

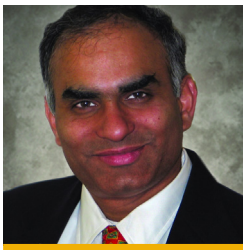


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# From Standalone Deployments to Integrated Business Processes

## Keys to Generate Value from RFID



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A year ago, companies thinking about adopting RFID were mostly concerned about the technical hurdles. They grappled with how to get started and how to overcome the challenges that early hardware and tags presented: high tag costs, uncertain read rates, and evolving standards. Today, RFID is emerging from the experimental stage. With a new generation of hardware and tags, read rates are up, costs are headed down, and many companies are moving from their first, limited pilot rollout to their second and third projects. The challenges now are how to embed RFID into commercial-scale business processes, and *how to generate value* from RFID.

Great progress has been made. Early adopters are now rolling out RFID on a commercial scale, showing innovation and creativity to drive business value and capture significant business benefits through RFID. One key to their success? More integration of RFID data with their business processes.

### Industry Updates – How SAP Customers Achieve Increased Business Value with a Broader, More Integrated Approach to RFID

From the early days, SAP anticipated the proliferation of RFID into a wide range of industries and processes, and has taken a platform-oriented approach to integrating RFID data into mainstream business processes. The market is validating this position with success stories emerging from various industries and process types.

In each of the following industry examples, you'll see how our customers are expanding the *scope* of business processes that use RFID data, and with it, the *breadth* of the business information being leveraged.

**Consumer Products Companies Move Beyond Slap and Ship**  
Mandates from Wal-Mart and other "big-box" retailers spurred consumer products (CP) companies forward

with RFID projects. Many companies started with the minimum needed to comply – they printed RFID labels, slapped them on cases and pallets, and shipped these items out to Wal-Mart. This short-term, "slap-and-ship" approach looks at RFID data in isolation and does not target the potential value that could arise from a more holistic, process-oriented view of the data.

Further up the RFID value ladder, we find **Pacific Cycle**, a leading bicycle manufacturer that is employing SAP Auto-ID Infrastructure (SAP AII) as its foundation to generate additional business value from RFID data. For specific customers that have requested RFID tags, Pacific Cycle RFID-tags each bicycle at the time the outbound shipment is staged. Inside Pacific Cycle's SAP R/3 system, the business process associates the serialized tag information with order and delivery information, giving Pacific Cycle the ability to more specifically track and trace the status of orders. Once it begins using RFID to receive and move inventory through its system, Pacific Cycle will be able to determine improvements in inventory accuracy. Eventually, based on tag-read information received back from its retailers, Pacific Cycle will also be able to analyze the movement of its products inside retailers' warehouses and stores to improve its own inventory and forecasting processes.

**Kimberly-Clark** (K-C) is also driving RFID value far beyond compliance. K-C's strategy is to create and manage a repository of serialized (EPCIS) data, sourced from its own internal business processes as well as through data exchange arrangements with its trading partners. This EPC data repository and associated internal business information will be the foundation for a number of value-added business processes. K-C's first business process aligned with this strategy is its Electronic Proof-of-Delivery Use-Case project.

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In each of these industry examples, we can trace an evolution in the value derived from RFID, the scope of the business process, and the associated business information.

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In this project, K-C correlated RFID read data from its customers with its own ship data and contract information to determine potential shipping-receiving discrepancies, thereby ensuring the proper ordered inventory is on hand at the retailer. In addition, K-C is also planning to combine this data with point-of-sale (POS) and other demand data to enable a suite of demand-driven supply chain applications.

In another innovative application of RFID, SAP partner **Infosys** is developing an xApp called New Product Introduction & Promotion Management (NPI&P) to address the challenge of executing product launches and promotions. NPI&P addresses a key reason that 40% to 50% of promotions and 75% of product launches fail – that is, that retailers do not always display promotional items on the shelf in time for the associated marketing blitz. This xApp provides real-time visibility of product movement and promotional displays to the store shelf. It integrates RFID data with other demand data sources and compares the data with execution plans from the planning and CRM systems to enable companies to intervene and improve promotion readiness. This timely insight and visibility provided by NPI&P will assist in reducing lost sales and driving revenue for both retailers and manufacturers.

