

Rolling Out the Real-Time Data Mart



Master data management, which rationalizes multiple enterprise data stores, starts with a few small steps — and an updated version of the data mart

BY GALEN GRUMAN

THE GROWING ACCEPTANCE OF THE SOA approach to enterprise applications has reopened an old IT wound: the sorry state of data in most enterprises. In the 1990s, the data warehouse and the enterprise repository were trumpeted as the solution for getting the entire enterprise on the same page, but these systems quickly became unwieldy dumping grounds, much like the cavernous *Indiana Jones* warehouse in which the Ark of the Covenant was stored to keep it safely out of reach.

Today, a new approach — often labeled master data management — is emerging, one that takes a mod-

ular, orchestration-based approach to rationalizing data strewn across the enterprise in various formats and repositories (infoworld.com/4595).

Similar to a complete SOA deployment, however, a complete master data management effort is a huge undertaking, one that takes years and consumes a lot of resources with marginal interim benefit. “You just can’t shut down the enterprise and do this major business re-engineering,” says Don DePalma, chief researcher at IT consultancy Common Sense Advisory. So what is IT to do?

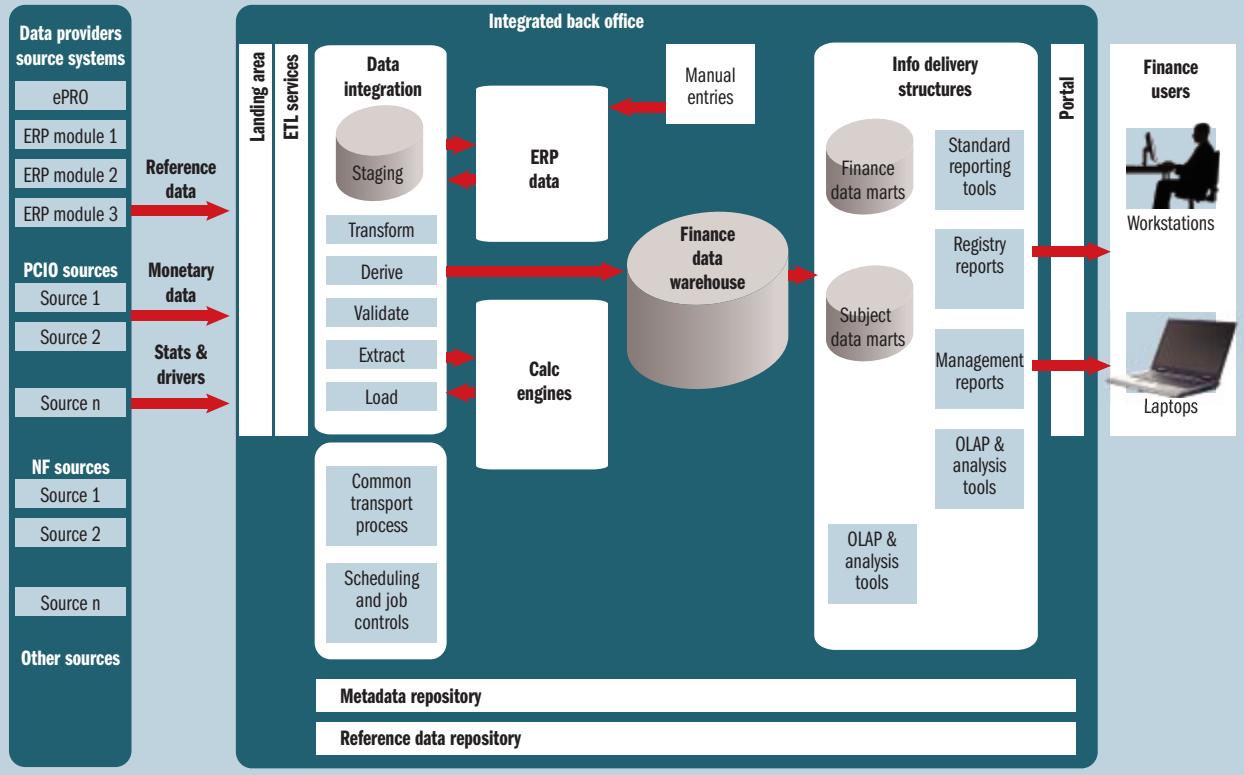
Increasingly, companies are revisit-

ing a mid-1990s approach — the data mart, now often called a system of record — that fell by the wayside during the data warehouse and repository crazes. Creating a system of record is a good way to start down the path of an enterprisewide master data management system. It helps IT get a handle on key data, making it more available to enterprise users and providing a demonstrable ROI in the process.

