RFID for Consumer Products Companies

The Vision for Consumer Products with RFID
By the end of 2006, over 400 consumer products companies will be using Electronic Product Code (EPC) data received from their retail partners. Retailers have established automated read points at their distribution centers’ receiving, conveying, and shipping points, at store receiving points, and backroom to sales floor transition points. The automated reading of the unique EPC identifier and the sharing of the resulting information in a timely manner provides the basis for significant new insight for consumer products companies. This retailer EPC information provides a dramatically increased level of visibility into the movement of products from the retailers’ distribution centers to the sales floor.

RFID Benefits for Consumer Products Companies
So what can you do with this EPC information? Eight companies have been receiving these data for over a year from their retailer(s) and OAT has had the good fortune to be the chosen partner of half of them. Working closely over the last year with these early leaders has led to the validation of several best practices, identifying where the value is in RFID-enabled processes and how best to manage EPC information. There are numerous areas for unlocking new business value being pursued by these leading companies, including:

- reducing retailer deductions due to inaccurate shipments or inaccurate receipt of goods
- improving replenishment forecast accuracy
- reducing product obsolescence
- improving promotion execution.

We will describe one of these areas (improving promotion execution) in a little more depth to provide a more thorough explanation of how these leaders are gaining business value from their EPC information.
Event-based promotion execution
Before getting retailer EPC information, the best information consumer product companies had about store-level promotion execution performance was watching sales information. Unfortunately, this information was reactive – you had to wait for several days of “zero sales” reports to identify a possible execution problem before action could be taken after the fact.

Without a unique identifier it was often very difficult to tell promotional product from standard shelf-stocked product based on the POS reports. Due to these shortcomings, nearly all consumer product companies simply allocate store coverage personnel on a standard schedule of stores to visit, regardless of whether there is an issue or not. This schedule-based approach is a terribly inefficient process.

Retailer EPC information helps enable event-based promotion execution, identifying which stores will have a problem before a stock out occurs. The company can then route store coverage personnel to only those stores that have product stuck in the backroom. One leading consumer products company has stated that using retailer EPC information helped them determine that they could improve store sell-through by 48% by ensuring the movement of promotional product onto the sales floor on time. Using EPC information, they can identify the stores that are lacking sales floor inventory and take action before the promotion launch date.

Consumer products companies that implement event-based promotion execution can achieve a competitive advantage by increasing promotion execution performance (higher lift than their competitors for each promotion) and gaining more promotional space and time than their competitors.

IBM and OAT: An RFID Solution
Both OAT and IBM have been leaders for years in helping consumer product companies successfully deploy RFID and achieve business value. Many of the world’s consumer products companies have also chosen IBM as their strategic software infrastructure provider and have a strong preference to implement RFID initiatives on IBM architecture. For these reasons, IBM and OAT came together and enhanced the IBM RFID Solution for the Consumer Driven Supply Chain, tailoring it towards the needs of consumer products companies and their retail partners.

This solution combines OAT’s best-of-breed RFID application software with IBM’s robust, scalable end-to-end architecture to provide consumer products companies with a dynamic solution for today’s RFID applications and the flexibility for extending to future enablement of additional business processes. IBM Global Services’ RFID leadership, combined with OAT’s technical expertise, provides a compelling consulting team for implementing RFID-enabled business processes and supporting the solution.
The OAT and IBM solution features:

- **OATxpress** - the proven run-time environment to deploy the dozens of pre-built best practice scenarios or any created through the OATlogic design environment.
- **OATlogic** – RFID design environment to create new RFID-enabled processes to meet the unique requirements of your organization.
- **IBM WebSphere® RFID Premises Server** that forms the foundation of a flexible, scalable, and robust end to end architecture.
- **OATxpress and OATlogic** deployed on the IBM RFID Premises Server that includes IBM WebSphere®, DB2® and MQSeries® components.

**Fig. 1: RFID Solution for the Consumer-Driven Supply Chain**

Challenges addressed by this solution

Listed below are three of the most critical challenges consumer products companies must overcome to deploy RFID solutions successfully. We will discuss each of them briefly and describe how our solution addresses them.

**Implement best practices for tagging, pallet building, rework, verification and shipping**

Companies have been faced with the difficult choice of either opting for an apparently economical yet very constrained RFID solution ("Slap & Ship") or hiring a consultant to create a custom solution. What most companies actually desire is a best practices library that is configurable, deployable and upgradeable. The table below compares these three options for implementing RFID-enabled processes.

