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Early adopters of Radio Frequency Identification (RFID) are finding that their efforts must meet time-honoured business principles of return on investment (ROI) . Bob Bridger, senior consulting manager at Seeburger Asia Pacific looks at the basic issues to consider before embarking on the RFID pilot.

Business Rules, ?



OK

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Business is a hard-nosed concern. Many businesses have learned painful lessons from the dotcom boom-and-bust era when the hype led to the belief that the rules of business engagement had changed. They have not. While RFID is a new development in the business world, there is nothing particularly new or radical about the tasks needed to apply and implement the technology.

There are plenty of reasons to get excited about RFID. It should not be forgotten that unlike the barcode with which it is often compared, RFID tags can be written to embed information. This single feature could fundamentally change the nature of innumerable processes and transactions from one of passive to one of being real-time and active. There is enough evidence to suggest that significant business benefits are there for the taking.

But as the early adopters now know, this is harder than it appears – and this is one reason why many commentators and analysts are advocating pilot projects as the way forward.

Now let's re-visit some of the basic rules when engaging in RFID.

1

The First Rule: Why RFID?

It is easy to overlook this most obvious question, or to simply answer it intuitively: "Because I believe this will improve my company". But belief is not enough, the failure to answer the question fully may easily lead to poorly conceived projects, budget overruns, and even damage to the company's profitability or reputation through "unforeseen" implementation issues. The business rigour that is commonly applied to later aspects of an investment, such as cost justifications or capital requisitions, needs to be equally applied to this first simple question.

To be fair, in some cases the answer is simple and obvious. If you are a supplier to a large and dominant player in your industry then the answer could easily be simply: "Because my largest customer has told me to".

But for many other businesses the answer is less clear, and the identification of future benefits will need careful thought and analysis. The biggest benefits could come not from the adoption of RFID in your own company but from its use in the value chain – and in those cases you might be dependent on the take-up of RFID by other organizations.

The table in figure 1 shows some of the reasons (but by no means all) why you might believe that RFID will improve your company

Understanding the answer to the question "Why?" will provide the rationale for a pilot project, and will help to make clear how to follow the next two rules of business: Setting the objectives, and measuring progress against them.

Figure 1: **Why RFID might benefit your company**

- **Improve inventory accuracy**
- **Improve stock turns**
- **Improve visibility in the supply chain**
- **Provide more detailed quality data**
- **Allow accurate monitoring of storage conditions**
- **Reduce losses of perishable products**
- **Reduce stock-outs**
- **Increase goods handling efficiency**
- **Increase carton/shipping unit security**
- **Protect against counterfeiting**
- **Enhance product benefits to user or consumer**
- **Join an industry initiative**
- **Increase or retain business in industry sectors**
- **Comply with a customer or industry mandate**
- **Be seen as a leader in technology adoption**

2

Rule Number Two: Setting Project Objectives

Experienced managers will agree that the biggest enemy of a successful project is "scope creep".

Because the possibilities afforded by RFID have yet to be fully explored either by technologists or by business people, it is highly likely that during the pilot project ideas and opportunities will come to light that offer even greater promise than the original rationale. Situations like these are to be welcomed since every company is striving to be innovative in crowded and competitive markets, and one of the benefits of embarking on a pilot is the education of the business as to the potential of this new technology.

But they should be treated with care.

Unless the new idea is so revolutionary that it justifies abandoning the current pilot and focusing on a new goal (in which case go back and apply the first rule), then simply document the possibilities and get on with the original project. The new ideas can be examined later, and might well be affected by the outcome of the pilot anyway.

Avoiding scope creep therefore implies that a couple of fundamental project management principles need to be employed. First, that the project leader and team are given clear objectives, and secondly, that the project sponsor is senior enough in the organization to make those fundamental decisions.

The overall objective of the pilot is to determine the feasibility of using RFID in the business – not just the practical and technological aspects but also the impact of changing business processes. This

means that the project team will almost certainly need to be cross-disciplinary because changing one business process to accommodate RFID might well lead to the need to change others.

The scope of the project needs to cover not just the pilot itself, but should consider the impact outside the company. These might be with trading partners, customers, users, or in some industries regulatory bodies or even privacy or civil liberty issues. In such cases, you need to rope in a corporate lawyer on your project team.

Finally, in a well-run business any project is governed by budgeted funds and resources – both people and time

– and by proper reporting processes. A RFID pilot should be no exception to the rule.

The table in figure 2 gives an overview of the objectives that should guide a pilot project, and once again it is not exhaustive.

