

# As RFID tracking booms, privacy issues loom

**RFID is a brilliant idea for business -- but a lousy one for people. Using the wireless chips the wrong way will just slow down the growth of the market.**

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As a business, you want to keep track of your inventory. But as an individual, you don't want anyone keeping track of you.

These two home truths explain why the long-promised RFID revolution is finally starting to gather steam -- and why it could be quickly derailed by a growing suspicion of how both governments and terrorists could misuse the technology.

RFID stands for radio frequency identification, and it's already a \$650 million industry. ABI Research expects the market to more than triple, to \$2.1 billion, by 2011.

The technology uses tiny radio transmitter chips, or "tags," that can be inserted in a pallet full of goods, a pair of jeans, or a passport. Think of them as like barcodes -- only much, much more efficient: A special reader can scan hundreds of chips in a single pass. For everything from locating a valuable package to conducting routine inventory, RFID is a godsend.

Wal-Mart (Charts, Fortune 500) made waves four years ago when it announced that it would be requiring its many thousands of suppliers to switch to RFID. When Wal-Mart says jump, manufacturers usually hop to it.

## **A radical Dewey Decimal System for books**

In the case of RFID, however, this hasn't happened quite as fast as the retailer expected, prompting many stories in the press that suggested RFID technology was going the way of Betamax. Less than 5% of the giant retailer's suppliers are currently using it.

Even so, the Bentonville behemoth remains bullish on RFID. It already uses the technology in a thousand of its stores, and announced last week that it would be adding 400 more. The average price of a tag has dropped below \$.10, which is 50% cheaper than when Wal-Mart began. The company estimates it has saved \$100 million so far, just by knowing where its inventory is at all times.

And suppliers that did invest in RFID have found the stories that it tells to be very useful. For example, Kimberly-Clark (Charts, Fortune 500), the company behind Depend diapers, found that roughly half of Wal-Mart's stores weren't rolling out a Depend promotion as fast as they

had promised -- and those that didn't execute on time reported lower sales. Bentonville beware: RFID works both ways.

Other retailers are also claiming success. Best Buy (Charts, Fortune 500) is reporting 18% higher DVD sales in the stores that are part of its RFID test project, which makes sense: RFID can help replenish hit movies as fast as they sell, as opposed to when store employees get around to checking inventory.

And Staples (Charts, Fortune 500), in its own test, reduced the time it takes to process a new delivery of goods from 18 minutes to less than three. Time is money, especially in the warehouse.

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Meanwhile, the infrastructure is falling into place. Alien Technology, a leading RFID supplier, recently released a vastly improved second-generation of RFID products. Last week, Microsoft (Charts, Fortune 500) unveiled an early version of its backend software, BizTalk Server, which supports RFID. German giant SAP (Charts) already has more than 250 customers on its RFID platform.

Then there's China: more than a hundred companies have cropped up in that country to implement RFID, and Research and Markets estimates that Chinese suppliers' demand for RFID tags will hit 5 billion units in the next three years.

Despite the explosive growth, there are signs of a growing backlash against RFID. Most consumers are just starting to learn about the technology, often when they get their new passport or credit card. Visa, Master Card, and American Express are in the process of converting their more than 3 billion cards to a pay-by-RFID technology; more than 150,000 readers have already been installed everywhere from gas stations to the New York City subway. All U.S. passports, too, are now being issued with a special government mandated RFID chip, and according to the Real ID Act of 2005, state-issued IDs such as drivers' licenses aren't far behind.

But any attempt to link RFID with individuals has so far been faced with opposition. Why? The technology is seen as vulnerable. You can buy parts to make an RFID reader for as little as \$20. Unscrupulous vendors could, in theory, drain money from your credit card without your knowledge. Terrorists could prime a bomb to go off when a particular individual walks past it, as London's Royal Academy of Engineering claimed last month. The security software in both U.S. and U.K. passports has already been hacked. And there is a mother of a battle brewing over Real ID. On Sunday, Massachusetts became the second state after Maine to officially refuse to sign on.

## **Can HP save the DVD?**

It's fairly easy to disable RFID. As hundreds of websites will tell you, you need only accidentally drop a hammer on your new passport to render its chip unreadable. (You would, of course, be committing a federal crime if you intended to do so, but accidents do happen.) Last week a graduate student in Amsterdam unveiled the RFID Guardian, a portable, battery-powered device that can jam individual RFID tags -- the first device to allow such a thing. Call it the personal privacy firewall.

The backlash can and has spilled over into the retail world. Both Levi's and Procter & Gamble (Charts, Fortune 500) faced public relations nightmares over their RFID projects: One put the chip in jeans, the other tagged individual razor blades. The intent was to track items, not people, but both experiments provoked calls for boycotts.

British retailer Tesco faced similar criticism when it rigged up an RFID system to take pictures of anyone picking up items in the store that were often stolen. This Big Brother plan was quickly dropped.

A growing backlash from consumers shouldn't affect how warehouses run. But expensive experiments with consumer RFID could dent businesses' enthusiasm for the technology. That, in turn, could shrink the market and drive up prices for RFID tags and infrastructure. Analysts say that prices need to drop to five cents a tag for RFID to hit mass adoption, and anything that slows us down from reaching that milestone will hurt the spread of RFID.

RFID is a boon for business and a nightmare for personal privacy. That distinction needs to be drawn clearly, and it needs to be drawn now.

If Wal-Mart could only dissuade the U.S. government and credit-card companies from using the technology as fast as it is persuading its suppliers to deploy it, everyone would be happy.