<table>
<thead>
<tr>
<th>Option</th>
<th>Breadth of Best Practices</th>
<th>Customization Mechanism</th>
</tr>
</thead>
<tbody>
<tr>
<td>Slap &amp; Ship</td>
<td>One way to do it</td>
<td>None available</td>
</tr>
<tr>
<td>Consulting services</td>
<td>Depends on specific consultant’s knowledge</td>
<td>Custom code, no upgradeability, support.</td>
</tr>
<tr>
<td>Best Practice library</td>
<td>Numerous</td>
<td>Configurable, extensible via designer and SDK, upgradeable</td>
</tr>
</tbody>
</table>

Slap & Ship solutions severely constrain the configurability and customization options to keep the overall cost as low as possible. Consulting services delivery is highly variable – the quality depends on the person who gets assigned to your account. A best practice library is a set of pre-defined, RFID-enabled processes that are configurable through the software user interface. This option provides the greatest breadth of best practices, the easiest and most efficient manner to configure the processes, and a method to extend the best practices and still maintain upgradeability.

As part of the solution, OATxpress, running on IBM’s end-to-end architecture, offers dozens of out-of-the-box best practice scenarios for tag commissioning, pallet building, rework, verification and shipping.
**Select an RFID implementation approach that enables the capture of business value**

Once you determine that there is value in EPC information for your organization, you then need to decide what is the best way to manage both the internal RFID data that you generate and the RFID data that the retailers provide. The most common options that we see today are:

<table>
<thead>
<tr>
<th>Most Common Options</th>
<th>Internal Data</th>
<th>Retailer Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>No EPC information capture</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>EPC information captured only at tagging facility</td>
<td>i.e. Bolt-on to WMS or stand-alone RFID middleware</td>
<td>None</td>
</tr>
<tr>
<td>Migrate some tagging facility data to ERP</td>
<td>Some in WMS/RFID middleware, some in ERP</td>
<td>None</td>
</tr>
<tr>
<td>3rd party EPC information service</td>
<td>None</td>
<td>Reports of data (masked to respect confidentiality)</td>
</tr>
<tr>
<td>EPC Information Management</td>
<td>Integrated internal and external EPC data</td>
<td>None</td>
</tr>
<tr>
<td>Build custom data warehouse</td>
<td>Custom data warehouse</td>
<td>Custom data warehouse</td>
</tr>
</tbody>
</table>

For example, let’s say you want to use retailer EPC information as evidence to reconcile deductions for incomplete and inaccurate shipments. To achieve this, you must combine the retailer EPC read information with an EPC manifest (all EPCs on a shipment), and then reconcile any retailer claims against these records. An EPC Information Management system, on the other hand, has a much shorter time to deploy, is less costly to maintain, and provides a more robust long-term roadmap than a custom-built data warehouse or other possibilities.

**Become self-reliant in RFID**

Much of the money being spent on RFID today is on consulting support for activities that could be easily accomplished by companies themselves using OATxpress and OATlogic software.

OATxpress, running on IBM’s end-to-end architecture, provides market-leading management of RFID devices, locations and processes. In a run-time environment, companies can add new devices, change configuration parameters on an active device, add new scenarios, add new locations and devices to scenarios, and manage it all through a color-coded dashboard.

Of all these options, only one – EPC Information Management – provides an integrated solution to manage both the internal and retailer RFID data in a common repository. Managing RFID information consistently, centrally and in an integrated fashion with your product master data is critical to generate the type of analytical insights necessary to get value from RFID.
A second key component to self-reliance is a meaningful design capability to modify and add new RFID-enabled processes. OATlogic provides a configurable design environment to create RFID-enabled business processes running on IBM's end-to-end architecture. OATlogic enables consumer product companies to configure the desired RFID-enabled business processes, and yet still be able to upgrade to future standard releases. OATlogic achieves this by providing the following capabilities:

- rfPrimitives – a library of nearly 100 configurable and reusable process components to design new processes
- OATlogic Designer – a graphical user interface to easily design, modify and test new processes
- SDK – a software development kit to create new rfPrimitives to create fundamentally new processes and maintain upgradeability

Call on us
Learn more about how OAT can help you achieve value from RFID. Please contact us at sales@oatsystems.com or visit us online at: oatsystems.com

Please contact your IBM representative or visit us online at: ibm.com/solutions/RFID or ibm.com/industries/retail. You can also write to: wireless@us.ibm.com

IBM, the IBM Business Partner Emblem, DB2, MQSeries and WebSphere are trademarks or registered trademarks of International Business Machines Corporation in the United States, other countries or both. OATSystems is a trademark of OATSystems, Inc. in the United States and other countries or both.