Data warehouses and enterprise repositories shunted aside the data mart of yore. In most cases, the data mart couldn’t do the job of being a timely data container, DePalma says.

Nationwide's Data Consolidation

Nationwide uses a “sender” and “receiver” structure to define its data feeds. An ETL (extract, transfer, and load) tool and a custom-built accounting rules engine convert data sent from subsidiaries and partners into a standardized format that is ultimately received by the general ledger and posted.



“It was a snapshot, so it was outdated,” he notes. But data marts can now be near-real-time repositories, thanks to a variety of advances in the intervening decade. These include standardization of data exchange around ODBC, JDBC, and SQL 99; increased use of Web interfaces for transmittal of real-time information; and better data management tools from vendors such as Business Objects and Informatica, he says.

The result is the improved data mart, or system of record, built using software from companies such as Business Objects, IBM, Informatica, or Oracle. “This is the next step to getting cleansed, standard information of the key information that is important,” DePalma says.

From Point Solution to Architecture

Nationwide Insurance started a data-rationalization effort two years ago, after the CFO decided that having multiple ledger systems — inherited through multiple acquisitions — was interfering with the company’s ability to see the complete financial picture.

Although the insurer could have considered a broad data architecture effort, it had a culture of departmental independence, so it made more sense to solve a specific need than to convince the organization at large to collaborate for an unclear benefit, says Vikas Gopal, director of enterprise financial applications at Nationwide. “On the financial side, there was a realization of the pain that led to the recognition of the need for consistent data translation, which in turn led to a need for data governance,” he says.

With the CFO’s mandate in hand, IT and business analysts dived into all 240 ledger-related systems and the data stored in each and worked with executive management to decide what the enterprisewide ledger system needed.

After securing that agreement — and defining each piece of data in the ledger — the IT staff could go back to the individual product lines’ ledger systems and create the reports that the enterprisewide ledger required, Gopal says. That enterprise ledger is delivered through an Oracle PeopleSoft ERP sys-

tem and Kalido data repository.

Because definitions and details about financials were inconsistent, Nationwide’s IT staff had to create data translation and cleansing rules, so the output matched the enterprisewide ledger’s format and definitions. Nationwide uses a commercial ETL (extract, transform, and load) tool from Informatica to perform the data conversion and import into the enterprise ledger.

That tool identifies any mismatches, kicking out the data and alerting IT. That process allows IT to see whether the problem is a technical one, such as a bad report file, or an unauthorized change to the master data format. If a frontline financial system changes how it defines data, IT adjusts the ETL rules to ensure the output matches the enterprisewide ledger’s standards. The standardized reports are generated from a variety of tools, including those from Essbase, Hyperion, IBM, and Kalido.

Beyond the consistent definition of data and the creation of ETL rules to produce data conforming to that standard definition, Gopal says a key

“You need structure and an application development model. ... As soon as you stop thinking about a data architecture, you’re in trouble.”

— Don DePalma, Common Sense Advisory

change in Nationwide’s data management was the adoption of governance around its data. A committee of IT and business managers decides what the enterprisewide ledger should have, so the data definition and underlying data architecture do not drift in the future. “Before this effort, there was no assurance that the data we received was repeatable,” he says.

Pharmaceutical manufacturer Merck went through a similar process when it decided two years ago to standardize its data around product information. The catalyst was the deployment of an ERP system, which touched multiple departments and exposed data inconsistencies, recalls Joe Solfaro, executive director of information management at Merck. The company’s effort is now focused on understanding the data and developing a data architecture, which involves IT, business analysts, and outside consultants poring through the various databases, software applications, and business processes.

Merck is focused on understanding its data governance needs — what Solfaro calls “stewardship” — so each data element has a clear owner accountable for its consistency and definition. Although he expects to use some sort of data broker to manage data flow and translation to the standard definitions used by its SAP ERP system, Solfaro’s team isn’t focused on specific technologies right now. Only after the architectural and data definition work is completed in mid-2007 does he expect his team to determine the right technology implementation for ensuring data consistency. “It’s a forensics activity at this point,” Solfaro says.

Don’t Lose Sight of the Vision

While both Nationwide’s and Merck’s efforts are focused on specific projects,

they also are keeping an eye on the larger master data management goal.

