

March, 2009

## RFID: Beyond the Supply Chain

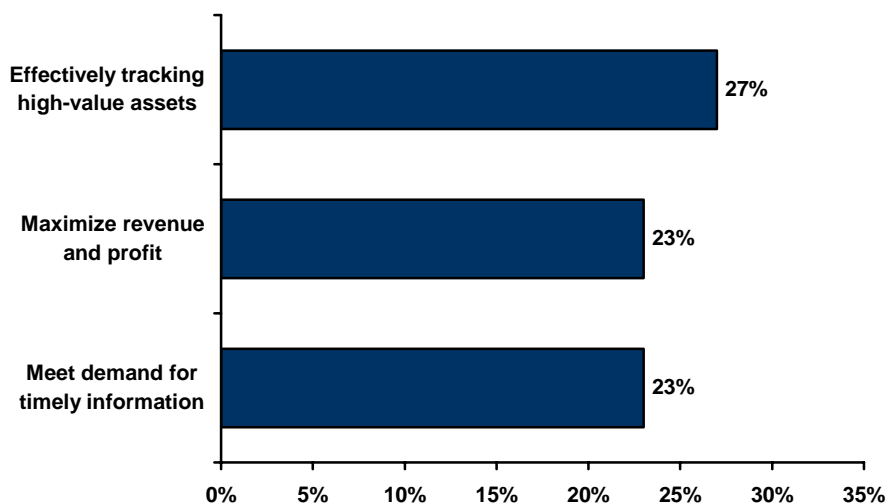
Radio Frequency Identification (RFID) is moving beyond its supply chain roots and taking hold throughout the enterprise. Aberdeen research shows that different uses for RFID capability are gaining traction and delivering business value. While RFID continues to be widespread in the supply chain (46% of survey respondents stated “improving supply chain efficiency” as their top priority), Aberdeen’s November 2008 study *Where RFID Meets ROI: Beyond Supply Chains*, showed that organizations have also realized benefits by incorporating RFID into other business functions. Aberdeen has correlated the actions that companies take with the performance they achieve, and has determined that Best-in-Class companies – those exhibiting top performance across four distinct metrics (see call-out box at right) – provide clear directional indicators for driving RFID investment value.

### The RFID Strategy

In November 2008, Aberdeen conducted a comprehensive study of the business value of RFID for business functions across the enterprise. The results of Aberdeen’s study are collected from 220 survey responses as well as follow-up interviews with select participants.

Figure I displays the top objectives survey participants indicated for their investments in RFID.

Figure I: Top Objectives for RFID Investments



Source: Aberdeen Group, November 2008

### Analyst Insight

Aberdeen’s Insights provide the analyst perspective of the research as drawn from an aggregated view of the research surveys, interviews, and data analysis

### Performance criteria for Best-in-Class organizations

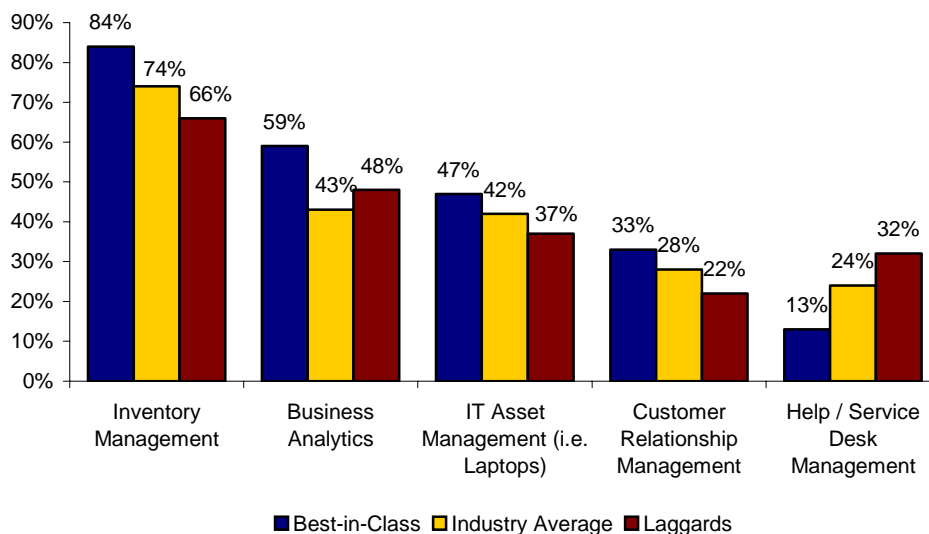
In *Where RFID Meets ROI: Beyond Supply Chains*, Aberdeen used four performance criteria to distinguish Best-in-Class companies:

