



**MANAGEMENT**

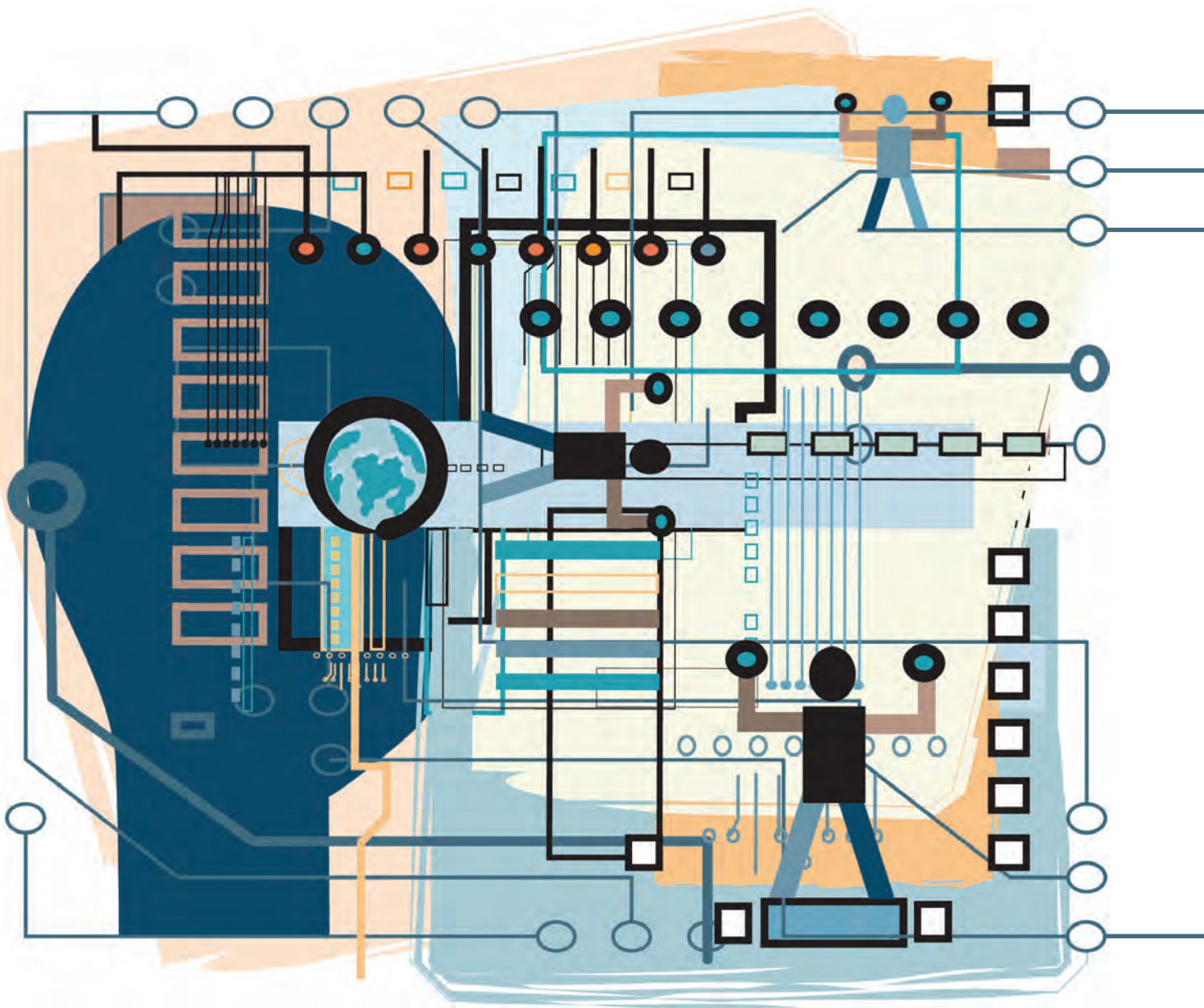
# Choosing the **Right** Systems Integrator

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# Choosing the Right

By Mary Catherine O'Connor

Brian Foster had a problem. As IT manager for Bradshaw International, a distributor of Good Cook brand and private-label kitchenware to Wal-Mart, Albertsons and many other large retailers, it was his job to ensure that his company could meet Wal-Mart's mandate to put RFID tags on pallets and cases by January 2005. Bradshaw isn't among Wal-Mart's top 100 suppliers and wasn't required to do so, but the company wanted to steal a march on its competitors, show Wal-Mart its interest in embracing RFID and explore how the technology could streamline its own internal operations.