### Life Sciences Companies Deliver Value Beyond Compliance

Within the life sciences industry – comprised of pharmaceutical companies and medical device manufacturers – we see a similar evolution in RFID projects. Mandates are coming from state and federal government agencies, as well as wholesalers and retailers, in response to increasing levels of theft, counterfeiting, and diversion worldwide. Manufacturers and retailers are concerned about brand protection and liability, and governments are stepping in to regulate the process by which pharmaceutical businesses manage their supply chains.

Consider **Purdue Pharma**, a US-based, privately held pharmaceutical company. Purdue is the maker of a well-known Schedule II pain medication, and responded quickly to the Wal-Mart request by tagging drug products at the item level for shipments to Wal-Mart. Tagging takes place automatically in Purdue's packaging line, and the serialized product information is captured in SAP AII. Batch information from mySAP ERP is associated with the serialized data, providing the data foundation to support the lot expiration process as well as any potential recall

scenario. In the warehouse, when the product is shipped to a customer, it is scanned as part of the packing and loading process, and the serialized information is associated with delivery documents and recorded in the SAP AII repository. This can provide the foundation to track that all products shipped are received, and to authenticate that products received at the retailer are genuine.

In addition, this repository also enables Purdue to address the emerging pedigree requirements of US state regulations, which mandate that certain product, production, sales, and distribution data for every outbound shipment must be documented in an electronic or paper form. This will allow Purdue's customers to confirm that their products have followed a trustworthy chain of custody on the way to the consumer.<sup>1</sup>

In the medical devices industry, **Biomet** developed an innovative RFID process to facilitate the handling of surgical implant kits. Biomet's inventory consists of a large variety of high-value surgical implant items, which are assembled into loaner sets and sent to hospitals. During surgery, typically only a few items are used out of the kits, and the partial kits are returned to Biomet where they are visually inspected. This is a time-consuming process in that it requires high attention to detail in order to ascertain which items have been used. Biomet then invoices the hospital only for those items removed from the kit, and replenishes the missing items. Biomet was looking to maximize accuracy and to reduce the manual effort involved in this process. This was accomplished by RFID-tagging the individual items in the kit, scanning them as part of the shipment process, and scanning the returned kits as part of the receipt process, to determine accurately and quickly which items had been removed. In this process, the RFID scan data is associated with inventory information, as well as customer and contract information. This significantly improves productivity while still ensuring accurate and timely invoicing.

Life sciences companies – as well as companies of any industry – can look for future RFID-specific applications to drive even greater business value. One example is *Recall Management*. Today, when a recall is announced, it is difficult and time-consuming for the

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<sup>1</sup> For more information on Purdue Pharma's innovative use of RFID technology, visit [www.sap.com/usa/industries/lifesciences/pdf/CS\\_Purdue\\_Pharma.pdf](http://www.sap.com/usa/industries/lifesciences/pdf/CS_Purdue_Pharma.pdf).

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Point RFID solutions may have been sufficient for our customers in the piloting stage, but they will not be able to provide the necessary reach to deliver the full value potential of RFID.

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manufacturers and wholesalers to validate that all products they receive are genuinely theirs, and that they are, in fact, subject to the recall. This can lead to overcompensating the wholesalers and pharmacies, and potentially introducing a counterfeit product into the supply chain. With Recall Management, manufacturers and wholesalers will be able to make focused recalls based on serialized information, and to receive and authenticate the received product efficiently.

Another example of what RFID technology will enable in the future is a *Chargeback Management* application; manufacturers will use RFID data to gain greater visibility into their specific products that are shipped and received by wholesalers and pharmacies. This will allow manufacturers, when they ship products to customers who are entitled to a discount, to confirm chargebacks claimed by wholesalers and to catch duplicate claims before they are processed.

### Airline Operators, Logistics Service Providers, and More – Deriving Value Through Asset Management

Beyond CP and pharmaceutical companies, many industries – from aerospace and defense, to automotive and public sector – are applying RFID technology to generate more value from their business processes. Innovative applications of RFID have emerged in the area of *Asset Management*. Some of these applications apply to maintaining fixed assets, while others are for assets, such as tools or transport items (pallets, totes, etc.), that move around and must be tracked and maintained.

