In a nutshell

by Richard Bray

Data warehousing can capture and turn data into useable information

IS YOUR ORGANIZATION ready for data warehousing? In a nutshell, data warehousing puts important data in a nutshell: instead of guesswork and intuition, managers have real information; instead of waiting for monthly or quarterly reports, an organization can respond to changes within days or even hours; instead of residing in a variety of formats on different 'legacy' computer systems, warehoused data is presented in a consistent, comprehensible fashion.

The challenges of data warehousing are formidable. Linking different generations of database across scattered locations is difficult and expensive. Within the bureaucracy, it can take time to negotiate access to data because managers resist sharing their knowledge assets. Even the data itself can pose significant challenges, because it is easy to underestimate the effort required to 'clean' it – the same business or citizen can have a surprisingly high number of legal identities and until they are reconciled, even the most sophisticated data warehouse will not provide meaningful results. Perhaps most important, data warehousing can provide new levels of truth about an organization's operations, providing the organization with the potential to be completely transformed. Data warehousing probably will not succeed if an institution is not ready to handle the truth.

The United States Postal Service (USPS) knew it was ready when stamp sales began to plunge due to competition from facsimile machines, the Internet and courier services. Stamp sales dropped by more than US$400 million last year, to be followed by a similar shortfall this year. Against this fierce competition, the postal service had to make the most of what it had – a nation-wide chain of 38,000 post offices, 7 million retail customers every day and more than 700,000 career employees.

Helping to provide the answers was an enterprise data warehouse, offering prompt, detailed information to USPS managers at the front line of the organization – the retail counter. As Richard Rudez, USPS manager of Retail Operations said, "What gets measured gets the action," so when managers at the post office level see that customers have moved from the early morning to the late afternoon, they can re-schedule employees. When customer line-ups start to lengthen, managers can take steps to move transactions from the counter to automated kiosks in the post office. As Rudez explained, "This is helping us move low-volume customers from the window and bringing more complex and profitable business to the front." At the counter itself, postal clerks now know exactly how to sell high-margin products, so instead of asking if customer wants 'delivery confirmation' they now ask, 'do you want to know when it arrived?'

John Tulley is a Canadian vice-president of Teradata, the company that supplied the US Postal Service data warehouse. He says government faces special challenges in data warehousing. "One of them is a procurement process which really focuses on the technology of a data warehouse rather than the business justification for having a data warehouse. So they have to buy the tool first and then find the nails to hammer rather than finding the loose boards first," Tulley says. As well, many governments turned away from data warehousing because it involved customer rela-

tionship management and its focus on customers rather than citizens. Today, Tulley thinks that is changing. "I think government agencies are starting to understand the concept of using data warehouses to improve customer service."

The most significant challenge, Tulley believes, is the difficulty governments have in taking a single view of their citizens, because of restrictions on the repurposing of data, "So if I collected your name, address, phone number for property tax purposes at the municipal level, I can't repurpose that for a health clinic, even if it is the same information."

In reality, privacy regulations can be enforced just as effectively within a data warehouse as they can in separate databases, by tagging the data correctly and enforcing the appropriate policies about its use. "Once you have the fine-grained data," Tulley said, "then you can establish rules." He used an example from Australia, where tax officials know exactly how to handle a person who wants more time to pay the tax bill. "The business rules would determine whether the person is consistently late in payment or if it is an isolated event. In the latter case, there is a consistent automated business rule which says, 'if they have never asked for mercy before, grant it at once' whereas the chronic late payer is treated differently," Tulley said. The result is consistent fair treatment for all taxpayers, based on detailed knowledge about individuals.

When it introduced data warehousing, the US Postal Service realized the most important individuals it had to deal with were its own employees, the people at the front lines of customer service and their
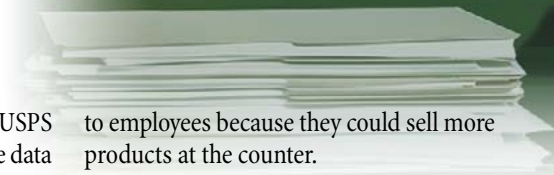
managers. Heavily unionized and accustomed to generations of bureaucracy, overcoming resistance to new information was critical. "There are a lot of people still doing 'back of the envelope' calculations because they don't trust the data," Richard Rudez said of veteran postal managers. "They've got experience the data doesn't always support."

To help overcome resistance, the USPS makes sure that most reports from the data warehouse encourage internal improvement instead of competition across the system. "This is all about your office," said Rudez. "You are compared with yourself." By showing service improvements of up to 30 percent within a week, the US Postal Service was able to sell data warehousing to employees because they could sell more products at the counter.

Data warehousing can provide answers but it will only work if an organization is ready to ask the right questions. ◢◣

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