# Systems Integrator

Foster had made up his mind that he did not want to deploy a new software platform to run the RFID tagging system. He wanted to integrate the RFID system with Axiom, the warehouse management system (WMS) that Bradshaw has been using since 1997, before it was commercialized. Foster attended conferences and seminars to meet RFID systems integrators with experience deploying RFID programs.

“The vendors all told me, ‘We have RFID in a box,’” Foster says, “but it didn’t seem like any of them had a complete solution that would tie into our WMS system.”

Bradshaw’s existing IT architecture. “He would learn our business and understand the system we had in place,” says Foster

Kurschner and his team set up a tagging system that included a Printronix RFID label printer and a SAMSys reader and worked closely with Bradshaw’s programmer to link the system to Axiom, through an SQL server database. As tags on cases are read, they’re checked against purchase orders stored in the WMS. No separate middleware is needed, nor will one be needed as Bradshaw scales up its tagging operation.

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**There are many companies that will help you with your RFID pilot or deployment, but finding the best one requires matching your needs to the firm’s capabilities.**

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That was a sticking point. If he couldn’t find a company willing to work with Bradshaw to integrate the RFID system with Axiom, Foster was willing to proceed without a systems integrator. (For more on working without an integrator, see “Going It Alone” on page 43.)

Then Foster did an online search for systems integrators with offices near Bradshaw’s Rancho Cucamonga, Calif., location and found MobileXe, a six-person firm in Rancho Palos Verdes, just 75 miles away. Foster interviewed Jeffrey Kurschner, CEO of MobileXe, and liked that he had extensive experience integrating RFID and bar code data into enterprise software systems, including those from Oracle and SAP. But Foster knew he had the right company when Kurschner said he was willing to work with

The system took four months to deploy and cost less than \$50,000. Bradshaw is now tagging roughly 2,000 cases of 17 different kitchenware products it ships to Wal-Mart each week. Bradshaw expects to be able to do a better job of meeting demand for its products—especially seasonal items, such as holiday-themed cookie cutters, which have a short selling window—because Wal-Mart is providing information on the movement of the products from its distribution center to the back of stores to the retail floor, through its Retail Link supplier extranet.

For Foster, it paid off to stick to his guns until he found a partner that would integrate RFID data with the Axiom WMS. He saved money on the deployment by not using middleware and now says he has an understanding of the RFID



system, since he worked side by side with MobileXe while the integration work was being done.

Whether you're deploying RFID to meet a retailer or government mandate, or to improve efficiencies within your own company, a good systems integrator can provide the technical and/or business expertise you need. But, as Foster learned, finding the right systems integrator isn't always easy.

RFID systems integrators provide a range of services, from simple slap-and-ship solutions to hardware and software selection and/or installation, product testing, integration of RFID data into enterprise software and warehouse management systems, project management and business case development. But not every systems integrator offers all of these services. Some have strengths in a specific area, such as data integration or hardware testing, while others have deep experience in vertical industries, such as commercial aviation or healthcare.

The ideal systems integrator would help you define the business case for deploying RFID, reengineer business processes, install the readers, advise on how to tag products or assets, and integrate the data from the RFID system to support the new business processes. Today, there are very few systems integrators that do it all. The key to picking the right systems integrator lies in matching your current and future needs with the systems integrator's skills and capabilities. With that in mind, we offer an overview of the RFID systems integrator landscape, based on the types of Electronic Product Code deployments companies are currently undertaking.

### Quickest Fix: Slap-and-Ship Packages

Many suppliers that were required by Target, Wal-Mart and other retailers to put RFID tags on pallets and cases this year adopted a simple approach—apply the RFID tag, verify it works and send the shipment off. This slap-and-ship approach was a way to achieve compliance

with the least amount of cost and without disrupting shipping operations. Most RFID systems integrators should be able to help you devise a slap-and-ship system.

Many U.S. companies, including Acsis, Catalyst, Enterprise Information Systems, InfinID Technologies, HK Systems, Markem, OATSystems, RedPrairie, Venture Research and Xterprise, now sell bundled compliance packages that include tags, readers, software and installation services. Some of these companies are systems integrators that have pulled together software and hardware components; others, such as OATSystems and RedPrairie, are software providers that have added hardware to their software platforms.

