

CHRONICLE PHARMABIZ

RFID

A SPECIAL SUPPLEMENT

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e-Tagging is here, with great promise

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Recently US FDA has directed the pharma companies to have item level tagging of pharmaceuticals to track its pedigree and combat counterfeiting. It also recommended RFID as a most promising technology with greatest potential. Indeed, the FDA's approach has boosted the prospects of RFID and spurred developers.

Currently, a lot of trails and pilots have taken place within the retail sector to improve the management of logistics. However, many pharmaceuticals companies have also started trails to verify use of the technology. For instance, Pfizer has implemented item level RFID tagging of its brand Viagra.

In a 2004 directive, US FDA had laid out their thoughts and requirements for an all-pervasive system to identify and track all medicines from manufacturing to dispensing of the drug. The FDA suggested RFID because of its ability to read without the need for line of sight unlike the barcode and its ability to incorporate some intelligence. The US FDA directive also intended to bring down the costs of the technology to make it more manageable.

At the time when US FDA issued the directive, item level tagging was in use for proprietary systems and high value low volume asset management access control. It was believed that the technology with the support of the pharmaceuticals industry would bring down the cost of RFID antennas, a major cost in implementation of any RFID programme.



Trail outcomes

Cardinal and Purdue pharmaceuticals companies had undertaken major trails last year, which looked at RFID from manufacture, item level tagging to shipping, distribution and dispensing. Results indicated that the RFID tags could be read during production even on bottles of liquid, foil packs reliably ranging from 99 percent to cent percent and that the tags were robust enough being attached to pallets for shipping.

Though the tags had near perfect reliability in line, due to the fact that the tagged products travelled down a conveyor belt one by one and were not packed tightly in a shipping carton or mixed with other products. During the trail, it was found that when there was a mix of products, bottles, liquid, foil packs etc. there was tremendous error in reading the tags hence the contents or the totes in which the products were being distributed. Also, there was unacceptable error reading accuracy was down to only 7 per cent.

It has also been found that RFID

read packs of certain products like water, liquids, oils, metals containers and foil packs. Being a radio frequency technology, the metals reflect and shield radio waves and make the tags unreadable. Hence, there is considerable work to be done to overcome the physics of the matter.

Read rates at case or pallet level were good as only one tag needed to be read to cover all items. RFID has distinct advantages over other technologies as data collection can be automated and collected more accurately than by any other manual method.

Industry standards

All trails were carried out using proprietary systems and differing frequencies. For an RFID system to become universal, it must operate under an industry standard. Presently, there are many competing systems. The EPC Global, a subsidiary of GS 1, has been established to develop an industry wide universally acceptable RFID standard, along the lines of the barcode standard. The barcode

system in its early days also had many competing systems, until an industry wide standard was established.

The slow take up of RFID system by the companies can be attributed to differing proprietary systems and not so attractive ROI. The differing proprietary systems cause fear of adopting the wrong system and the cost to change to the new standard.

Getting RFID technology to an industry standard may actually render it useless to anti-counterfeiting purposes. An RFID standard could lend itself to some very uncompetitive practices. For instance, if an entire industry uses the same standard (radio frequency), then any company could read the RFID tags of another. It would not be too far fetched for a competitor to find out what the stock level or usage of the competing product is. All he would need to do is to stand outside the plant or warehouse or even the supermarket and get to know the exact position.

Similarly competition could find out the source of raw materials or the destination of ones shipments in the same fashion. This can be taken further to individual level of a consumer going home after shopping from the local mall. An unsociable person scans each shopper and picks the most promising shopper. The universal standard will need to address privacy and confidentiality issues. The RFID technology would need to be combined with encryption technology so that sensitive information will not be available to all.

By using RFID tags on pharma packs, one can tell its pedigree apart from its use as an anticounterfeit device. Once the RFID standard becomes universal, the security aspect will almost be nullified, as any one could enter the system (very much like the barcode system) if so inclined, making fake RFID tags and introducing them into the distribution channel. If there is total reliance on the electronic tagging fake RFID's would surely bring down the confidence in the system.

Moreover, it would be very difficult to isolate the fakes.

Implementation of RFID

Implementation of RFID is not just about slapping on a label with RFID chip in it. This will not yield the benefits of the technology. The process of implementation requires multi discipline project teams and the thrust will depend on the objectives of the company. To take full advantage of the technology, implementation should be combined with the uses of ERP systems, which can collect order and analyse the data collected. If these systems are new, they will need to integrate with the existing systems. This is where the major cost is, along with the cost of the tags as consumables. The cost of setting up wide RFID enabled system would cost million of US dollars and consumable tags have reached sub US \$ 0.10.

RFID in India

If the goal is better logistical control, then the RFID system is the most promising with the greatest potential. But even after all these years of development, one still talks about RFID as "promising and with potential". All the constraint and limitations will be overcome and RFID will in future impact our lives in many ways, some may be bad, but mostly for the good.

RFID in the Indian scenario is many years away. The developed economies of USA and Europe are still struggling with pilot trails and infrastructure difficulties. India is just absorbing the barcode, as the country's economy is not yet developed enough nor do the electronic infrastructure to adopt the RFID in the near future. Even in the developed economies it is envisaged that the universal use of case and pallet level RFID will be take about 5-10 years more. Also, the US FDA is well of the mark for its item level tagging and there is no sign of implementation as envisaged.

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