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Straight Talking – Plenty of life ahead for RFID and NFC

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RFID and its close cousin near field communications (NFC) have both been touted for great and sexy futuristic applications. These range from the tagging and tracking of all consumer goods to the conversion of mobile phones into all purpose 'super wallets' where simply waving the phone at the checkout would pay for your items.

The idea with RFID is quite simple. If you can apply sufficiently low-cost tags to items you can replace the line-of-sight constrained barcode with something that can be read automatically over a range of a couple of meters. This opens up applications from stock control and in-store anti-theft detection, to esoteric ones like domestic fridges that automatically add milk to the shopping list when the last carton is removed, or rubbish bins that notice something should have been recycled.

The problem with this sort of futuristic ideal is that while cost per tag is falling, the cost and complexity of large deployments of tags, readers and the changes this brings to business processes rises with scale. The benefits may be significant when this occurs but they also get harder to identify and quantify. While visible at board level, many individual cost centres will not see significant benefit, making large scale RFID projects harder to justify, so most deployments have been on a smaller scale where value is well defined and clear.

A similar picture is true with NFC, although some large deployments, such as Transport for London's Oyster card, have very worked well, as they are closed applications and have the support of an entire infrastructure. The idea of similar technology on all mobile phones has potential and could ultimately yield plenty of interesting applications but there are a lot of vested interests and agendas that would have to be aligned first.

Mass market, high tech RFID and NFC applications will have their place at some point in the future. However the use of tags and short-

range radio devices to read them can work effectively today in applications where it is necessary to prove that the right action has been taken with a specific object.

The technologies could prove quite useful for compliance applications. This might sound boring compared to waving your phone at shopkeepers but they are often of critical importance, and therefore can have huge benefits, usually in mitigating or avoiding risks - including saving lives.

Consider the needs of maintenance staff working on electrified rail lines, for example. When the power line being worked on is switched off, it has to be attached to the ground to avoid a current being induced by other nearby power lines. The heavy duty 'earthing' straps are critical to safety and preventing damage, so deployment must be well controlled, but they also have to be removed before power goes back on. Several straps will be used over the course of one maintenance session, and by a number of engineers, so it is critical to account precisely for all of them.

The difficulty is how to positively identify each strap and know who checks them out. Each one is a weighty coil of 2cm diameter cable, with heavy-duty clamps at each end. Labels or barcodes are difficult to attach and become difficult to use in the challenging outdoor environment next to the tracks.

However, a product based on radio tags read by nearby readers fits the bill by giving each earthing straps a unique identity. The engineers then use handheld devices with a snap-on NFC reader and suitable software to link each specific cable to a specific engineer.

At some point developments will be taken a stage further and GPS will be used to provide the specific location for each cable while it's in use. All of this information is logged for audit and alert purposes to ensure workers' safety and avoid damage to tracks and power lines.

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Tags can also be used to validate the location of the tag reader itself. For example security guards can have tag readers attached to the handheld mobile devices they may already be carrying as they patrol. Tags embedded around the perimeter and at vulnerable points of the areas the guards are employed to secure can be identified and read, ensuring that a guard has passed a particular point at a certain time. This provides an audit trail showing the security process has been complied with.

In each case the reading of a tag is providing a time, person, proximity and location stamp for a business process that depends on repetitive tasks. This will provide authentication to validate a process for compliance purposes but can also protect assets and perhaps lives. In constraining the solution to meet specific business needs, even the most advanced technologies can be deployed in a cost effective manner.

These applications, provided in this case by customers of one of the UK's mobile data specialists, TBS Mobility, demonstrate not only that there are valid uses for NFC and RFID but that they do not have to be expensive, huge or mass market. It's just a matter of understanding the problem and then looking at what technology might fit.

Despite the many doom-and-gloom predictions for RFID and NFC, it is really more about just getting on with what is necessary.

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Through researching perceptions, Quocirca uncovers the real hurdles to technology adoption – the personal and political aspects of an organisation's environment and the pressures of the need for demonstrable business value in any implementation. This capability to uncover and report back on the end-user perceptions in the market enables Quocirca to advise on the realities of technology adoption, not the promises.

Quocirca research is always pragmatic, business orientated and conducted in the context of the bigger picture. ITC has the ability to transform businesses and the processes that drive them, but often fails to do so. Quocirca's mission is to help organisations improve their success rate in process enablement through better levels of understanding and the adoption of the correct technologies at the correct time.

Quocirca has a pro-active primary research programme, regularly surveying users, purchasers and resellers of ITC products and services on emerging, evolving and maturing technologies. Over time, Quocirca has built a picture of long term investment trends, providing invaluable information for the whole of the ITC community.

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