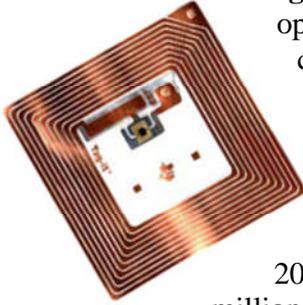# RFID NEWS
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ET TRENDS

MARKET & BUSINESS NEWS

Highlights - Industry analysts suggest that meaningful business opportunities are finally emerging in the RFID market. But, they are careful not to suggest that the much-anticipated "hockey stick" is apparent. That said, they are optimistic based on increasing levels of sales and ordering activity. They believe that **Gen 2** related hardware revenue will double versus 2006 and will increase by 75% - 100% in 2008. The 2008 hardware market should increase to $125 - $150-million. Even Microsoft is upbeat about the response to their software, BizTalk that has an RFID interface as an important component. The MS endorsement will fuel greater piloting of RFID. Previously, Microsoft and Intel have taken a less prominent role in promoting the technology. There is increasing interest from the apparel and Pharma markets. Apparel pilots are on the rise and several vendors that seem particularly excited. In addition to the Marks and Spencer rollout, Metro, Dillard's, Levi's and New Balance are piloting. There are over 22-billion garments and shoes are shipped worldwide each year, so this is a big potential for RFID. There is an increasing opportunity in Pharma, where the distributors are moving forward with RFID. While manufacturers will be slow to follow, there is see increased activity. Domino and HIDE-Pack introduced a system to add RFID inlays directly on corrugate boxes and this can provide a strong value proposition to high-volume supply chain participants desiring to place RFID on their products. The solution will eliminate upfront "print and apply" capital costs and reduce labor necessary to place RFID tags on a box. The system has already been tested to run at line speeds of 6,000-18,000 units per hour, with no impact on "normal" throughput. Early testing has indicated that the HIDE-Pack system can reduce costs 35% versus hand-applying a label. Source: Baird.

More RFID startups - Evidencing the growing support for RFID technology in the larger tech and financial industries, Tego Inc. (Waltham, MA) a fabless developer of high-memory passive RFID tag products, has closed a $6 million Series A investment led by asset management and wealth advisory firm Bainco International Investors. Tego, founded in 2005, will use the funds for development and commercialization of a technology it is developing that will be initially launched for the aerospace industry. The company said it plans to bring its products to market over the next year. The company a see tremendous market opportunity for high memory, passive RFID tag solutions. "The aerospace industry is just the beginning. Source: EDN
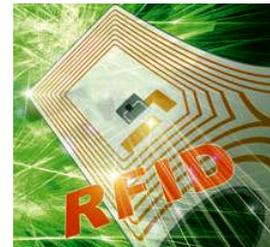
French National RFID Center - French Minister of State highlighted the Government's intention to accelerate the development of RFID technology in France with the creation of a national RFID center. The center, with a seed budget of $2.82-million, aims to coordinate national development and promotion efforts of RFID technology. It will help develop, master and integrate RFID technology into products. The center will focus on tests and R&D activities, will offer training and consulting services, and could employ about a dozen people. Seeking to "give RFID innovation a significant boost," an initial call for applications would be launched in November, followed by a second call early 2008. The French government will support collaborative R&D projects between RFID developers and users. Source: Design Line.

Wal-Mart Effect - Wal-Mart could increase sales by $287-million by fixing just a small portion of its inventory problems using RFID) technology and that could be just the star. The world's largest retailer, with $345 billion in sales last year, is gearing up to roll out the RFID gear to make that prediction a reality in its 4,068 North American stores. The key behind it all is making sure RFID tags are installed on all products and using a forklift with RFID equipment installed to show the driver exactly where merchandise is inside store warehouses. The company is widely seen as one of the world's top drivers of RFID technology, but it has had some missteps. It missed a goal last year of installing RFID technology in 12 of 137 distribution centers, and an April target to have RFID technology in place at 1,000 retail stores. So far, it has RFID installed in 975 stores. Wal-Mart started working with RFID in 2003 and expects the first major rollout of the technology, the RFID tags and forklifts at U.S. and Canadian retail stores, to solve inventory problems. The inability to find certain merchandise when it is needed causes several headaches. For one, the sprawling store warehouses can take hours to search, and once an item is found, the customer may not be waiting around for it anymore, translating into a lost sale for the company. Often, a pallet with the items being sought is tucked away in some remote corner of the storage area, but if it's missed, then not only is the sale lost, the searcher will normally order more of the product to avoid further lost sales. By sticking RFID tags on products, the company is able to locate them wherever they are, and quickly.
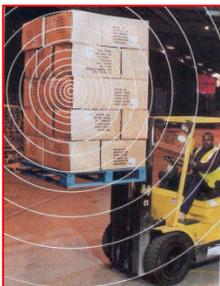
Once the system is installed in every Wal-Mart in the U.S. and Canada, it could have a huge impact on ridding the company of lost sales. Currently, around 2% of all lost sales are due to the simple fact a store has run out of an item, but 41% of lost sales are due to inventory problems. If RFID can fix just 10% of that problem, then Wal-Mart will gain $287-million per year by avoiding lost sales. Wal-Mart expects RFID to have a bigger impact on the company than bar codes did when that technology was introduced in 1984. Bar codes

