

RFID IN UK INDUSTRY - AN EXECUTIVE SUMMARY

There is much talk of RFID (Radio Frequency Identification) tagging technology in industry today. Some believe this technology has huge potential to revolutionise the way supply chains are managed in the future. In effect, RFID is being billed as 'the next big thing' in terms of IT for both the retail and manufacturing industries.

However, industry has matured considerably in the way it regards new technology, adopting a far more pragmatic and realistic viewpoint than was the case a few years ago. Rather than being carried away by hype, it will be critical for people to focus on the practical realities.

The first stage in this process is to obtain a genuine understanding of what is actually happening today. For this reason, Microsoft commissioned Benchmark Research Ltd to find out what potential customers in large UK manufacturing and retail organisations really think of RFID. From this starting point, it is possible to understand more clearly where the technology can add value and what needs to be done to realise this potential.

Attitudes Have Changed

Responsible decision makers in large manufacturing and retail businesses do not invest in new technology simply because it is hyped as 'the next big thing'. If industry has learned one thing about IT, it is that IT is a business tool like any other. Any investment must be planned and justified – in exactly the same way as investment in a new factory or refitting a retail outlet.

"As with anything like this there's got to be a cost benefit analysis, it's going to cost us X to implement but we get this amount of benefit"
Operations Director, Retail

Simply saying this is 'the next big thing' will not convince anyone. The case for RFID needs to be made in practical business terms.

Where is industry now

First, we need a realistic view of the present market position. Increased media coverage of RFID does not mean we can assume that senior business managers are necessarily familiar with the technology and what it can do.

Indeed, 28% of senior decision makers in large UK manufacturing companies and 36% of retailers claim to have never heard of RFID. A further 25% of manufacturers and 24% of retailers have heard of the term but know nothing about the technology beyond the acronym. Indeed, only 25% of manufacturers and 14% of retailers can be described as being reasonably well educated as to what the technology is and what it can do.

Three-quarters of the people we spoke to have said that, to their knowledge, none of the companies they deal with (whether suppliers, customers, partners or competitors) were looking at RFID. A key finding is that only 20% of retailers and 19% of manufacturers were reasonably familiar with specific examples/case studies that demonstrate how RFID might be practically applied in a business like their own. This demonstrates that UK industry is currently in the very earliest phases of RFID adoption.

Against this background it is not surprising that almost 90% of all large manufacturing and retail companies have yet to formally investigate the potential of RFID, and only a small minority are actively engaged in projects.

The immediate priority for the IT industry is therefore one of education. Even

benchmark-research

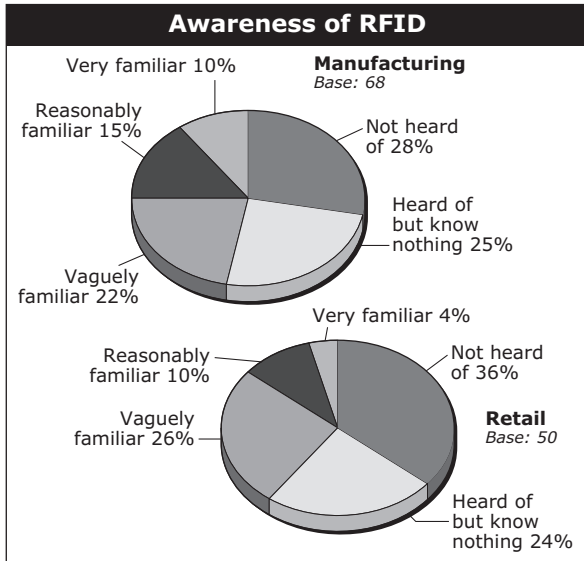
RFID will have a dramatic impact on the operation of global supply chains over the next 10 years. And while widespread adoption is 5 years away, world-class supply chain companies are starting to pilot RFID now.

RFID's value lies in enabling companies to reach a level of process discipline that is beyond the reach of human interaction or alternative technologies. Process discipline provides accuracy and predictability, which in turn reduces cost, optimises the use of assets, and enables a company to deliver consistent, and sometimes unique, service levels to its customers.

RFID has promise and if you prepare your enterprise for incremental deployments, you will be ahead of the curve, but within budget. Waiting until standards arrive will mean that a steep learning curve will still be ahead for your organisation. And there is still no guarantee that the standards will evolve that quickly. Organisations that wait too long may watch the competition, as well as potential savings, pass them by. By beginning now to assess the requirements, you may find ways to add the capability incrementally without too much disruption to your current environment or much additional cost."

Nigel Montgomery,
Director European
Research, AMR Research
Europe.