Consider the example of **Fraport**, owner of the Frankfurt airport. Fraport employs SAP RFID technology to automate the maintenance process for the

22,000 fire shutters that protect the airport in case of a fire. Maintenance workers must now scan the RFID tags on their badges and on the fire shutters to record the beginning and ending of maintenance, then confirm each maintenance step on their hand-held unit. The process enables Fraport to reduce labor effort, capture more accurate maintenance history, and provide proof that the maintenance of this critical equipment is done as recorded.<sup>2</sup>

In the area of mobile asset management, SAP is working with **CHEP**, a global leader in pallet and container pooling services, to manage and track its assets (pallet and container), as well as the products shipped on these assets. CHEP is RFID-tagging individual assets, reading the tags within its service center network, and collecting tag-read information from its customers. In addition to enhancing throughput and reducing paperwork, this process provides accurate data on asset movement and asset repair, helping to reduce asset losses and improve service-center operations. By maintaining event-handler models for each asset, CHEP can monitor events for exceptions and provide its different business units, as well as its customers, with proactive business alerts that focus on both asset and product management.

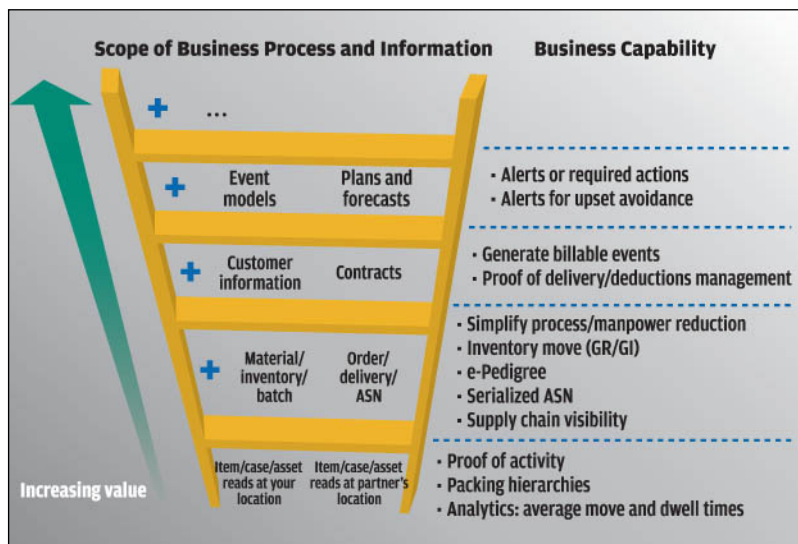
By capturing event data within different points of its service center network, CHEP uses the Event Manager to monitor process throughput and to highlight exceptions. Furthermore, the Event Manager is used to synthesize event information from the extended supply chain. CHEP uses this capability to provide value-add service to its customers, enabling them to track and trace their own products. CHEP has deployed this process in several service centers and with key customers, and has already recorded measurable bottom-line benefits in terms of faster turnaround and real-time visibility of its containers as well as its customers' products.

### Past the Point of Point Solutions: RFID Value Comes from the Business Process Connection

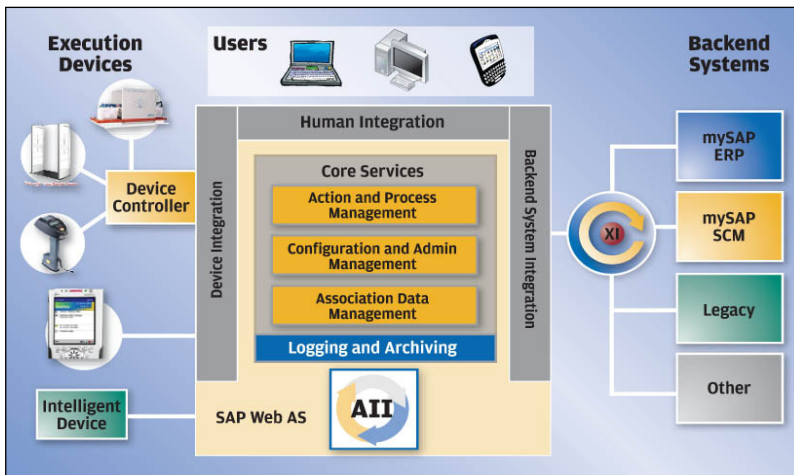
In each of these industry examples, we can trace an evolution in the value derived, the scope of the business process, and the associated business information. At the bottom of the business process ladder shown in **Figure 1**, basic RFID processes start as

To take advantage of all the current and future possibilities of RFID applications, you need to be able to integrate RFID information with a wide variety of business objects inside your enterprise solutions.