For example, while Merck’s Solfaro works on the product information effort, another group will work to standardize customer information. Rather than work independently, creating data-architecture fiefdoms, the two groups are coordinating, using common principles in their efforts. That collaboration will make it easier to unify the data architectures and make data exchange much easier, Solfaro says. He expects the project to take a year.

“We will go from the local level to the enterprise level,” Solfaro says, using coordination of individual projects to lay the groundwork. Nationwide’s Gopal also coordinates with other departments with the goal of building toward a standard data architecture. “If you don’t tackle this, you can only work on patch-up projects,” he says.

Both Nationwide and Merck have focused on “one-way” data rationalization efforts, in which data moves along a specified path to a system of record. In an SOA environment, data paths won’t be so linear because services from different systems could be combined to create new functionalities that access data in a nonlinear way. But consultant DePalma encourages IT not to get hung up over this possibility. In many cases, even in the SOA context, there will be clear stages to data’s use and definition.

Customer information related to shipping predictably can be needed for shipping and call-center purposes, for example, so worrying about



Nationwide’s Vikas Gopal

whether a customer-acquisition system knows what to do with that data isn’t worthwhile. The key is to ensure that the system knows to ignore aspects of the data irrelevant to it — or never sees it in the first place.

Rather than worry about designing a data architecture and data model that accounts for every

possible use, DePalma says IT should focus on ensuring that the data model doesn’t become static. Definitions and needs will change, so IT should continually assess its data model and adjust its master data management systems accordingly. “You need structure and an application development model for future development so that new things plug in to your system,” he says.

“Everybody needs a vision, and data architecture is that vision. As soon as you stop thinking about a data architecture, you’re in trouble,” DePalma advises. Even if you never fulfill your vision, having it will keep everyone moving toward the same goal, helping reduce incompatible designs, keeping complexity manageable, and opening up new ROI opportunities as unexpected synergies arise. “With a common vision, you’re not just doing individual projects in a vacuum,” he says.

That’s Merck’s philosophy as well: “From a grander viewpoint, our enterprise architects have already tried to unify the architecture and the strategy,” Solfaro says. “Even if there are tactical differences on projects, we’ll still be moving in the same strategic direction.” ☛

Apply online at: <http://subscribe.infoworld.com>

PRIORITY CODE: W06CS1

I wish to receive a free subscription to **InfoWorld.**

Yes **No**

SIGNATURE _____ DATE _____

A. MAILING ADDRESS

Publisher reserves the right to limit the number of complimentary subscriptions. Free subscriptions available in the U.S. (including APO and FPO) and Canada

NAME _____
 TITLE _____
 COMPANY NAME _____
 DIVISION / DEPT. / MAIL STOP _____
 MAILING ADDRESS _____
 CITY / STATE / ZIP / POSTAL CODE _____
 Is the above address a home address? 1. Yes 0. No
 E-MAIL ADDRESS _____
 BUSINESS PHONE (INCLUDING AREA CODE) _____ BUSINESS FAX NO. (INCLUDING AREA CODE) _____

1. Over the course of one year, do you buy, specify, recommend, or approve the purchase of the following products or services worth:

Please include amounts for all locations of your organization. Consultants: please include what you recommend for your clients as well as what you buy for your own business.

- | | | |
|----------------------------------|--------------------------------|----------------------------|
| 01. \$100 million or more | 06. \$5,000,000 to \$9,999,999 | 11. \$100,000 to \$399,999 |
| 02. \$50,000,000 to \$99,999,999 | 07. \$2,500,000 to \$4,999,999 | 12. \$50,000 to \$99,999 |
| 03. \$30,000,000 to \$49,999,999 | 08. \$1,000,000 to \$2,499,999 | 13. Less than \$49,999 |
| 04. \$20,000,000 to \$29,999,999 | 09. \$600,000 to \$999,999 | 14. None |
| 05. \$10,000,000 to \$19,999,999 | 10. \$400,000 to \$599,999 | |

Product category	Write code in box
Large systems	<input type="text"/>
Client computers	<input type="text"/>
Networking / Telecom (including servers)	<input type="text"/>
Wireless	<input type="text"/>
Internet / Intranet / Extranet	<input type="text"/>
Security	<input type="text"/>
Storage	<input type="text"/>
Peripheral equipment	<input type="text"/>
Software	<input type="text"/>
Service/Support / Outsourcing	<input type="text"/>