Microsoft®

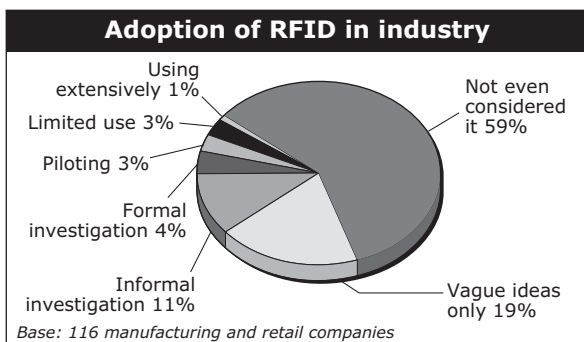


the largest corporations have very limited knowledge of this technology. Quite a number may have a basic understanding of the technology and some of its potential applications, but they certainly lack the detailed insight to prompt a major project.

We should also remember that, even though RFID is seen by many as the logical progression from bar coding, many companies do not even use bar coding. In manufacturing, 38% do not use bar coding at all and 34% are using it to a limited extent. Thus, only 28% are using it reasonably extensively. Even in the retail industry, bar coding is not as widely used to track goods in the supply chain as you might expect. More than half (54%) of retail companies do not use bar codes to track the movement of goods in their supply chains at all. A further 14% use bar codes in a limited way, which leaves 32% that are using bar coding reasonably extensively. Indeed, retail is quite a divided sector – 18% claim to use bar coding comprehensively (for all products across their supply chain), in contrast to the 54% that aren't using the technology at all. Although a higher proportion of manufacturers are likely to use bar coding, very few (only 4%) are using it "comprehensively".

Bar coding technology has been around for some time, so the fact that it is not yet a universally applied technology gives some indication of the realistic rate at which RFID could be adopted. If a business finds itself unable to put together a case for bar coding, how likely is it that they would be able to put together a case for RFID?

In the short to medium term, the initial drive to adopt RFID is likely to come from those using bar code technology in a comprehensive manner – the sophisticated end of the retail industry.



Pain in the Supply Chain

Businesses know there are real challenges in terms of managing their supply chains. Many of these are the type of issues that RFID technology promises to address.

When asked about the problems and challenges faced in their supply chain, both manufacturers (38%) and retailers (54%) were most likely to single out the supplier side of their operations. However, 32% of manufacturers (compared with just 6% of retailers) felt that all elements were equally challenging. Retailers are more likely to have specific complaints about keeping track of the paperwork (36% vs 18% of manufacturers). Retailers also see a particular problem associated with controlling stock levels within the retail stores themselves (34%).

When probed further, it is apparent that businesses are well aware that a number of areas exist where they would like to be able to make improvements.

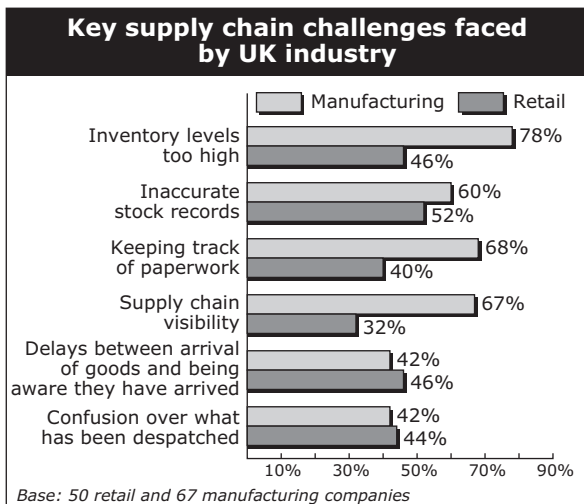
Manufacturing is significantly more concerned than retail about high inventory levels, keeping track of all the paperwork and overall supply chain visibility. That is not to say that retail companies are not worried about these issues at all. Both industries share a significant number of concerns in relation to such matters as inaccurate stock records.

