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RFID: Why Soviet World War II favourite could end up as a worthy successor to the barcode

RFID, or Radio Frequency Identification, promises the dream for the consumer. Imagine a busy supermarket at Christmas time: you have a trolley bursting with Christmas goodies and all you need to do to “checkout” is push your trolley through a magic archway. Purchases in your trolley would be registered and accounted for using radio waves to read the RFID tag on each item.

To look at, the RFID tag usually resembles a small raised sticky label or printed spiral of wire, but more on that in a moment.

First, a quick potted history of the technology. Developed in 1945 by Leon Theremin, a Russian inventor who also invented one of the first electronic musical instruments, RFID started as an espionage tool for the Soviet Union. Russian spies used this early RFID device to re-transmit radio signals. This is considered the first RFID tag. It was not used as a tracking device; however, the tag ‘woke up’ when passed near a radio signal, which is the basis of this technology.

So why are we still so dependant on the barcode, when RFID technology has existed since 1945?

In other industries RFID tags have made huge inroads. Most nations now include an RFID tag on the cover of passports. This allows for the owner’s information to be quickly read when passing through international borders, and hotels are turning to these cards to replace the easily damaged magnetic swipe-key entry system.

However, what about our industry? Why are we still not using these tags at the checkout? The reasons for this are complex, but it seems that RFID tags are a complement to rather than a substitute for barcodes. The ability to print, email and send barcodes makes them very convenient to distribute and attach to products. However, the biggest barrier to entry is the cost of individual tags. This still hasn’t come down to the fractions of a penny that would be required to, say, label an individual tin of beans.

The technology in the supermarket has also been side-stepped. More and more retailers are implementing self-scan barcode solutions.

One final point on RFID. Although we are not seeing barcodes being replaced any time soon, RFID may still assist the checkout process. Many mobile phones and credit cards are starting to be equipped with an RFID device. This is known as Near Field Communication (NFC). NFC is effectively an RFID device by another name. NFC allows for payment just by holding a phone or enabled card near to a reader, thereby speeding up the usual chip & pin process. Although this technology is established in the UK, with organisations like Barclaycard supporting the standard, its uptake is only just beginning.

RFID may not replace the barcode in the near future, but it is already quietly operating in our everyday life. Maybe this goes all the way back to its espionage roots?