

Rfid in pharmacy ...

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RFID in Pharmaceutical Industry In 2004, US Food and Drug Administration (FDA) has called for the implementation of RFID technology to track the distribution of prescription drugs in order to protect the medical supply chain from counterfeit drugs by 2007. Initially, California State Board of Pharmacy has mandated RFID technology but later extended implementation date until 2015. In 2007, Kalorama Information predicted in a report that market for RFID solutions in pharmaceutical industry would worth around \$3. bn by 2012, but this got affected by the current global recession, extension given by California State Board of Pharmacy, and other challenges regarding implementation of RFID. A new research report of Jan 2010 revised the market for RFID products and services in the pharmaceutical industry that it will be worth \$884m (€631m) in 2015. In 2008, RFID market was worth around \$112m and predicted value of around \$884m in 2015, with a compound annual growth rate (CAGR) of 34 per cent. Of the current market, 60 per cent is believed to be generated by hardware, with the remaining 40 per cent coming from software and services.

RFID Cost As of today, a RFID tags, which is passive only (read-only) can store up to 2KB of data (96bit Serial Number), can cost up to 40 cents US. In case of an active tag (read and write) can cost between \$5 to \$10, depending upon the material and type of tag. Benefits/Potentials of RFID Counterfeiting Help in fighting against counterfeiting. The World Health Organization (WHO) estimates that about 6 percent of the world's drugs are counterfeit. Fake prescription drugs costs Pharmaceutical companies around US\$30 billion each year. Patient safety

This is also related to counterfeiting, as fake drugs may look and feel like the real thing, but they are not. A report by WHO indicated that about 93 percent of cases it tracked didn't have the correct amount of active ingredients.

Brand protection Brand protection is very important for drug manufacturers, as single product-tampering incident can wreak long-term havoc on a company's reputation. Operational efficiency Easy to identify expired or damaged products, and also they can be monitored not to enter into another supply or order. Retailers and distributor can have a better and clear understanding of inventory in warehouses.

RFID Drivers for the Pharmaceutical Industry RFID presents the potential to provide tremendous benefits to the pharmaceutical and health care industries. Some of the key benefits projected with the use of RFID include:

- Drugs could be identified easily even if they are inside a container.
- Counterfeit drugs could be identified easily.
- Assurance that the ID on the bottle has not been forged or mislabeled.
- Helps in keeping track for drug's expiry.
- Helps in fighting against products from being re-imported and resold at lower cost, which were exported to other developing countries.

Unlike bar codes, RFID do not required to be in line-of-sight to read product information.

- If implemented across the whole supply chain, product movement and location can be tracked remotely.
- More information can be stored on RFID chip and unlike bar code prints, RFID chips can survive harsh conditions.
- Provides ability to reads more products per second as compare to bar code scanning procedure, requiring less human involvement.

Increased potential for reducing clinical trial times by reducing errors and improving delivery accuracy. [pic] RFID Challenges for the Pharmaceutical

Industry Lack of standards in technology i. e. whole supply chain should be using same standard. • Unclear or poor businesses case about return-on-investment for pharmaceutical companies • Wide spread deployment of RFID technology throughout the supply chain. • Cost of implementing RFID infrastructure is very high, which is not attractive for distributors with low profit margin. Passive tag price ranges from 40 cents to \$1 USD. • A major retailer will have to invest around \$400K at each distribution channel. • Integration issue of RFID with current applications and technical infrastructure. Concerns over which RFID solution to pick which is flexible enough to accommodate multiple business processes. • In case of hundreds of read per second, concerns over data quality and synchronization, if tag has been read multiple times or no read at all, or data error while reading and etc. • Privacy and security concerns such as eavesdropping, tracking attack, fraudulent tags and readers, physical tamper attacks, denial of server (DOS) attacks, how much and what information drug manufacturer or supplier will store on tags and etc. [pic] [pic] References: http://www.tompkinsinc.com/publications/competitive_edge/articles/02-04-RFID_Pharma.asp http://www.ascet.com/documents.asp?d_ID=3435 <http://www.rfidjournal.com/article/articleview/2435/1/1/> <http://scm.ncsu.edu/public/facts/facs030123.htm> http://www.aimglobal.org/technologies/rfid/rfid_faqs.aspl <http://www.atkearney.com/index.php/Publications/busting-the-myths-of-pharma-rfid.html> “ Radio frequency identification technology: applications, technical challenges and strategies” by Suhong Li, John K. Visich, Basheer M. Khumawala, Chen Zhang.