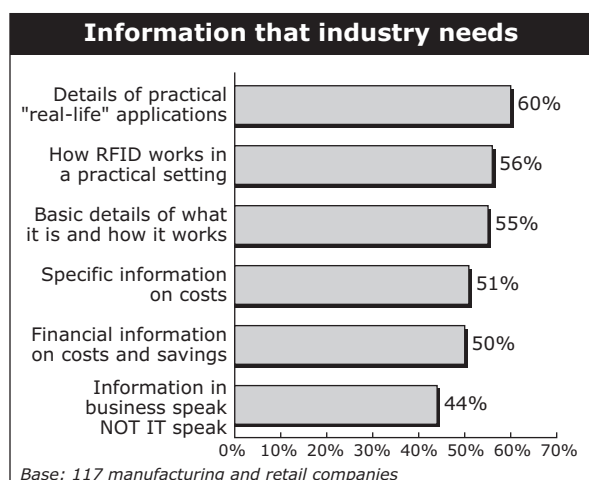
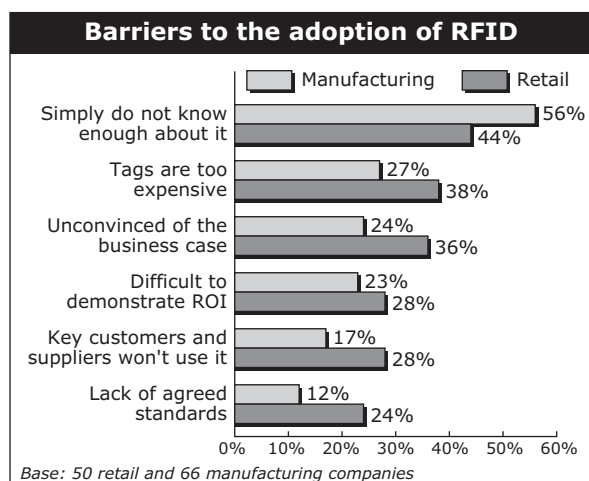
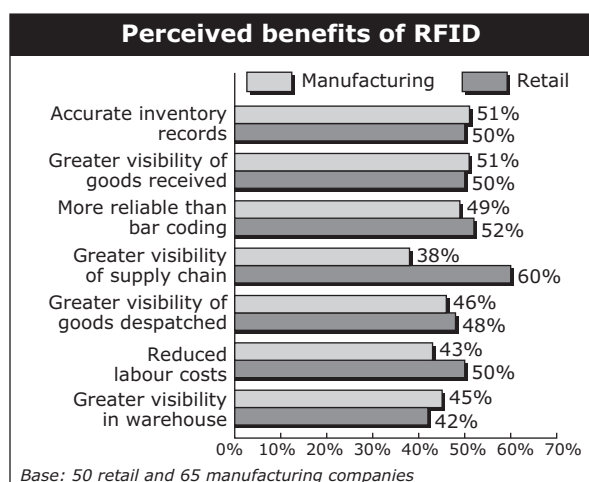
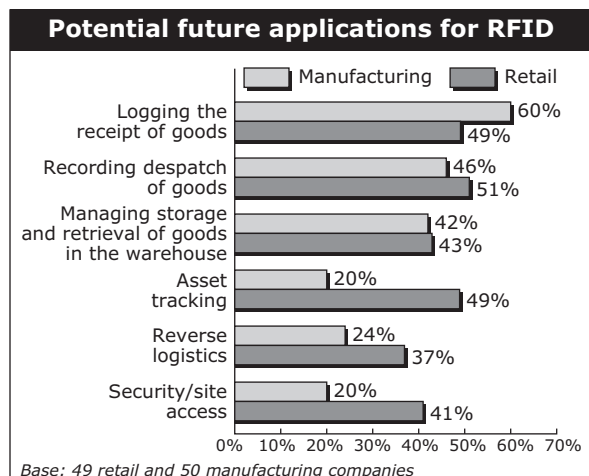
Many firms can work around these challenges, but only by upping man hours. Stock records can be kept relatively accurately with labour-intensive stock checks. Supply chain visibility may well be maintainable but, again, only with the investment of man hours.

Undertaking stock checks and booking in goods received are plainly seen as labour-intensive activities in both industries. Manufacturing perceives maintaining supply chain visibility as generally more labour intensive than retail. By contrast, retail is much more likely to identify picking orders in warehouses as labour intensive.

RFID offers the potential to resolve many of these issues and deliver the improvements businesses say they desire.

The challenge for the IT industry and RFID suppliers is to make an





effective and clear case as to how the technology can provide a practical and cost-effective solution.

Potential Applications and Benefits

The number of manufacturers using or piloting RFID is very limited. We interviewed just one company that is using RFID for asset tracking and two that use it for building security/employee ID applications. In the retail sector, we interviewed one company engaged in a pilot study and no existing applications at all.

While many people had a very limited understanding of the technology prior to our discussion, several were nevertheless able to comment on the type of applications they could see for RFID.

Most can see its potential for supply chain management. Logging the receipt of goods, recording the despatch of goods, and managing storage and retrieval of goods in the warehouse appear equally attractive applications for both retail and manufacturing.

Manufacturers tend to focus more on the direct supply chain related applications. The sector envisages applications for managing storage and retrieval of materials and components (48%) and for WIP tracking (46%). And 26% see the potential for affixing tags to kanban cards (this was suggested, unprompted, by manufacturers during preliminary face-to-face discussions).