- ✓ **Best-in-Class** companies were able to **decrease** time to information for operational / line-of-business applications by **7.9%**, while Industry Average and Laggard companies saw increases
- ✓ **Best-in-Class** companies saw a **1% decrease** in year-over-year infrastructure costs, while Industry Average and Laggard companies saw increases
- ✓ Employee productivity in **Best-in-Class** companies **increased** by **9.1%**, while Laggard companies saw an increase of only 0.6%
- ✓ User satisfaction increased **19.8%** for **Best-in-Class** companies, while Industry Average saw an 8.7% increase in user satisfaction

The top strategy selected by more than a quarter of respondents is the plan to use RFID to more effectively track high-value assets. This does not necessarily equate to products being shipped to or from customers in a classic supply-chain sense, but can also deal with assets that remain “on-premise”, for example expensive equipment used within a hospital campus.

Those companies surveyed also want to maximize their revenue and profit, and in order to do this, RFID must be integrated into a number of systems. Survey respondents indicated that their current RFID integration varies widely across different systems, with some projects seeing the addition of RFID at the beginning of an implementation and others at full or nearing full implementation. Figure 2 shows areas of the business beyond the supply chain that are becoming “RFID-enabled.”

**Figure 2: Areas of the Business where RFID Integration is currently Implemented**



Source: Aberdeen Group, November 2008

While Best-in-Class companies are more likely to be integrating RFID within inventory management environments (84%), between two-thirds and three quarters of Laggard and Industry Average companies are also investing in this area of the business. But it is the diversity of Best-in-Class investment across many areas of the business that provides interesting insight. Best-in-Class companies are also more likely to integrate RFID-generated data within business analytics applications. This addresses one of the key challenges identified in Figure 1 – meeting the demand for timely information. By integrating RFID data into business analytics applications, front-line managers can more easily see, in the reports and views produced by the application, where their tagged assets are or where they need to be.

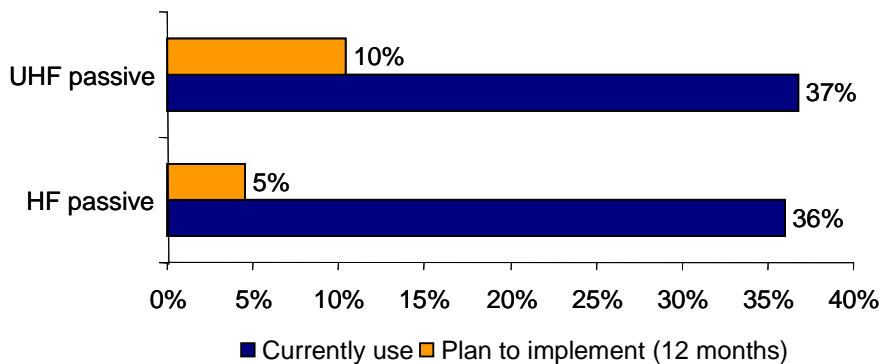
Aberdeen Group’s March 2008 study [RFID in Retail: The Truth Behind the Hype](#), shows RFID’s ability to provide accurate, real-time updates which can

provide item counts on demand within a matter of minutes. The combination of RFID and business analytics improves inventory management, reduces labor and increases customer service by allowing managers to rapidly find low or out-of-stock items on the floor, and remediate the situation quickly.

### **RFID Implementations**

Figure 3 shows that the both UHF and HF passive tags are being implemented at almost identical rates, but UHF will become more widely used over time, with twice the number of respondents indicating that is their future direction.

**Figure 3: UHF vs. HF - Used Beyond the Supply Chain**



Source: Aberdeen Group, November 2008

Of all companies surveyed, 37% are currently using the UHF technology, and 36% are using High-Frequency (HF) passive tags. Ten percent of companies surveyed also plan to implement UHF technology and only 5% plan to adopt HF passive tags.

