

Now the Hard Part

Despite all of the excitement about low-cost RFID tags, the biggest challenge is creating the IT infrastructure.

Jan. 13, 2003 - Low-cost UHF tags from Alien Technology and Matrics are about to hit the market. Other chipmakers will soon introduce their own UHF products. And a number of hardware manufacturers are working on multi-frequency, multi-protocol readers that can pick up the Auto-ID Center's Electronic Product Code (EPC). So now we're all set for the RFID revolution, right?

Not quite.

The biggest obstacle to widespread adoption of the Auto-ID Center's technology is going to be the backend infrastructure. The three key components being developed by the center are: Savants, software that manages data from the readers; the Object Name Service (ONS), which points computers to information about products that are identified; and the Physical Markup Language (PML), which enables computers to understand some basic properties of physical objects.

ONS seems to be working well, but the Physical Markup Language is a very difficult challenge. There is, ultimately, no way to create a global computer language for describing every object on earth. So PML will have to evolve over time. The center has taken a sensible approach. It is trying to create a foundation that industry organizations can build on, since each industry has its own requirements. Given the slow progress we've seen with industries trying to create standards for sharing data over the Web, PML is going to take years to reach maturity.

That leaves the Savants, distributed software that acts as the nervous system of the EPC network. I've heard some criticism of the Savants. One Auto-ID Center sponsor disparaged it as "software written by university students." In this week's feature, [Sun Shines on Automatic-ID](#), Dirk Heyman talks about how Sun Microsystems is testing the Savant's ability to scale and to secure the data. Heyman is not only chairman of the Auto-ID Center's technology board; he's also the global head of Sun's consumer goods industry segment, so he has an excellent perspective on the issue.

Even if Savants work flawlessly, companies face huge challenges in managing the data flowing from readers through the Savants. A massive amount of data has to be archived, so that it can be retrieved in case a product needs to be recalled. Companies will also need to integrate RFID systems with their existing IT systems. Some software already exist to make this possible. Savi Technology's "SmartChain" platform gathers and manages data from virtually any automatic identification device added to a network. Savi has also created an integration module that is certified by SAP.

But for the most part, this area has largely been ignored. That's no surprise. There just haven't been enough big RFID installations to make it worthwhile for big software vendors to focus on managing the data and creating the links to back-end systems. That means early adopters will incur extra costs to integrate RFID systems, which will slow adoption.

My fear is that we're going to repeat the same mistakes that occurred during the Internet-mania of the late 1990s. At that time, Internet software vendors told established companies that all they had to do was throw up a Web site, let your customers place their orders themselves, and you cut your order-processing costs by 90 percent. Many companies bought into the hype, but found it wasn't that simple. Now, many CEOs would rather spend their money on other things besides technology.

Installing readers, putting tags on items and reading the tags is not that difficult. Turning data from tags and readers into information that companies can use to improve the way they do business is the real challenge. It's good that companies are beginning to learn about low-cost RFID. And I absolutely believe that when done right, RFID systems can bring important benefits to both the top and bottom lines. But I hope that the focus now shifts away from the price of the tags and readers and towards the issue of turning data into information that can be acted on. Because that's the hard part.

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