Retailers see more potential than manufacturing for asset tracking, reverse logistics and site security. The retail industry also sees the potential for using tags to monitor in-store inventory (39%).

Improvements in supply chain visibility are expected and the potential advantage over bar coding is widely accepted. A significant number also expect it to deliver reduced labour costs. However, fewer in manufacturing believe that it would enable them to make savings in terms of reducing overall stock levels (25%). The retail respondents are more confident (42%) of seeing a benefit in terms of lower stock levels, and they are more likely to acknowledge the wider benefits.

Barriers & Challenges

The first and most obvious barrier to the introduction of RFID lies in a lack of awareness and education. Half the potential market of large businesses consists of senior decision makers who currently have no real idea what RFID is or what it can do. There can be little incentive to look seriously at RFID projects until people are much better educated about the technology and its potential application.

In addition, there is a widely held view that the tags are too expensive at present (especially in the retail sector). During face-to-face discussions with potential users, it was clear that economic viability would depend on the value of the products/items involved (although some thought that prices would have to drop to as low as 10p or even 1p per tag). Higher priced tags can be more easily justified when affixed to higher value items. Naturally, given the current low level of market knowledge, people simply don't have a clear idea of how much tags cost and what kind of tags are available.

With information on costs and benefits hard to come by, it is not surprising that many people think it is difficult to demonstrate ROI. There is also concern that key suppliers and customers may not be prepared to embrace such technology. Indeed, during preliminary discussions, some pointed out that they had experienced considerable resistance from suppliers to adopt bar coding, let alone RFID.

A final and significant challenge relates to standards. If RFID is to be effectively employed across a supply chain, there will need to be agreed common standards to enable all customers and suppliers to use the technology. CPG manufacturers who supply the supermarkets are aware of trials and proposed trials in organisations such as Wal-Mart and Tesco. However, they are wary of proceeding until those

organisations at the top of the supply chain have formalised their RFID strategies.

"Co-operation inside any industry is vital to make a thing work...If all the supermarkets won't come up with the same standard then you've got a major problem and it would never work. That's got to be uniform, so if Tesco comes up with one standard, Wal-Mart comes up with another one, we'll have complete chaos. Hopefully they won't, but they haven't actually announced what their standards are yet and we're certainly not going to do anything until they do."

Supply Chain Development Manager, Manufacturing

The Future

In principle, the market is open to RFID. There are several factors that point strongly to the underlying demand:

- Industry recognises that a number of challenges exist within the management of supply chains. Inventory levels are too high, stock records suffer from inaccuracies and supply chain visibility is far from perfect.
- Currently a number of labour-intensive processes are required to manage certain supply chain activities.
- When the concept of RFID is explained to people, they generally accept that the technology has the potential to resolve many of these problems and improve their business processes.

However, it is clear that industry's decision makers are currently short on detail – half know little or nothing about the technology beyond the name. Clearly, considerable educational work needs to be undertaken as an urgent priority.

Even those who are familiar with the basics of RFID and what it can do still feel they lack the detailed information on how it can be applied in practice, what it costs and what savings might realistically be expected.

There is obvious demand to see details of practical, real-life applications for RFID – this backs up many comments during preliminary face-to-face discussions. People want more detail of how RFID would work in a practical setting.

A secondary priority is then to understand, in some detail, the costs involved and the precise savings that RFID can deliver. There is also a clear imperative for IT vendors to cut the IT jargon and get down to the specifics of making a practical business case for a serious investment.

"If I am handling 18 million items per year and tags cost me 10p per item, I can very quickly see the minimum levels of total cost. So what's the benefit? How exactly I am going to save millions? The economics ultimately are key. That is the only reason we'd ever sanction any project. IT vendors waste too much time on technology speak. What do I care about the technology? I am only interested in the end result in business and financial terms. It is that simple.

I need these people to show me how my business is going to be better off as a result of their technology. So they need to talk about money and business issues from the word go."

Supply Chain Director, Retail

So RFID shows all the signs of having the potential for widespread application. First, however, industry needs far more detailed, practical guidance to be in a position to formally evaluate the business case for an investment.



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Microsoft's RFID Strategy

Microsoft's RFID strategy is based on collaboration with world-class industry experts, application software vendors, systems integrators, equipment manufacturers and retailers. By providing an affordable, reliable, open-standards-based platform to support RFID devices and applications, we aim to help our customers achieve greater operational efficiency and reduce costs.

To find out how Microsoft and its partners can help your organisation to realise the benefits of RFID technology please email us at:

rfidinfo@microsoft.com

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