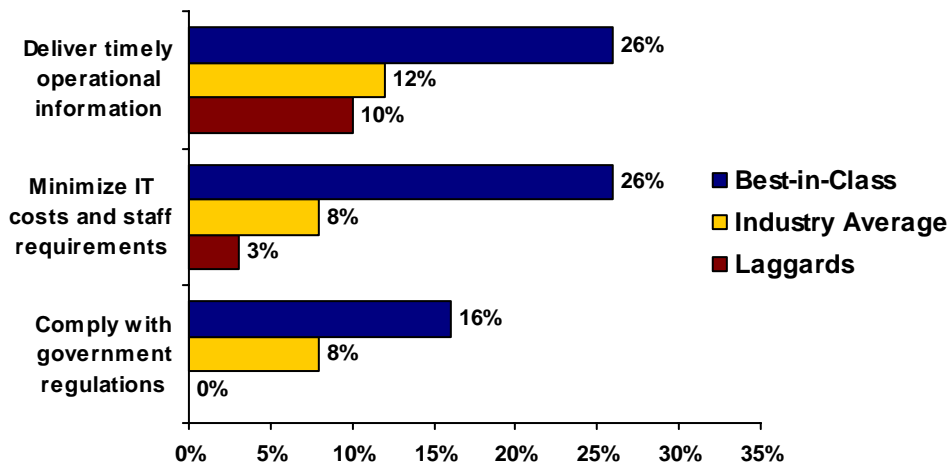
Both types of RFID tags help organizations solve some of their key business problems, which include those found in Figure 1, as well as delivering business intelligence / analytics to more people, which in turn will help these companies maximize their competitive agility and responsiveness.

### **Differing Objectives of Best-in-Class**

While Figure 1 shows the top objectives for all businesses using RFID technology beyond the supply chain, Best-in-Class companies are using this technology much differently.

Figure 4 shows that Best-in-Class companies are over twice as likely to use RFID technology to deliver timely operational information, which can range from the amount of inventory currently on a shelf in a supermarket to discovering missing pieces to manufactured goods.

**Figure 4: Top Three Best-in-Class Objectives for RFID**



Source: Aberdeen Group, November 2008

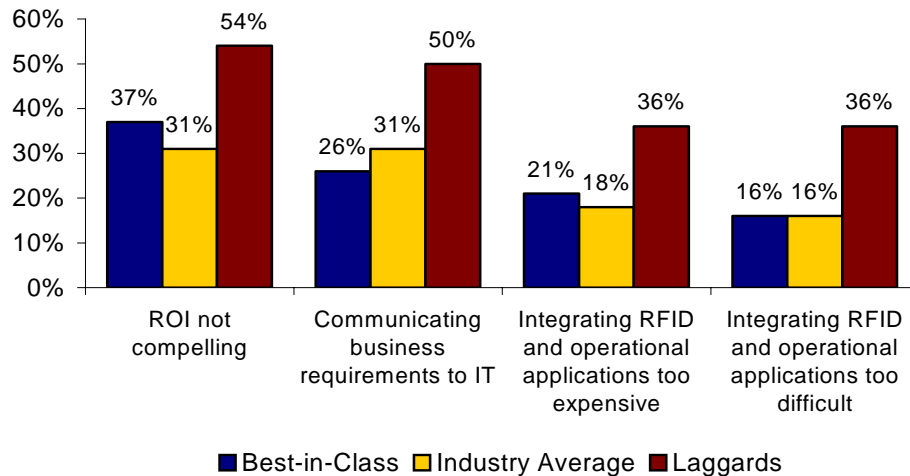
Best-in-Class companies have used RFID technology as a way to minimize IT costs and staff requirements. These companies are also using RFID technology as a way to achieve compliance to government regulations, which can be especially important in industries such as chemical and pharmaceuticals. By integrating RFID data with systems that track environmental changes, RFID tags can communicate when an item has been in too hot or cold a place, exposed to sunlight, or even moisture. Data from such a transaction can then notify the holder of those goods whether they still meet government regulations, and what the next step is or should be.

Tracking assets is also mandated by Sarbanes-Oxley legislation, so by being able to reconcile claimed versus actual assets, a company can remain compliant. And by integrating RFID with a system that can give better and more accurate operational information, a company can create reports for industry and government-regulated audits.

**Challenges for Deploying RFID into the Enterprise**

Figure 5 displays the top challenges of deploying RFID reported by survey participants. What should stand out immediately is that while these are the top challenges across the performance framework, Laggard organizations report each challenge far more often than their competitors. Given the performance of these companies, their top challenge, that the ROI of RFID is not compelling, comes as little surprise. While Best-in-Class are seeing dramatic gains; Laggards are seeing their ability to meet these measures deteriorate. In fact, 33% of Laggard companies report that they are still trying to maximize their ROI, which can be compared to 17% of all other performers.

