of an ROI to enjoy.

I remain bullish on the potential for RFID technology. However, there is no denying that costs need to come down before RFID moves significantly beyond the world of mandate compliance.

Paul Faber is a Principal with Raleigh, N.C.-based Tompkins Associates, a supply-chain-solutions consulting firm. As the chief manager of RFID equipment implementation at [Tompkins Emerging Technology Center](#), he possesses extensive experience in material handling solutions, systems integration, and installation. Paul has managed field integration and operations activities at material handling sites a round the world.