
Avoiding Five Common Mistakes in RFID Implementations

The three most important attributes of system implementations are behavior, behavior and behavior. We explain why.

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The three most important attributes of real estate are location, location and location. Similarly, the three most important attributes of system implementations are behavior, behavior and behavior. Ultimately, the behavior of any system under real conditions must satisfy business needs to deliver value. This positive outcome depends upon the behavior of several important groups: IT, operations, users, and suppliers. Without the right behavior from each, systems implementation efforts rarely turn out well.

This article draws on lessons learned over many types of system implementations, with some extra wrinkles added for the relatively new and fast-moving RFID technology. It is intended to help you achieve RFID success by avoiding the most common and serious mistakes in both planning and implementing RFID solutions.

It best to look at projects in five major categories, summarized in the table below with the most important mistake in each category. We'll explore each category in more detail in this article.

Project Category: Most Common Major Mistake

Strategy: Missing the top level business objective, scope, and justification

Business Processes: Achieving only a surface understanding of business process needs

People: Getting the wrong people or the wrong groups represented

Technology/Facilities: Assuming the same technology works in all environments

Program Management: Not structuring work-plan for appropriate risk management

Strategy

The most important question is "Why are we doing this?" An RFID implementation is usually undertaken with at least one of the following major objectives in mind: satisfy demands of a critical customer, lead the transformation of your own supply chain for more effective fulfillment, reduce supply chain costs, or improve inventory control.

The key project objective is to control supply chain scope. How far upstream and downstream in the supply chain will the project need to reach? If the objective is to satisfy the demands of your key customer, and you choose not to propagate RFID upstream, many of your choices are already made by your customer to suit their needs—the project can be straightforward and lower scale. If your objective is to improve internal inventory control, you have much greater latitude in choosing technologies along with a fairly limited scope. In orchestrating change up and down the supply chain, you take on the most complexity with the greatest number of constraints. Supply chain scope will also dramatically influence what information is written to RFID tags, as it determines who will have access to the information.

How your project should be justified is critically shaped by objective and scope. If the objective is not clear, the justification cannot be matched to the objective. Justification can be very straightforward when the objective is to satisfy a key customer. ROI must be established more definitively when the project is expected to reduce costs. The complexity of justification goes up exponentially as supply chain layers are added to scope, so plan your resources accordingly.

Business Processes

Implementing RFID is meant to make business processes work better: more effective, faster, and cheaper. If it does not, no value is added. How will the process look once RFID is implemented? It is often effective to change the structure of work as well as who does the work, but these changes need to be made visible and explicit. Should you tag pieces, cartons, or pallets? This decision has major impacts on process simplicity and workloads (both for people and system).

Deep understanding must go beyond the obvious flow and into the nooks and crannies of the work. Rework and returns are good examples. Nearly every business has them, and one must consider the effect on RFID processing. It is also good practice to anticipate various kinds of failure modes and how they would be handled. We all think of tags falling off, but this is the tip of the iceberg. What kind of visual backups (human and machine readable) are necessary for moving forward in the face of larger scale failures?

Seemingly mundane process details can increase in importance when processes are automated. FIFO discipline is a good example. Suppose you are tracking inventory with RFID at the pallet level. Imagine that your people are pulling product from multiple pallets at once instead of FIFO. Then your RFID based inventory will overstate your quantity on hand, leading to stock-outs or shortages. When the process was manual, your people finessed that. Now the discipline must be put in place more completely.

People

There are multiple constituent groups that must be properly represented for RFID projects to work. These often include: IT, operations, engineering, finance, technology suppliers and integrators, as well as supply chain partners both upstream and downstream. Making process changes without operating people involved is like pushing a rope uphill. For example, who will speak knowledgeably and effectively for the forklift drivers about process changes and newly important discipline?

If you want to move fast, then you need to run the implementation like a quick time-to-market project. The team must have explicit and strong leadership, meet frequently, and be equipped to make decisions as circumstances change. Look for team members who have strong operating knowledge that transcends departmental boundaries.

Technology/Facilities

RFID performance is dependent on actual work environments. Many sources of RF interference, such as machinery and motors, will affect detection outcomes. Distances between aisles and how a product is stacked may also affect performance. Solvents can affect the tags. Handling will affect how frequently tags fall off. There are enough variables that it is never safe to assume that the technology will work for you. You must try it.

You must look beyond physical tags. RFID data needs to be effectively integrated in the company's business flow to be useful. This usually boils down to integration with ERP or Supply Chain systems. While I/T departments often have more experience here, it is still easy to underestimate the time and money involved. A more subtle cost driver can be ongoing maintenance for integrations as underlying software evolves.

Program Planning and Management

With prominent environmental risk, it is especially important to structure implementation plans to manage risk. Key techniques for managing risk: conducting carefully scoped pilots, carrying out well-designed and documented "beta" tests with rollback capability, and structuring rollouts in bite-size chunks.

A client in the building materials industry recently shared with me a plan to implement RFID for all of their plants at once, with no pilots. To make matters worse, the RFID supplier had even suggested possibly tracking at the piece, rather than pallet, level. These notions were quickly put to rest, with a better plan soon emerging.

Risk management goes beyond staging and demonstration of technical performance. Fundamentals of program management apply here as they do everywhere. Program management must cover the full spectrum of activities, not just technical. This includes, for example, preparing for and managing change (and resistance!), selection of favorable implementation timing to coincide with seasonal business needs, accomplishing the process transition when the green light shines, and maintaining management sponsorship and commitment.

RFID can be a contributor to business success when done right, from strategy through program management.

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