2. What is your primary job title? (PLEASE CHECK ONE ONLY)

- IT / Technology Management**
01. CTO, CIO, CSO, Vice President
02. Director
03. Manager / Supervisor
04. Network Manager / Director
05. Engineer
06. Systems Analyst / Programmer / Architect
07. Other IT Management
- IT / Technology Professional**
08. Consultant / Integrator
09. Developer
10. IT Staff
11. Other IT Professional
- Corporate / Business Management**
12. CEO, COO, President, Owner, Vice President
13. CFO, Controller, Treasurer
14. Director
15. Manager / Supervisor
16. Line of Business
17. Other Business Management Title
98. Other Title (specify) _____

3. Please indicate your job function(s) (PLEASE CHECK ALL THAT APPLY):

- IT / Technology Functions**
01. Executive
02. Department Management - IT
03. Networks / Systems Management
04. Applications Development
05. Management of Enterprise Applications (CRM, ERP, SCM, etc.)
06. Research / Development Management
07. Consultant / Integrator
08. Other IT Functions
- Corporate / Business Functions**
09. Executive
10. Department Management - Business
11. Financial / Accounting Management
12. Research / Development Management
13. Sales / Marketing Management
14. Other Business Functions
98. Other Functions (specify) _____

4. Are you involved in buying, specifying, recommending or approving the following IT products / services?

(PLEASE CHECK ALL THAT APPLY):

- Software / Products / Technologies**
01. Service Oriented Architecture
02. Virtualization Oriented Architecture
03. Open Source Technologies
04. Risk Management
05. Customer Relationship Management
06. Enterprise Resource Planning
07. Business Process Management / Outsourcing
08. Business Intelligence / Data Mining / Data Warehousing
09. Financials / Payroll / Billing
10. Performance / Application Management
11. Other Software
12. Networking
13. Web Services
14. Content Management
15. Network and Systems Management
16. VoIP (Voice Over IP)
17. Telecommunications
18. Wireless
19. Remote Access
20. Web / Video Conferencing
21. Storage
22. Storage Virtualization
23. Disaster Recovery
24. Security
25. Anti-Virus / Content Filtering
26. Firewall
27. VPN
28. Identity Management
29. Authentication / Authorization
30. Intrusion Detection & Prevention
31. Encryption
32. Other IT Products / Technologies
- Hardware / Peripherals**
33. Server Virtualization
34. Servers
35. Multi-Core Processors
36. Notebooks / Laptops
37. Mobile Data Center Devices
38. PDAs / Handhelds / Pocket PC / Wireless
39. Flat Panel Displays
40. Printers
41. Other Hardware / Peripherals

5. What is your organization's primary business activity?

(PLEASE CHECK ONE ONLY):

- General Business Industries**
01. Defense Contractor / Aerospace
02. Retail / Wholesale / Distribution (non-computer)
03. Pharmaceutical / Medical / Dental / Healthcare
04. Financial Services / Banking
05. Insurance / Real Estate / Legal
06. Consulting (non-computer)
07. Transportation / Utilities
08. Media (print / electronic)
09. Entertainment / Hospitality
10. Communications Carriers (telecomm, data comm., TV / cable)
11. Construction / Architecture / Engineering
12. Manufacturing & Process Industries (non-computer)
13. Research / Development
- Technology Providers**
14. Service Provider (MSP, BSP, ISP, ASP, etc.)
15. Computer / Network Consultant
16. Systems / Network Integrator, VAR / VAD
17. Technology Manufacturer (hardware, software, peripherals, etc.)
18. Technology - Related Retailer / Wholesaler / Distributor
- Government / Education**
19. Government: federal (including military)
20. Government: state or local
21. Education
98. Other (specify) _____

6. How many people are employed at this organization, including all of its branches, divisions and subsidiaries?

(PLEASE CHECK ONE ONLY):

1. 20,000 or more
2. 10,000 - 19,999
3. 5,000 - 9,999
4. 1,000 - 4,999
5. 500 - 999
6. 100 - 499
7. 50 - 99
8. 49 or less

7. Which of the following operating systems are in use or planned for use?

(PLEASE CHECK ALL THAT APPLY):

01. Windows XP
02. Other Windows
03. Mac
04. Linux / Unix / Solaris
05. Other (specify) _____

B. E-MAIL PREFERENCES

You may receive a renewal reminder via e-mail. May we send other information about InfoWorld products, services, or research via e-mail? 1. Yes 0. No

We occasionally send our subscribers email messages with news about technology solutions and special offers from qualified third parties. Would you like to receive these messages?

1. Yes 0. No