**Figure 5: Challenges in Deploying RFID**



Source: Aberdeen Group: November 2008

Communication is also a big problem leading Laggard companies to try to make up for lost ROI opportunities. Poor communication between IT and end users makes the integration process more expensive, and the RFID and application integration is not what was envisioned by end users, making it seem like a technology problem when this may not be the case. This poor communication directly correlates to Laggard companies' inability to put together an integrated RFID system across multiple operational business functions. Thirty-six percent (36%) of these companies find this integration too expensive and too difficult, while Best-in-Class and Industry Average companies don't have nearly the same difficulty.

"If you look at it from an efficiency perspective, RFID makes perfect sense [for tracking IT assets]. As we started looking at RFID, we saw more and more clearly that there were ways this technology could benefit the entire [financial services] industry. If we can simplify workflows for our data center staff..., and we use common models with our hardware suppliers, it translates to an advantage for all of us and enables us to provide even greater customer services."

~ Mike Russo,  
SVP, Wells Fargo,  
and founding member of an  
RFID Special Interest Group  
(SIG) within the Financial  
Services Technology  
Consortium (FSTC)

## End-User Systems Being Rolled Out

RFID users are leveraging the lessons-learned from supply chain utilization to achieve business benefits in numerous business areas such as: retail, manufacturing, warehouse and distribution, asset management, utilities and energy, food and cold chain, aviation, government, postal applications, and pharmaceuticals.

Some case-study examples of this variety of uses include:

- IT Asset Management** – Asset management can be expensive, and Hexaware Technologies recognized that they could reduce their costs by improving visibility into their more than 3,000 IT assets. The company was focused on reducing the amount of man hours spent tracking inventory and assets, and improving asset maintenance to reduce replacement costs. The company also needed a solution to keep them in compliance with Customs through better and more accurate accounting for exported assets. By applying RFID tags to assets at their arrival into a facility that interacted with fixed readers and a real-time web-based asset-

tracking application, the company was able to reduce personnel costs – time required to perform physical inventories dropped significantly. Better accounting of assets also reduced the company's liability risk, as well as improved asset maintenance and utilization statistics.

- **Retail** – New Balance wanted to improve sales through better inventory accuracy. By applying RFID labels to shoe boxes with the appropriate item level indicators (e.g. size, style) and in-store databases the company was able to track inventory in the stock room, sales floor, and sold inventory. The benefit of this was that by increasing the inventory accuracy the stores were also able to reduce out-of-stocks because inventories could be taken daily based on data collected on sold merchandise.
- **Food Chain** – The Hawaii State Department of Agriculture needed to improve the traceability of produce, not only to assure supply chain efficiency, but also to provide additional location data, origin environmental conditions, and supplier transfer information to support increasing food safety regulations. By RFID tagging its produce cartons, the department could efficiently capture, retain and transmit this type of information with the product on its path to the retail grocer. This increased traceability has made it possible to efficiently and rapidly trace back the exact location of any produce in the event of recall.

## Summary

As RFID use continues to evolve beyond the supply chain, it will give more and better visibility into assets, products and services that drive business success. For businesses employing or looking to employ RFID technology, many best practices have yet to be written. Each company faces its own set of challenges based on its goals. For some, it may be increasing profits by increasing inventory turn, while others will use RFID technology to track assets for compliance or for their own internal knowledge of where assets are located throughout the enterprise. These uses of the technology go beyond the supply chain and can be relatively simpler to implement when compared to that of full supply chain integration.

While each use of RFID technology has its own business benefits, it also comes with its own set of challenges. Setting an RFID strategy shows what objectives a company would like to realize, and what integration challenges it needs to overcome. Part of the strategy-setting process includes communicating the goals throughout the organization so a true ROI can be achieved, especially as employees and line managers see all of the business uses that RFID technology can address, along with the visibility it enables.

While Best-in-Class companies are less apt to experience a lack of compelling ROI, still 33% of this group lists this as a top challenge (Figure 5). Aberdeen research indicates that “starting small” and achieving a rapid ROI

success story is critical to building the executive support necessary to eventually

For more information on this or other research topics, please visit [www.aberdeen.com](http://www.aberdeen.com).

### Related Research

[\*Where RFID Meets ROI: Beyond Supply Chains\*](#); November 2008  
[\*RFID in Retail: The Truth Behind the Hype\*](#); March 2008

Andrew Stamer, Research Associate, Technology Markets  
([andrew.stamer@aberdeen.com](mailto:andrew.stamer@aberdeen.com))

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