**FIGURE 1** ▼ The RFID-enablement value ladder: As RFID technology captures more and more process information, its value to the business increases



<sup>2</sup> For more information on Fraport's use of RFID technology, visit [www.sap.com/usa/solutions/business-suite/erp/corporate\\_services/pdf/CS\\_Fraport\\_AG.pdf](http://www.sap.com/usa/solutions/business-suite/erp/corporate_services/pdf/CS_Fraport_AG.pdf).



**FIGURE 2** ▲ SAP's process-based approach to RFID lets you take advantage of several SAP technologies; see [www.sap.com/rfid](http://www.sap.com/rfid) for more details

“This is a solid enterprise infrastructure for RFID that will allow for the practical usage of RFID data across more processes and applications than many of the point solutions on the market. As companies discover and pursue RFID-related programs that are oriented toward business improvements, they will need to build an RFID infrastructure that can be used across their business.”

Steve Banker,  
ARC Advisory Group,  
describing SAP's RFID  
solution package

localized processes in a manufacturing or distribution location, using limited tag-read data. As companies move up the ladder, processes extend to include the integration of order and delivery documents in ERP and, ultimately, to a variety of extended business processes that leverage a wide array of business information, such as manufacturing batch information, customer and contract information, and detailed promotional plans.

To realize business value from RFID, it is important to associate RFID data with other streams of enterprise and partner business data. Standalone deployments that handle RFID data in isolation can only address simple applications, providing limited value due to the narrow business context they provide. This is the domain of pure-play RFID solutions in the marketplace, which provide simple, standalone solutions, such as inventory stock counts, lead-time and dwell-time analysis, etc.

While these solutions can help companies discover short-term insights, the real value lies in using these insights to transform long-term business processes. This is the path SAP is opening to its customers; **Figure 2** provides an at-a-glance look at SAP's holistic approach to RFID, embedded in SAP NetWeaver and service-enabled as part of an enterprise service-oriented architecture (enterprise SOA).

### Conclusion

RFID applications are moving out of the experimental stage to the value-generation stage, and customers are finding ways to leverage RFID technology to drive business value. This evolution broadens the scope of related business processes and information. From a technology perspective, these trends provide critical insights that should

guide any major enterprise considering the deployment of RFID:

- 1. Be flexible and innovative.** RFID technology is still expanding in many directions – it is hard to predict the next new RFID application, what objects might carry an RFID tag, or what business process will be enabled next. Companies need a flexible infrastructure and room to innovate as more solutions become available.
- 2. Think ahead, and think architecturally.** Because RFID technology is constantly changing, companies should enable RFID processes that can plug in almost anywhere in the business process and access a wide variety of business objects.
- 3. Position yourself for the broadest possible scope.** As the market finds more opportunities to leverage RFID, you must plan for a growing volume of data to capture and information to store.

These are the key reasons why SAP has taken a platform-based approach to RFID technology. Although early, pure-play deployments focused primarily on RFID data alone, looking at RFID data in a vacuum is no longer sufficient. Companies that continue to deploy RFID in isolation from the rest of their enterprise applications are missing the big picture. You must look at RFID data in the context of your mainstream business process. As early adopters have verified, *this* is where the value lies. ■

### Additional Resources

- Sessions in the *Tracking and tracing goods and assets: RFID, GPS, SAPConsole, and SAP Auto-ID Infrastructure* track at the *Logistics and Supply Chain Management 2007* conference in Barcelona and Orlando ([www.sapsbcm2007.com](http://www.sapsbcm2007.com))
- “Achieve Competitive Advantage, Not Just Compliance, with RFID” by Amar Singh in the January-March 2006 issue of *SAP Insider* ([www.SAPinsideronline.com](http://www.SAPinsideronline.com))
- “RFID Primer for the SAP SCM Professional” by Shreekant Shiralkar in the April-May 2005 issue of *SCM Expert* ([www.SCMexpertonline.com](http://www.SCMexpertonline.com))