Packages are attractive because they allow you to get everything you need from a single technology partner. The integrator has probably installed the system before and can do so again with few hassles. The downside of going with an RFID compliance package is that RFID isn't a one-size-fits-all technology. If you have a challenging environment—say, a lot of electromagnetic interference in your facility—or your products have high water content or are made of metal, they will be hard to tag properly, and your systems integrator might not be equipped to solve those problems.

Relatively few integrators approach deployments largely through the lens of the physics of RFID. Two U.S. companies that do are ODIN Technologies and Integral RFID. Both offer bundled testing services using proprietary software to determine the best hardware systems for your particular needs. And both will conduct site assessments, test tags and readers, and find the best hardware for your application.

GTSI, one of the largest providers of IT equipment and services to the U.S. government, was among the first U.S. Department of Defense suppliers to fall under the agency's tagging mandate. When Scott Decker, senior director of distribution and integration services at the Chantilly, Va., company, set out to

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## Going It Alone

Hampton Products International, a privately held manufacturer of locks and lighting fixtures located in Foothill Ranch, Calif., met Wal-Mart's RFID mandate two years ahead of schedule—and it accomplished this daunting task without the help of a systems integrator. The company made the decision to move on RFID early because it saw a competitive advantage in doing so. "We'll benefit sooner from the efficiencies created by RFID, primarily in learning how to use the data to better manage the supply chain," says Brian Millsap, the company's vice president and CIO.

But why go it alone? "I might never have an opportunity like this again," says Millsap, who likes a challenge. "We really want to own RFID, and I have a talented staff that's not afraid and was eager to learn about the technology."

This decision was also based on Hampton's long-term objectives. "There weren't any integrators who could really prove to me that they had something that would last a long time," Millsap explains. "I was considering whether I'd be able to comply with whatever Wal-Mart might come up with or what other customers might come up with, and be able to absorb Gen 2 tags, different iterations of tags and readers, all of those things, and I didn't want to pay an integrator to keep coming back. I wanted to be able to make those changes."

To that end, Millsap assembled a cross-functional team—which included representatives from Hampton's shipping, warehouse, global supply, operations, research and development, and sales departments—to explore the benefits of RFID. He also devoted a significant amount of his own time to bonding up on RFID. "I went to local RFID boot camps and read everything I could find on the topic for about six months," he says.

Then he and his IT staff got to work. They purchased tags and readers, set up a testing area, figured out the best placement for each tag on each case of product, and designed the manual slap-and-ship operation. It took five months to create and deploy the system.

Millsap admits they had some help along the way. The company purchased RFID labels and printers from Avery Dennison, readers from Symbol and middleware from ConnecTerra. "Even though I didn't hire ConnecTerra as a systems integrator, they really saw it as a partnership with

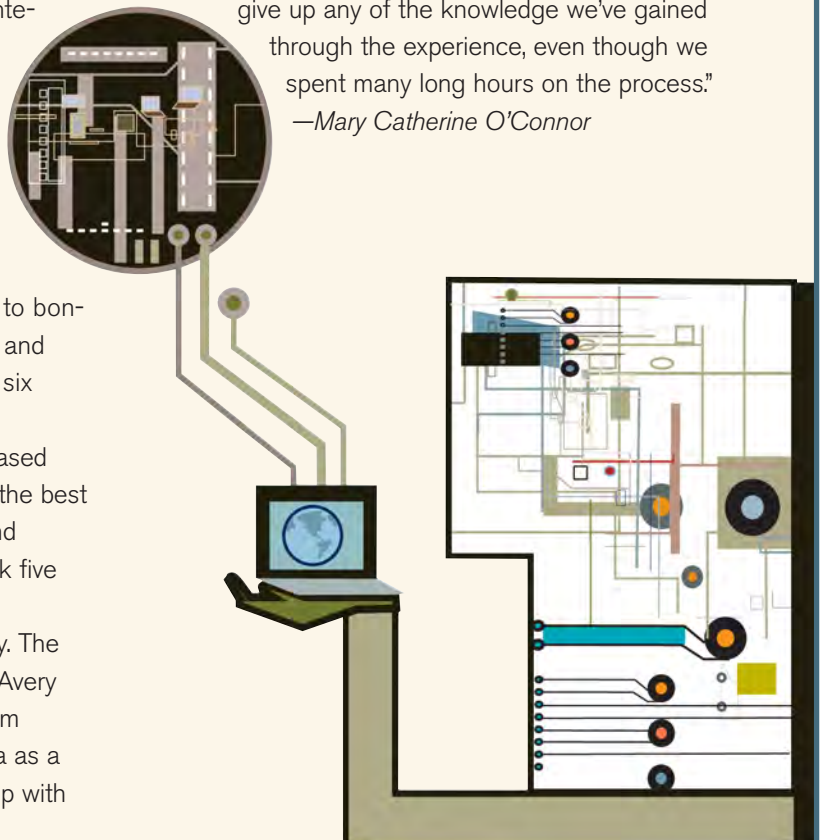
us," he says. "And it was the same way with Avery Dennison. They really spent time with us."