Rule Number Three: Define “Success”

An often-quoted maxim in management lore is: “If you can’t measure it, you can’t manage it’. And rather like a golfer on the tee who doesn’t know how

Figure 2: RFID Pilot Project Objectives

IDENTIFY	DETERMINE	CONSIDER
Products/packaging/shipping units to be tagged	<ul style="list-style-type: none"> - Tag & reader types - Tag placement and application - Tag orientation to readers 	<ul style="list-style-type: none"> - Environments and handling procedures - Training staff
Business processes for RFID	<ul style="list-style-type: none"> - Changes needed in order to adopt RFID - Information to be collected from/ written to tags 	<ul style="list-style-type: none"> - Effects on existing systems, e.g order processing - Purpose and use of tag information - Effects on dependent processes - Information processing/transmission capacity
Expected benefits from RFID in each process	<p>Type of benefit:</p> <ul style="list-style-type: none"> - Hard (money,time) - Soft (quality, speed) - Quantify benefits - Time to benefit 	<ul style="list-style-type: none"> - Existing business Key Performance Indicators (KPI) - Benefits measurement - Resources freed or increase in capacity
Drivers for RFID	Source (e.g. customer or regulatory, competitive)	Impact of non-adoption or non-compliance
Parties affected/involved	Customers, suppliers, shippers, users, consumers	<ul style="list-style-type: none"> - Effect of tags on each segment - Requirements or impositions on each party - Training & acceptance issues - Privacy issues - Liability issues
Departments affected/involved	Key people	Effects of pilot on each department
Equipment & service suppliers	<ul style="list-style-type: none"> - Technical specifications - Costs/discounts - Support capabilities 	<ul style="list-style-type: none"> -Ergonomics - User acceptance - Environmental requirements - Supplier viability
Location(s) for pilot	Environment suitability	<ul style="list-style-type: none"> - Placement of readers - Changes to physical space - Possibility of tag/reader damage - Changes to handling processes
Business opportunities that may be exploited	<ul style="list-style-type: none"> - New markets - Different products to existing customers - Collaboration with other companies 	<ul style="list-style-type: none"> - Marketing/advertising possibilities - Company image/reputation - Legal agreements that might impede opportunities - Confidentiality/trade secrets
Industry initiatives/trade bodies/government agencies	<ul style="list-style-type: none"> - Roles - Ability to provide education or assistance - Commercial benefits of membership 	<ul style="list-style-type: none"> - Competitors participation/collaboration - Confidentiality issues - Opportunities to exploit
Business justification	<ul style="list-style-type: none"> - Costs - Benefits - Timescales - Budgets & Capital requisitions 	<ul style="list-style-type: none"> - Ability of business to absorb changes - Political implications

far it is to a pin. he can't see or even how many shots would make par, without suitable metrics it will be impossible to know just what "success" actually is.

What this means is that if you are looking for benefits in a certain business area but do not have the metrics in place to monitor the right numbers, then you will never know if you are being successful. For example, suppose you think that using RFID will reduce stock-outs in a store, but you don't have any measure of how many stock-outs actually occur. How can you tell if RFID makes a difference? This may appear counter-intuitive – stock-outs are reported as part of the re-ordering process, aren't they? *Yes, but not by the consumer.*

When a consumer can't find the product he or she is looking for on your shelves then they will make one of three choices: buy a similar product, go to another store, or not buy anything. Most people will not tell an assistant that the product they want isn't on the shelf, and even if they do there is probably no mechanism for the assistant to report the fact. Part of the pilot project may therefore be to introduce a process (for the duration of the pilot) where assistants regularly check shelves for missing products and report their findings.

This goes back to the second rule of setting objectives. For an objective to be meaningful, there must be a means to measure progress against it. For RFID, many projects (and articles about projects) seem to focus on metrics such as tag read rates and 'dead' tag counts, and while these are important to establish the reliability of the technology in your environment, it is the objective of the pilot to determine the *business* feasibility of RFID – and the results of the project will be used to build the *business* case for its adoption.

Rule Number Four: Beware of the Law of Unintended Consequences

However carefully planned a project might be there is always the possibility of unintended consequences. In the stock-out example one such consequence might be a reduction in the efficiency of store assistants because they are now required to monitor shelves for missing product. Or worse, that those assistants might become dissatisfied with the new process being added to their already busy shifts and

may choose to leave the company to work in a less 'pressured' store elsewhere.

One such unintended consequence has already emerged – the need to "kill" RFID tags. This subject has recently been high on the agenda of EPCGlobal, the organization working towards an open standard for RFID tags. The provision of a means to permanently deactivate tags arose from privacy concerns around the tagging of consumer items such as CDs and DVDs, and retailers may have to implement special "stations" where purchasers can, if they choose, have their tags "killed" before leaving the store.

At the very least, some companies implementing RFID are now having to develop "privacy policies" – probably not something that appeared on the list under the second rule when they started.

There are two ways to avoid negative unintended consequences: one is to be thoroughly rigorous when working with the second rule. Considering the impact of using RFID beyond the pilot project requires the project team to know and understand where and how the products being tagged are transported and used, and makes a cross-disciplinary approach essential. The other is to make sure you communicate to all the people involved or affected and explain the what, why and how of the project. If people feel they have been informed, then they're more likely to be helpful and interested in a positive result.

The Final Rule: Stick to the Rules!

Assuming that your pilot project has been successful, or having identified issues and solutions that would make a larger scale implementation successful, you can now go ahead and roll out an implementation, can't you? No – not yet.

Go back to the first rule and re-examine the answer to the first question. Is the answer still valid? Did the pilot project change some premise, or parameters, or assumptions? If so, change the answer, and then work through the rules again at each stage. A rollout is just another business project – planned, resourced, justified, measured; and expected to deliver the benefits it is targeted to deliver.

In business, as in life, rules are rules. 