

## Movement at a Glacial Pace

Over 20 years ago, we saw our first RFID (Radio Frequency Identification) tag at a trade show. We were instantly smitten and convinced that in the near future RFID tags would supplant bar codes as the principal means by which organizations managed their assets. Well, we are still waiting. That RFID tags still trail bar codes in virtually all large scale tracking applications speaks volumes about how and why organizations adapt new technology.



To understand why RFID has been slow to adopt, it is useful to examine how bar codes got their start. Turn back the clock to the early 1970's in grocery stores, a notoriously low margin business. To better control inventories and streamline operations, stores were looking for a means to track what was sold. (A cash register would only record that a sale of \$.59 was made, not what it was). Bar codes and suitable readers had been developed in the mid-1960's and could demonstrate their reliability but what was missing was a standardized means to label products that could be used industry wide.

A trade group formed the Uniform Code Council which developed and released the Universal Product Code or UPC. The first label using the UPC code was read in June of 1974 and within a decade, it was difficult to buy any grocery item that did not contain a UPC code, most of which were read at check-out. What happened was simple: *a reasonably priced technology based on universal standards was introduced that provided extremely valuable data that could be captured in no other way.*

Comparatively RFID has had several missteps. Until relatively recently, there were no standards for coding the electronic content of the labels so a single supplier typically provided the tags, readers, software and support, all of which were proprietary. Many large buyers are reticent to put all of their investment in one place especially given that many RFID suppliers are small to mid-sized companies. A key advantage of RFID is that tags can be easily read from a distance without being seen.

The corollary, of course, is that without seeing the tags, one is never certain if it was read, allowing items to be easily overlooked. In fact, RFID tags cannot be read through metal (or liquids) so missing items is more common than one might expect. Also, RFID is more technically

complex than bar coding. One has many choices in label formats and styles, radio frequencies, read range and so on. Considerable skill is required to match the application requirements to the technology used.

But the most difficult obstacle faced is cost. The above explains why adoption has been slow but the direct consequence is that the demand for labels has not been sufficient to achieve the economies of scale needed to drive the cost even close to that of bar codes. For organizations with thousands of assets, a label cost of \$2.00 to \$3.00 (compared to less than \$.20 for bar codes) can prove insurmountable. So compared to bar coding, *RFID is relatively expensive, demands considerable technical expertise and, in many cases, provides little improvement over bar coding.*

Nonetheless, RFID has delivered considerable value in many niches. Toll collection, pet ownership, enhancements to access control, real time tracking of high value, highly mobile equipment and significant improvements in supply chain management are all unqualified successes. Even in asset management, RFID is the preferred choice for some classes of assets.



So for now, conventional wisdom is to use RFID where it makes sense but use other coding technologies where it does not. A quality asset management tool will easily support both technologies and the vendor should supply the needed expertise.

While we wait for RFID to become common place or not, we have our feet firmly planted behind both technologies so that we can help our clients make the right choice based on their circumstances. We have been patient for 20 years and are still counting.



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