Since Dec. 28, 2004, Hampton has been shipping 3,000 tagged cases per week of 170 stock-keeping units—all of the products it sells to Wal-Mart—to the retailer's Sanger, Texas, distribution center. Hampton is reaping early benefits through faster order reconciliation and better inventory visibility. Now, the company is in the process of automating its tagging system.

Millsap doesn't recommend his path to everyone, however. Hampton has just one distribution center and one enterprise resource planning system. He believes that larger companies with multiple distribution centers and enterprise-wide software platforms could have a harder time developing an in-house solution. He also notes that other end users might not have the kind of supportive and eager-to-learn staff as he does.

Would he do it this way again? "By doing the implementation in-house, we experienced all the pain and suffering of learning by trial and error," says Millsap. "But we all agree that the path we chose was the right one, and we wouldn't give up any of the knowledge we've gained through the experience, even though we spent many long hours on the process."

—Mary Catherine O'Connor





find a systems integrator, he looked for a firm that knew how RFID worked because he expected that much of the highly metallic equipment GTSI ships might be hard to tag. “For most everyone we talked to, RFID was part of a larger offering. ODIN seems to have more of a dedicated focus on RFID [testing tags and readers]—that’s all they do,” says Decker.

ODIN visited GTSI’s facility to assess its RF environment to see how much interference the company would encounter while trying to read tagged products. ODIN suggested hardware and middleware, conducted tests to determine the optimal tag placements on the company’s products and worked with GTSI to find the best antenna configurations for the readers. It also handled the process mapping, which described in detail how the products would be tagged, read and shipped. The system took six months to install and deploy.

## A Word of Warning

Three years ago, there were a handful of systems integrators, such as Intellident in the United Kingdom and Genesta in the United States, that focused on RFID. These were niche players—specialists that companies called in when they had an internal application RFID could address. Since Wal-Mart announced in June 2003 that it would require suppliers to put RFID tags on pallets and cases shipped to the retailer’s distribution centers and stores, the number of companies that offer RFID systems integration, either as a primary or secondary service (some RFID middleware developers also offer systems integration services), has mushroomed.

The RFID JOURNAL online vendor directory now contains several hundred companies offering integration services. Some of these companies likely have solid experience in RFID, but others are learning the ropes by working with customers. Says one systems integrator about his early RFID work: “Essentially, we were getting paid to learn.”

Before you hire an integrator, ask what pilots and actual deployments it has been responsible for, what hardware was integrated and what middleware was used. Since there’s plenty of job-hopping going on, make sure that the people responsible for the deployment are still with the company. It’s also important to check references, so you can learn, among other things, how long the project took and whether it was successful. —MCOC

## Beyond Slap-and-Ship: Data Integration

There’s very little benefit that can be achieved from putting an RFID tag on a case or pallet and shipping it off to a customer. So some companies are looking to put tags on cases in their manufacturing area and then track them through their warehouse, distribution or cross-docking facilities. But to achieve any benefits, you need to integrate the RFID data you generate into new or existing applications. That way, you can automatically create advance shipping notices, check shipments against purchase orders and so on. It will require more time and money—and the learning curve is steeper than for a slap-and-ship solution—but you can achieve a quicker return on investment by gaining visibility into your supply chain.

There are essentially two routes companies can take to integrating RFID data. One is to deploy middleware that takes data from RFID readers, filters it and transfers it to an enterprise system. The other is to integrate the data directly with your existing system. The route you choose will probably depend on your existing applications.

