

RFID Technology Adoption in the Pharmaceutical Industry

Can It Solve More than the Drug Counterfeiting Problem?

The Facts

Beginning in February 2004, the FDA put the wheels in motion for widespread RFID adoption within the pharmaceutical industry. The agency's report titled, "Combating Counterfeit Drugs," recommended that RFID technology be in "widespread use throughout the pharmaceutical industry by 2007." Further promoting their stance on RFID, the FDA published a Compliance Policy Guide (CPG) in November 2004 for implementing RFID feasibility studies and pilot programs. There is no question that this move supported their commitment to the use of RFID throughout the United States' drug supply chain.

The FDA has also created an RFID Workgroup whose charge is to monitor the adoption of RFID in the pharmaceutical supply chain, proactively identify potential regulatory issues caused by the technology, and create a process to communicate and resolve any emerging issues. The workgroup is also charged with collecting the data necessary to develop long-term policy for the industry as it relates to the use of RFID technology.

Implementing RFID technology within the drug supply chain will allow manufacturers, wholesalers, distributors, and retailers to ensure that drugs are authentic and thereby decrease or eliminate the rising number of reported patient safety cases related to dispensing counterfeit drugs. The electronic pedigrees created by

moving and tracking a drug throughout the supply chain will also allow for rapid identification and recall processes to be created, and in some cases, automated.

Because of the FDA's support of and activities around RFID, most pharmaceutical companies are now either actively involved in RFID pilots or they're anxiously watching and waiting for test results to be published and the next FDA report to be issued. They're also beginning to get a sense of the cost and effort it's going to take to become compliant.

The Challenge

Deploying RFID technology by the pharmaceutical industry is the right thing to do. If it saves even one life, it will have been worth the resources and effort invested by all. However, what are the extended benefits that can be realized through RFID technology? Implementing RFID to help solve the drug counterfeiting problem alone is akin to operating with blinders on, and it's questionable whether such an implementation would be cost effective or show a return on investment.

There is an opportunity to reduce costs and increase profits via RFID in both the ethical and consumer product manufacturing and distribution segments. The key component for companies to understand is that the technology, in and of itself, is not the answer to meeting strategic business goals and objectives. It's the

complex analysis of the tracking data, or electronic pedigree data, as well as the sensory data (which is collected via RFID tags) that will allow companies to derive



the greatest and most strategic operational benefits, including:

- > Increasing product quality.
- > Reducing inventory cycle times.
- > Detecting and eliminating gray market activity.
- > Verifying contract compliance and reducing rebate payments.
- > Optimizing forecasts and budgets.

Are pharmaceutical companies like yours prepared for or even thinking about the collection, integration, and management of RFID data? The technology – tags and readers – has already been proven and will become more and more affordable as advancements are made. What is yet to be determined are the data architecture and roadmap for the underlying data – the foundation on which any and all successes using RFID technology will be realized.

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The Solution

The first major step towards building a firm data foundation for your RFID implementation is designing a flexible and extensible data model. The technology on which it's implemented must support the active loading of massive amounts of tracking and sensory data that will be generated in near-real-time. The data must also be made available for continuous analysis. A single data repository that has the capability to scale as data volumes increase and integrate other operational data sources throughout the company will be required.

This is where the power of Teradata Corporation comes in. Not only does Teradata provide the world's most scalable databases to support the deluge of RFID data volume, but Teradata also provides an industry leading Manufacturing Logical Data Model that takes into account all the components of RFID data and allows companies to seamlessly integrate those data with information throughout the enterprise. By taking an enterprise approach to RFID data management, the information is loaded once for many uses while avoiding the costs and errors associated with data replication.

Figure 1 depicts the typical simplified Teradata architecture that is implemented to accommodate the generation, integration, and analysis of RFID data across the enterprise. It also supports the active

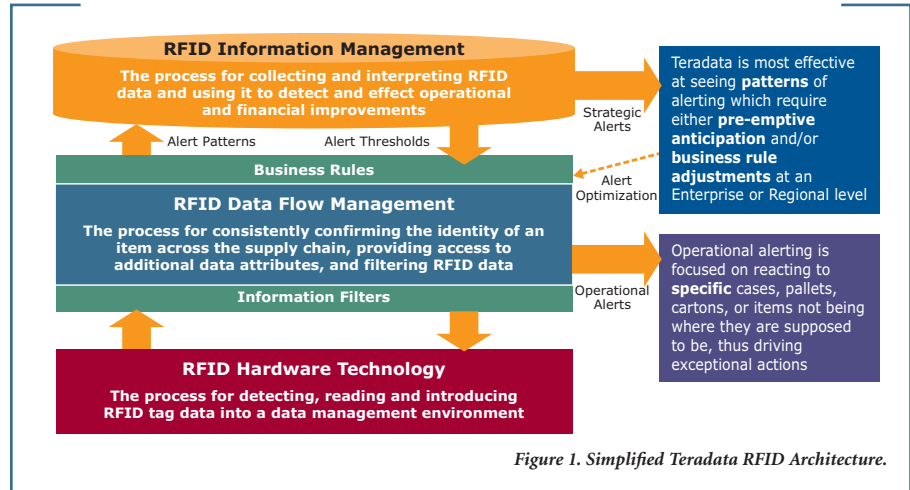


Figure 1. Simplified Teradata RFID Architecture.

alerting features that are mandatory in supporting a robust signaling system that will detect and alert companies to potential breaches in the supply chain.

The Way Forward

RFID solutions from Teradata begin with consulting services that provide an accurate assessment of your needs and current capabilities. Based on the results, we'll design and implement a data warehouse and analytic solutions that address your requirements. Then we'll measure the ROI and look for opportunities to apply the data to new applications throughout your enterprise.

We have architected our Teradata® Manufacturing Logical Data Model (LDM) to serve as a blueprint for integrating RFID and other manufacturing data from any

source into your enterprise data warehouse. The LDM is a comprehensive and flexible model that creates an ideal framework and roadmap for leveraging RFID data across the enterprise to address an array of strategic business objectives.

We also offer analytic software applications that focus on key business improvement opportunities. For example, Teradata SeeChain analytics allow companies to monitor every instance of an item throughout the extended supply network.

To find out more about how an RFID solution from Teradata can help you maximize your investment in RFID technology, visit Teradata.com and request a contact from one of our industry representatives.

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