

Sink or Swim?

As you dive into the depths of RFID, be sure to avoid drowning in data.

By Andy Winans

Dec. 12, 2005—Companies already experiencing a proliferation in the data they collect desperately want to mine that information to improve marketing, sales, support, operations and product development. Unfortunately, there's a technology barrier.

The existing patchwork of older, general-purpose architectures simply wasn't designed to handle terabytes of constantly growing and changing data, or the complex types of analysis business users now need to carry out. Add to this the gargantuan volume of data radio frequency identification has the potential to generate, and the need to address the issue of data management sooner rather than later becomes obvious. The success of companies will strongly rely on how quickly and easily they can harness these massive amounts of data to make intelligent business decisions.

The biggest names in global retailing—Carrefour, Gillette, Home Depot, Marks & Spencer, Metro AG, Procter & Gamble, Tesco and Wal-Mart—are all backing the push for RFID adoption. According to almost every tech pundit, RFID has the potential to bring the "big picture" into corporate decision-making. Data gathered through RFID can allow executives to exploit disparate information streams covering key business functions—including store sales, product orders, distribution-center inventories and supplier shipments. RFID data may well end product counterfeiting and improve response times to product recalls.

There is a problem, however, that the pundits don't address: namely, RFID creates huge volumes of data that are difficult to manage. One recent estimate predicts that once RFID systems reach the level where individual items are tagged, they'll generate 10 to 100 times the data of conventional bar-code systems, turning RFID into something of a Frankenstein monster. Even if you scale this number way back to account for the fact that RFID data is currently available only at the pallet and case level, it's still an extra terabyte of data a day—a huge increase in the daily volume of data on the corporate IT system.

While most organizations are still in the early phase of RFID—i.e., making sure tags and readers work in the distribution center—they should also be thinking about what they'll do with the mountains of data sure to be created once their RFID system has been fully implemented.

In recent months, RFID realists have made a great deal of noise about the limits of this "bandwagon technology." They point out, for example, that massive hardware costs will thwart the practical deployment of RFID systems, not to mention the numerous worries about privacy and security. There's an even bigger issue that trumps these concerns, though: RFID's propensity to grind data warehouse operations to a halt. Because corporations are already sinking under the weight of their own data, it's unlikely they're prepared to handle the added burden of massive amounts of RFID information.

To put it another way, all the glorious promises of RFID will be rendered impotent once they enter the real-world environment of the data center.

So, what's the solution? The answer lies in implementing a data-management system that can analyze huge amounts of information quickly, instead of allowing it to overwhelm data infrastructures. Companies like Ahold USA, Amazon.com, and the Canadian drugstore giant Shoppers Drug Mart, have begun to leverage data warehouse systems offering real-time data analysis.

One technology receiving much attention in recent months is a data warehouse appliance combining a database, storage capacity and a server in a single piece of hardware. Such appliances are being used to gain real-time insights into data and fundamentally change the way organizations make decisions and drive their business processes. This means a dramatic increase in productivity across the organization. Time isn't spent running queries and maintaining the database; it's utilized leveraging business intelligence (BI) to make smarter decisions, ask better questions and, ultimately, make more money.

In our experience, there's a paradigm shift away from traditional data warehousing systems such as those from IBM, Oracle and Teradata, as organizations seek to cut query times down from literally days to minutes. Some data warehouse appliances can deliver significantly increased performance for large, complex and constantly evolving BI efforts—at half the cost of existing, general-purpose enterprise data warehouse systems.

My company, for example—Netezza—offers one system that delivers 10 to 50 times the usual performance, shattering traditional performance benchmarks by removing many of the technical roadblocks paralyzing today's patchwork of general-purpose technology. A single Netezza Performance Server system, for instance, can query 100 terabytes of data in real time; that's the equivalent of over 27,000 DVD movies, or more than 18.5 million books. So, you can imagine the positive impact similar appliances could have across an organization drowning in RFID data.

These appliances are plug-and-play solutions that work hand in hand with BI applications and data tools. This is a crucial consideration in the modern, global market where rapid return on business investments, including RFID deployments, determines whether a company will sink or swim.

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