If you’re running applications from major players, such as U.S.-based Manhattan Associates and RedPrairie or SAP of Germany, you can use middleware that has an application program interface to your existing system. In that case, consider a systems integrator that offers such middleware—for example, Acsis for SAP users—or has experience with a particular middleware product. Or choose a middleware company, such as OATSystems, that will provide integration services.

Be sure to ask prospective integrators about the types of enterprise applications they can support. Some firms have a wider base of experience with SAP than with Oracle, or vice versa. More than 90 percent of Acsis clients, for example, run SAP back-end systems. Oracle has developed the Oracle PartnerNetwork, which includes a number of systems integrators that have tailored their services to Oracle applications.

If you’re running a home-grown or less

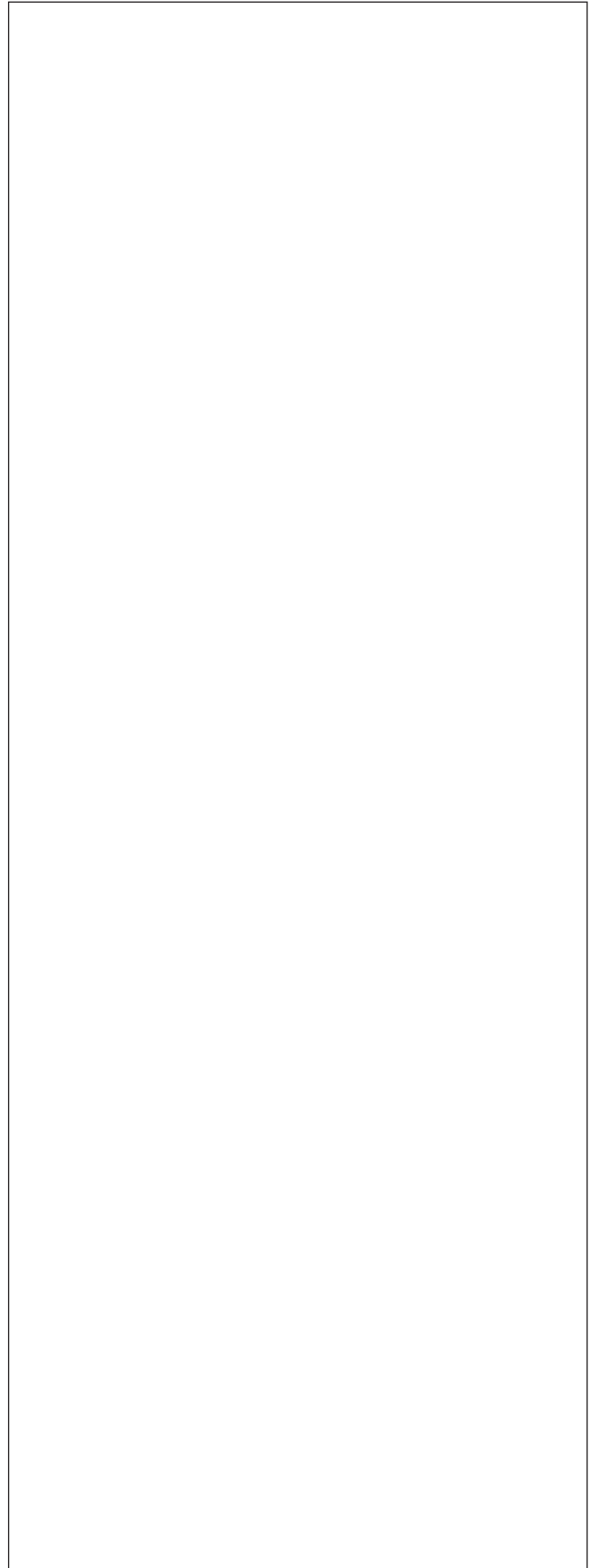
well-known application, you can use middleware and find a systems integrator that can do the integration. Or you can find a systems integrator that can write the code needed to integrate the RFID data directly with your in-house application. Either way, it's best to find a company that knows the software you already run or that has a lot of experience integrating disparate systems.

### **The End Game: Business Process Change**

The goal of any RFID deployment is to change business processes to improve efficiencies. Most integrators will work with their customers to improve business practices, but this is not their main focus. The largest integrators—Accenture, U.S.-based BearingPoint, Capgemini, IBM and so on—have business consultants who will analyze your business before starting any deployment and define business-process changes that will take advantage of RFID data.

