



The Real State of RFID

RFID has reached the white hot hype stage. The technology has passed its proof of concept phase, and talk of a multi-billion dollar market has vendors scrambling to get on board. But building out a complete RFID infrastructure isn't a bolt-on proposition. Will the rush to "roll it out fast" put too much pressure on IT infrastructure and hamper RFID's acceptance?

The buzz about RFID is white hot. Mandates to deploy RFID within the next year make it seem that everyone will be deploying RFID soon. RFID conferences are well attended and the buzz is deafening – with talk of a multi-billion dollar marketplace ready to break out. But what is the reality? Recently a survey was conducted to determine where companies currently are in their knowledge and deployment planning for RFID.

Ajit Kambal, Director of Deloitte Research, said the survey was jointly conducted by Deloitte, Retail Systems Alert Group, and ePC Group to determine how companies view RFID adoption.



Respondents were retailers, distributors, sales volume," said Kambal. "Over 30% of all our manufacturing respondents were \$5 billion or more in revenue and more than a third of all our retail respondents were \$5 billion or more in revenue." What the results showed was that despite

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mandates and pressure to deploy, there are still significant technical and business process challenges to implementing RFID. Also evident was the different attitudes about RFID exhibited by retailers, manufacturers and distributors. “The larger manufacturers and retailers were more advanced in terms of having pilots and moving to deployment,” said Kambal. “More of the manufacturers seemed to be more committed and moving ahead. Some of the retailers were still in the early stages of working out, ‘why is this technology important to me?’”

Where you Are Affects What You See

This variation in enthusiasm appears to stem from how each group sees RFID as directly providing value to their business. “Distributors are very optimistic about increased revenues from RFID implementation,” said Kambal. “[We asked] ‘Do you have expectations for increased revenue from RFID in the first 5 years of implementation?’ 40% said they have high to very high expectations. In the distributor side, they seem to have fairly high expectations for increased revenue.”

“When we asked the same questions of manufacturers,” said Kambal, “56% said ‘we have pretty low expectations for increased revenues from RFID in the first 5 years.’ We were thinking [that] out of stock resolution and so on would drive up revenues for manufacturers, but they don’t seem to have very high expectations of that. My sense is that maybe they are just so focused on compliance right now with some of the mandates, that they haven’t worked out yet where are they going to get all the value from. I think they’re just so focused on the physics of tags, and how do you comply and make this work, that they haven’t started thinking through how to change the business.”

Timelines and Budgets Show Reality

The survey also asked questions about whether companies had developed an RFID deployment timeline and what sort of budget had been allocated. “We asked the companies how many of them have developed a timeline for RFID implementation,” said Kambal. “About 36% of them had developed a time line. That kind of surprised us. We expected much more clarity of a timeline. In a sense, maybe we should not have been surprised. Another fact finding we had, was around how much budget had companies committed to for 2004. What we found is that most of the companies have committed less than \$500,000 to this year, and most of the respondents felt that was an adequate amount. What the message of that is, I think, is perhaps many companies who are not part of the Auto ID Center effort were caught by surprise by the Wal-Mart announcements last year, and commitments were made fairly late in their budgeting and planning process. I think when we do this survey next year, we’re going to find different results.”

RFID Needs Cross-Functional Approach

Like all identity technologies, RFID affects both IT and business process. As a result, it is best to organize cross-functional teams to approach the problem. “We really think a cross-functional team is critical,” said Kambal. “RFID creates value in so many different points in a value chain, or supply chain, of either a manufacturer or a retailer, that you need to capture the value across multiple points. What [the survey] found was, 70% of manufacturers having cross-functional teams. But retailers have a ways to go in that area, with about 30% having cross-functional teams.”

“We had a bunch of questions on what people thought were hindrances or challenges to this transition,” said Kambal. “Some talked about fear of change, others talked about aversion to risk, but one of the things that came up was distrust of the IT department. What we conclude from this is the lack of cross-functional teams in a lot of environments. Maybe this initiative is being led out of IT rather than having buy-in at the higher levels of the firm. You need the buy-in of the multiple functions. and you need finance and other people to commit to this. People ought to be a lot more cognizant of how they initiate even the pilot studies and having the right people buy into it in the organization.”

Standards and Technology

UPS is an active member of the EPCglobal standards effort. They have done several pilot projects and tested nearly every RFID reader made. Bob Nonneman, Industrial Engineering Manager at UPS, is their representative to EPCglobal and responsible for their RFID pilot projects. “Our pilots have been driven by two sources, really,” said Nonneman. “First is a desire of some of the customers that we provide fulfillment services for through our supply chain solutions group. [They] have approached our supply chain group and said ‘how can you help me meet my retail trading partner compliance needs in January 2005?’ So our SCS group has engaged with a number of customers in helping them come up with solutions. The second source of pilots has been our internal process assessment, and trying to understand how RFID can help our own processes.”