enabled the company to improve inventory control and better track customer buying habits. By tracking bar-code readings at the checkout counter, Wal-Mart found that some people regularly purchased two or three packages of the same item. Wal-Mart took that data to the makers of such products and encouraged them to offer bigger packages of their items, so people didn't have to buy so many single items. In the end, that leads to savings for suppliers (less packaging) and customers (buying in bulk). So far, 600 of its top suppliers have started using RFID tags at their own expense, in order to comply with Wal-Mart's initiative. Some of these suppliers have found their own inventory cost savings, but others haven't.

TECHNOLOGY & PRODUCTS

RFID Software Impact - Recently, Microsoft in partnership with Intel and Hewlett-Packard (NYSE: HPQ), unveiled BizTalk, a software platform that provides for the scalable development, deployment, and management of RFID and sensors solutions. Also included in the partnership were a host of other RFID hardware companies, including Alien Technologies, Impinj, Motorola, Printronix and Zebra Technologies. According to RFID Update, Microsoft's entry into the RFID field was a "watershed moment" because it was purported to lower the cost of implementing an RFID software solution by "a factor of ten." By reducing the price to the neighborhood of $5,000, it is now expected that a number of smaller and medium-sized businesses will now be receptive to implementing the technology. Not to be outdone by Microsoft, IBM called for the use of open standards in RFID solutions. Interestingly, IBM is also working with many of the same hardware providers as Microsoft. It is too soon to determine whether Microsoft's software or an open-source movement will ultimately prevail in the RFID arena. But it's becoming increasingly clear that, after years of hype, RFID technology is moving into the mainstream. This is great news for RFID hardware providers, because improved software will make these companies' technologies that much more accessible and useful for their customers. According to AIM Global, a trade association representing the automatic identification industry, investors might soon be seeing more real-world uses of RFID technology in hospitals, airports (for tracking baggage), and possibly even in the area of digital cash. Source: Motley Fool.

RFID Software for Agriculture - The development of a new RFID software system offers the fresh food industry an unprecedented level of monitoring and traceability, to ensure safety is retained from the farm to the fork, its manufacturer claims. Insync Software says the increased availability of its Greentrace Food Safety Solution for fresh food will allow processors to combat the risk of contamination through the food

chain effecting product quality and output. As stricter laws force companies to invest in ways of tracking the food they sell, RFID is becoming a necessity not only for large, international companies, but also for any farmers or manufacturers involved in the product's development. The technology uses RFID, GPS and a number of sensors like scales to monitor changes within food that occur during harvesting, processing, storage and distribution, according to Insync. Beginning at the farmyard, the company says that the system allows workers to tag individual harvest bins using GPS-enabled RFID handheld readers. As the tagged bins make their way through the food production cycle, data is processed in real time to ensure that companies are aware of the location, product status and condition their ingredients are in, Insync adds. This data makes use of the group's Edgeware technology to monitor a number of conditions including weight and temperature. According to the company, as the food is tracked through a specific user defined route, any deviations relating to time, temperature or other quality factors send out real-time alerts to processors relating to a products location. The system is also capable of detailing the area from which any of its products were originally sourced. This feature, Insync says, ensures that manufacturers are able to rapidly carry out identification and possible recalls of contaminated lots, as well as preventing any further difficulties in their operations. Source: Nutra.

Indirect Antenna RFID - Murata developed the Magic Strap, an RFID IC that can be used without being electrically connected with an external antenna. The RFID tag can be created simply by attaching the IC to an external antenna with common insulating adhesive, etc. A built-in antenna used for the communication in an extremely short range is provided on a substrate of the package sealing the IC, and this antenna establishes wireless communications with the external antenna. Thus, the external antenna and the IC are not required to be electrically connected with each other. The latest IC is operable on a frequency band at 820-980 MHz, hence supporting all the frequency bands used for the RFID application in Europe, United States and Japan. The existing RFID ICs must be installed in different positions on the external antenna in order to support different frequency bands. The new IC, however, eliminates the need for changing the installation position because the applicable frequency band is wider. According to the company, the latest IC also prevents a problem of reduction in the read-out distance due to the deviation of the center frequency caused by attaching the tag on a dielectric material such as a container made of polypropylene. In addition, the IC reportedly contributes to the reduction of the assembly cost of RFID tag because the positional accuracy between the IC and the external antenna may be on the order of only several millimeters. The existing products have a problem of high assembly cost due to the conductive adhesive used to connect the IC with the antenna, and the positional accuracy that has to be on the order of several microns. The prototype RFID IC measures 3.2 x 1.6 x 0.5 mm. Customers do not have to worry about matching the impedance because the IC package substrate matches the impedance between the IC and the antenna, the company said. Initially, Murata is preparing to mass produce one model, the so-called 3216-size product, which is similar to the prototype. The company intends to further reduce the size and cost, aiming for volume production from January 2008. Source: TechOn.