These large integrators are able to look at their customers' operations across a country or even globally. They can also help companies integrate data and change business processes across the supply chain. Accenture, for instance, created a Jump Start group within the pharmaceutical industry and worked with manufacturers, distributors and retailers to find ways to achieve benefits across the entire industry (for more information, see "A Prescription for Pharmaceuticals" on page 33). It also worked with Best Buy and some of its suppliers to examine the potential benefits RFID could deliver in the consumer electronics industry.

Some big players also have their own software platforms that they use to integrate data with disparate back-end systems. What the large conventional systems integrators lack is a large pool of skilled technicians who can install and maintain RFID hardware. Erik Michielsen, director of RFID and ubiquitous networks for U.S.-based ABI Research, says he expects that in the coming months, large integrators and consultancies will begin to partner with small and midsize integrators that have gained hands-on experience with RFID systems, so





they can offer installation as well as business consulting and data integration.

One large systems integrator that does have a vast services arm is ADT Fire & Security of the United States, which acquired Sensormatic several years ago. Sensormatic installed and maintained RF electronic article surveillance (EAS) systems. ADT is now leveraging that services arm to install and maintain RFID readers for customers. Checkpoint Systems, another large EAS systems provider in the United States, also offers an EPC implementation and integration service.

It's not just the big integrators and consulting firms that can help you change your business processes. Smaller firms with expertise in a specific industry should also be able to help you deploy an RFID system in a way that delivers value. U.S.-based R4

Global Services has worked with a number of consumer packaged goods companies that sell food products, including Kraft and Land O'Lakes. R4 has even installed a freezer in its test lab to test tags on its clients' frozen products. More than half of the RFID deployments that Xterprise has managed have been mandate-compliance efforts for CPG firms. Acsis has worked with a number of pharmaceutical clients, including Abbot Laboratories, Barr Pharma and Bayer. And U.S.-based CDO Technologies—which recently won one of five contracts from the DOD to supply it with RFID tags—has deployed RFID systems for a number of DOD suppliers.

### Working With Multiple Integrators

Since one systems integrator might not be able to fulfill all of your project needs, it may be necessary, even advisable, to work with more than one. On the recommendation of ODIN Technologies, its primary systems integrator, GTSI brought in a team from Sun Microsystems to install the Sun middleware platform for GTSI's RFID deployment. Steve Brown, executive vice president, marketing and business development for Acsis, says that his firm has partnered with systems integrators R4 Global and Accenture to offer its clients the kind of management they needed to complete large-scale changes in business processes. It has also worked with CSC, an integrator that serves the aerospace and defense industry, to help a client develop an RFID deployment for the DOD.

Some of the larger systems integrators are used to handling overall project management, including supervision of a number of vendors working on a major project. If you do decide to use more than one systems integrator, however, be sure one company has overall responsibility. That prevents each party from blaming problems on the other if things go wrong. "I made it quite clear what ODIN's role was," says GTSI's Decker. "I told them they had the overall project leadership role, and I was the customer." ■

## Stay Local or Go Global?

Both Brian Foster, IT manager of Bradshaw International, and Scott Decker, senior director of distribution and integration services for GTSI, say having a systems integrator that was located close to their facilities was a plus. It allowed for frequent on-site visits and rapid response when there was a problem, and it eliminated the travel expenses, time zone differences and other issues that come from picking an integrator from another part of the country or the world. But what if you're tagging products in facilities across the country or in several different countries? Foster says if Bradshaw operated distribution centers on both the East and West coasts, he would have wanted a systems integrator with a national reach.

Companies deploying RFID in operations in different regions will likely want to have one integrator or consulting firm oversee the entire project. But they'll also want to use local integrators because different regions have different rules about the frequencies used for ultra-high frequency RFID systems, the power output of the readers, the amount of time readers can broadcast and so on.

If your company has global operations but you're starting with a small RFID deployment, consider a systems integrator that will be able to help you start in one location, then expand your RFID operations to other regions. IBM and many other larger systems integrators can offer this type of service, but there are a number of midsize firms that also have international capabilities. JDS Professional Services, for example, has offices in Hong Kong, Boston and the United Kingdom. —MCOC