“The low cost EPC technology market is still rapidly evolving,” said Nonneman. “It’s a maturing cycle. It’s beyond very



early stage because there is operational product available, but it is still evolving. [With] any given product manufacturer you can see revisions coming out monthly and even weekly sometimes. Luckily some of the newer hardware is firmware upgradeable and it's not a throw-away investment at this point. Which is really a big thing for companies. You have to be confident that the investment you make today, is still going to be a useful investment in whatever your hardware life cycle is – somewhere between two and five years."

Asked about the state of the EPC standards, Nonneman responded, "There are revisions coming out. Improvements, I'll call them extensions, to the standard that a lot of the manufacturers continue to make to improve the performance of their products and help differentiate themselves in the marketplace. That's certainly something that we need to manage ourselves, because we can't waste a lot of time re-testing new equipment because there's a new standard. [You] have to make sure that before you put something new in place that it's not going to disrupt current processes you have."

Immaturity Coupled with Mandates

The picture that is painted is one of immature technology and standards that are still moving targets. But this is coupled with the pressure of mandates that require some companies to deploy RFID solutions as soon as January 2005. The state of the technology, and the amount of learning that still remains for companies to deploy it successfully, has led some to wonder if the mandates will be delayed. Both Ajit Kambal and Bob Nonneman think they won't be relaxed much, if at all.

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“The mandates are very important in having focused attention on [RFID],” said Kambal, “and in getting everybody to initiate the projects to learn how to use [RFID] and to initiate the transition to it. They were very crucial, showed real leadership in the marketplace, and a real commitment to making this transition happen to the next level. The real challenge now is for all of [those] who haven't been engaged with the technology for so long to learn the technology, to learn how to really use it in their context.”

“I believe that the initiatives that are out there today will continue to follow the timelines that have been established,” said Nonneman. “I know there's a lot of talk about unrealistic expectations and shifting in priorities or people backing off timelines. I think there's not a lot of fact behind that. The guidelines that have been delivered from the companies that are moving these initiatives forward are flexible, have always been, have left a lot up to the technology providers and the suppliers to find the best fit for themselves.”

“I don't think that 100% of cases and palates on 100% of the SKUs on 100% of the items that are shipped from some large CPG vendors will be tagged January first,” said Nonneman. “Obviously that's not going to happen. There's going to be some level of agreement as to how much needs to be done to

facilitate the learning. There's a great deal of work and evolution to go on to take RFID EPC and bring it to mainstream within a company's supply chain processes. But I don't believe that's what is being requested January 1, 2005.”

Finding the Value Propositions

Both the survey results, and UPS's interactions with customers show that the value propositions for RFID are different for different types of companies. And both Kambal and Nonneman indicate that companies should look beyond the technology to find their company's value propositions. “There's a difference in the value propositions between retailers and manufacturers and people in the middle of the supply chain,” said Nonneman. “But they're all driven toward one final thing which is better visibility to improve a number of pain points within the supply chain like product obsolescence, shrink, and out of stock conditions, which are the big pay-back items long term.”

But just tacking on RFID isn't likely to return that value. “That better visibility is not just going to come from putting tags on cases and palates,” said Nonneman. “It's going to come from new and better practices in exchanging information between trading partners. And those are the components of the EPC network that really have a great deal of maturing to do yet.”

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“Advice that I share with some of the other companies that we collaborate with is to get out of the lab and into the real environment,” said Nonneman. “Testing in the lab can show you the capabilities and some level of performance, but how RFID technology can impact people, processes, facilities, and systems can really only be assessed out in a real world environment – or at least as close to a real world environment as you can create.

Summary

The EPC RFID technology is not mature. The standards aren’t finalized yet so interoperability isn’t a reality either. Most companies wouldn’t be looking to deploy RFID at this time if not for the mandates. But the mandates are here, and everyone involved seems to think they

aren’t going to be relaxed much, if at all. So the average affected company is budgeting about \$500,000 to fund pilot studies to get up to speed this year, and they are probably hoping that things will get much clearer by January.

It is hard to see how this all turns out without bumps along the way, but those involved remain quite optimistic. “Our analysis shows that RFID is a transformative technology for the retail and supplier industries,” said Kambal, “with the capacity to synchronize business processes and efficiencies across the supply chain. Though the general industry expectation of increased revenues in the first five years of RFID implementation is low, it is only a matter of time before all industry participants realize its overarching benefit

of supply chain visibility and improved business processes, which ultimately leads to an enhanced customer experience.”

“I’m certain there will be some things out there that people hadn’t anticipated,” said Nonneman, “but I know that the group of people who are trying to move it forward are dedicated. They have a lot of resources allocated, and are committed to continuing to see progress.”

The RFID train is in motion, but the ride looks like it will be an adventure. Today, a majority of companies seem to still be hoping someone else will go on the adventure and then tell them how to do it, but it will be those that do their own pilots and gain internal knowledge that will have the best results. ■