APPLICATIONS

RFID at Information on Demand Conference - IBM is deploying RFID technology on nametags worn by attendees that automatically tracks their session and meal attendance. This is the first time that IBM has used RFID technology at this conference and the company is not making a secret of it. There are signs at the registration desk offering attendees the option of getting a nametag without the chip. Of the 6,500 people here, ~ 2% didn't want a nametag with an RFID chip in it [the interlopers?]; same information as on the paper name tag. The chip's 24-character identifier includes the name, title and company of the person wearing it. There is no other personal information on the chip. As a person walks through the door leading into a conference session, an RFID receiver logs the chip's data. The system, by AllianceTech in Austin, Texas, is networked and the data is received in real-time by its on-site systems at the conference. The data will be used to help organizers with future conference planning, such as optimizing sessions around interests and demands of conference attendees. It will also let organizers know the number of people who have received meals so organizer can plan meals in such a way that food is available at the right time. Because the RFID keeps count of people getting meals at the conference, it creates a means to audit and help control conference costs. The real-time aspects of the system help with day-to-day conference management. If a room gets filled to capacity, a decision can be made to repeat the session. If a person needs to be reached in an emergency, they can be located. Many conferences already track who enters sessions by scanning bar codes on name badges, but RFID allows people to enter a room immediately. IBM isn't certain how far they'll take RFID at conferences, but there is huge business potential. Source: PC World.

RFID-based SMT Reel ID - Cogiscan, with partners, Fuji, Juki and Siemens, will be showing the first version of their RFID Smart Reel Detection system at Productronica. The project uses RFID technology on reels of electronic components to complement the use of traditional barcode labels during electronic manufacturing assembly. The Smart Reel eliminates the manual scanning of reels, by being automatically associated with feeders in a machine, offline set-up area or storage location. The detection system improves traceability data and reduces errors in line set-up. Cogiscan's Smart Reel is part of an ongoing effort to define a future industry standard for RFID-based technology, aimed at reducing human errors and improving traceability. The system eliminates the manual intervention required to track and trace components in the manufacturing process, and therefore removes the potential for operator error. The Smart Reel will complement the Smart Feeder system currently being offered by

Cogiscan, but it can also be used independently. The systems together provide a total reel and feeder tracking solution, but in cases where a machine already has an intelligent feeder solution, the Smart Reel can further automate the overall data acquisition process. Source: EMS Now.

Dallas Cowboys and RFID - The new enterprise resource planning (ERP) system being planned for the Dallas Cowboys will use RFID for their sporting franchise business. The revenue that contributes to that value is split across roughly 30 different businesses, including the football club itself and companies that do merchandising, oil and gas, and storage. A big part of the reason for the ERP is to better manage such a complex portfolio of revenue streams. They are considering using RFID in a number of areas, particularly inventory visibility and contactless ticketing. Improved inventorying will be especially important for the new stadium, slated to open in 2009 with seating capacity of 80,000. Their new stadium is three times the size of the current Texas Stadium and anything done with RFID will be important considering the size and magnitude. They've been able to do a pilot for inventory accounts and found that RFID chips cut down on our account cycle time by 87%. RFID-enabled merchandising should go live next month and will be reported to the franchise owners by March of 2008. In terms of ticketing, they are evaluating how RFID could yield better data about fans and patrons and if there is value in being able to download a ticket on a PDA or a season ticket holder card where an RFID chip passes a turnstile and it knows who the customer is what seat they have. But they will also have to contend with privacy concerns from fans that could chafe at feeling tracked within the stadium. But there is a precedent for RFID ticketing to sporting events; the 2006 World Cup in Germany used over 3-million tickets with embedded RFID chip from Philips. Source e-Week.

Item-Level Tags - Metro began a retail item-level pilot at one of its Galeria Kaufhof stores in Essen, Germany during September. The pilot will focus on the menswear department, which we understand processes roughly 10,000 garments per month per store. Product will be tagged at the Metro distribution center and will be scanned at store receipt and receipt in the menswear department. In addition to tracking receipt of inventory and back room operations, the pilot will also include Smart Shelves, Smart Mirrors, aisle readers, fixed and handheld readers throughout the store, and RFID-based point-of-sale terminals. This infrastructure will provide customers with size, styling and other garment information and will allow the store better access to merchandising information. Impinj, Reva and Checkpoint Systems are providing the key infrastructure for the pilot. Metro expects this phase will run until mid2008. Source: Baird.

Dillard's RFID Pilot Program - Dillard will begin an item-level RFID tagging pilot in stores this month. The pilot will consist of certain styles of merchandise being marked with RFID-enabled tags. The RFID/EPC

(Electronic Product Code) tags function like an intelligent barcode and contain only the Electronic Product Code unique to each garment. The tags are designed to be removed at the time of purchase. They are not required in the event that the customer wishes to return the garment. No link will be made between the garment information held by the tag and the customer's personal information. These new tags will enable store associates to perform more frequent inventory counts on merchandise, with the ultimate goal of more timely replenishment of out-of-stocks. The use of RFID technology can enable us to provide an even higher-level service to our customers by enhancing our ability to have the right product available at the right time while providing us even more accurate information from our inventory control system.
Source: Dillard's

DVDs - EPCglobal is conducting a pilot on the benefits of individual DVD tagging in

conjunction with 20th Century Fox, Cinram, Sony Pictures Home Entertainment, Technicolor, and Warner Home Video as well as Best Buy and Wal-Mart. Approximately 12,000 DVDs of 15 movie titles will be tagged and used to test improvements in inventory levels, customer service and whether particular titles are more quickly found by employees or customers. Tags will be applied at the time of shrink-wrapping and read upon leaving the manufacturing facility, entering the retail facility and when placed on shelves. The pilot will conclude in November. Recall, in a single store pilot that took place earlier this year, Best Buy indicated that tagging DVDs with RFID technology helped to increase revenue by over 20% and operating profit by over 10%.Source: Baird.

In-Factory RFID - OATSystems announced that it has installed its Asset Tracking and

Work-in-Process Solution at Hewlett-Packard Brazil and Tesco. The software is designed to increase asset visibility and supply chain efficiency and to improve manufacturing proces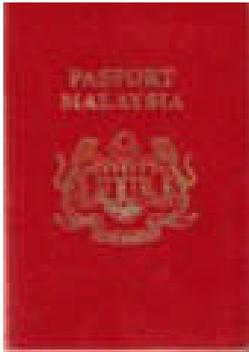ses. According to OATSystems, HP Brazil reported that OATSystems' solution enabled a 17% printer inventory reduction by increasing supply chain visibility. In a related announcement, OATSystems announced a new channel program to market its new software solution. OATSystems has signed up vendors Avery Dennison, IBM, and Tyco Electronics along with system integrators Domino ISG, Miles Technologies and Rush Tracking Systems as part of its OATEdge program. Source: Baird.
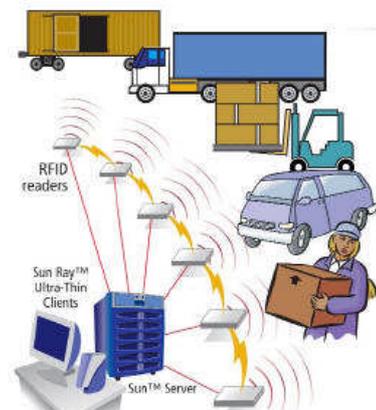
Active RFID - The Ports of Los Angeles and Long Beach will require trucks entering secure areas at the

ports to be equipped with RFID-tags as part of its TruckTag program. Active, battery-powered tags are needed to get the range up to a useful level. The program, implemented by PierPASS, will equip approximately 17,000 trucks with devices similar to toll tags that will grant access to particular trucks as well as record entry and exit times and places. The two adjacent ports process about 40% of the country's imports and 24% of exports. Source: Baird.

RFID in Malay Visas - Malaysia has decided to issue millions of foreign workers, students and long-staying visitors with visas embedded with microchips to help its immigration authorities. The chip-based visa which used RFID microchips would contain the foreigner's personal details and thumbprints. They hope to introduce this in stages by the end of this year and the system is currently being tested on Bangladeshi foreign workers. The visitor's thumbprints and other details are scanned and stored into the computer system in the country of origin and transferred to Kuala Lumpur immigration when the visitors apply for a work permits. When they enter Malaysia, their scanned thumbprint and other details would be matched against our central database. No match, the person is deported. The chip-based visa in the form of a sticker will reduce forgery and improve enforcement work as immigration officers carrying out inspections at work sites could instantaneously retrieve data using chip readers. There are over two million foreign workers and another 66,000 students in the country while the tourist arrivals last year touched 17-million. Source: Economic Times.