



FORGING *a new trail*

Master data management is fast becoming an enterprise-wide initiative for companies driving toward data integration.

by **Michael Miley**

If you've used data at any level for decision making, you know how important it is to have consistent master data across the key applications of your organization. That's because master data is the crucial reference data you use to define and classify business entities and their hierarchies or relationships such as customers, financials, products and employees.

Master data management (MDM) is the necessary practice of “acquiring, improving and sharing master data,” says Philip Russom, senior manager of research and services at The Data Warehouse Institute (TDWI). In a recent TDWI Best Practice report titled “Master Data Management: Consensus-Driven Data Definitions for Cross-Application Consistency,” survey responses from 741 individuals indicate that MDM is coming into its own as an enterprise-wide practice. “True MDM is still in its infancy, though crude forms of it have been around for years,” Russom says. “Historically, it’s been done in silos, among specific application domains, though some forward-looking companies are now doing enterprise MDM across multiple application types and domains as the drive for data integration proceeds.”

Drivers and types

Companies implement MDM to obtain a single view of the business by constructing or identifying a “system of record” or a “trusted source” for master data. This effort is driven by real-world business goals such as the need for transparency (for compliance with federal regulations and a 360-degree view of business data), the need to achieve operational efficiency and eliminate redundancy in systems, and a desire for competitive differentiation.

Using MDM as a master data service is also seen as a key ingredient in any future service-oriented architecture (SOA). The master data most targeted for MDM projects today, according to the TDWI survey, is customer (74%), financial (56%) and product (54%) master data, followed by the master data for business partners (49%) who supply or distribute products.

For 79% of organizations today, according to the TDWI report, MDM is typically done

as a correction and not as an autonomous practice. Though some MDM projects are beginning to span the enterprise, this means MDM solutions are usually built into or closely associated with larger applications. Accordingly, says TDWI, MDM practice tends to fall into three broad categories: operational, analytic and enterprise.

> **Operational MDM** is built into or integrates operational applications such as financials, enterprise resource planning (ERP), supply-chain management, customer relationship management (CRM) and so on.

> **Analytic MDM** is associated with data warehousing or its related practices, such as customer data integration (CDI) or financial performance management (FPM).

> **True enterprise MDM** (currently performed by only 20% of those surveyed in TDWI’s research) usually requires providing an autonomous MDM hub (a registry, co-existence or transaction hub, according to Gartner) that can integrate master data across multiple types of IT systems.

“Not surprisingly, data warehousing [85%] and overall BI [business intelligence] [82%] are at the top of the list of business initiatives to which MDM projects are applied, suggesting that MDM has become a core competency of data warehousing and BI initiatives, though we’re just getting started with MDM practice on an enterprise scale, across multiple applications and application types,” says Russom.

He also adds that TDWI research has shown that MDM is often implemented to combat what Russom calls “audit paranoia.” “This is not just a compliance issue—a response to federal legislation such as Sarbanes-Oxley, which requires executive sign-off for accuracy in financial statements,” Russom says. “Master data

NOTEWORTHY FINDINGS FROM TDWI’S MDM REPORT

54% of survey respondents say they have derived benefits of good master data. The most common benefits reported are improvements in data quality (76%), accurate reporting (75%), better decision making (69%) and consistent definitions of key business entities (65%).

52% report that their MDM solution spans the enterprise.

46% say they’re in the exploration phase of an MDM solution, with 33% in either the design, implementation or deployment phase. 21% state they have no MDM plans.

48% of respondents believe their organization can achieve return on investment (ROI) by investing in MDM. Another 13% say no, and 39% say they don’t know.

61% first deployed an MDM solution in a data warehouse or BI context.

BI (82%), data governance or stewardship (53%) and CRM (49%) are the most common business initiatives supported by an MDM solution.

management is also done to forestall or minimize the time spent in costly audits for employees, shareholders and business-to-business relationships.” In related statistics, 81% of TDWI’s respondents ranked inaccurate reporting as the leading problem resulting from bad master data; conversely, 75% ranked accurate reporting as the leading benefit from good master data.

A collaborative effort

“Master data is often the most difficult, contentious data to get consensus on because each group in an organization feels their version of the truth is the one they need,” says

“Instead of being distracted by arguments about the viability of data, MDM lets you assume that that’s all in place, so you can put all your time and energy into actual decision making.” —Philip Russom

David Newman, vice president at Gartner who leads the firm's research on enterprise information management (EIM). "That being the case, Gartner defines MDM as a workflow-driven process in which business units and IT collaborate to harmonize, cleanse, publish and govern a finite set of data elements that must be shared across the enterprise. The intent is to create a single version of the truth for key corporate data, thus achieving enterprise-wide consistency in communication, process execution and decision making."

According to Gartner, master data is not all your data: It's the subset or finite list of elements required for sharing and standardization. "Master data is the consistent and uniform set of identifiers and extended attributes that describe the core entities and groupings of the enterprise," says Newman. Examples of core entities:

- > Party (such as customers, prospects, people, citizens, employees, vendors, suppliers or trading partners)
- > Places (including locations, offices, regional alignments or geographies)
- > Things (such as accounts, assets, policies, products or services)

STEPS FOR MDM SUCCESS

According to TDWI's Best Practices report on MDM, these four steps are necessary when implementing an MDM solution:

1. Define core business entities.
2. Establish a central system of record or hub.
3. Use integration techniques to collect and share master data.
4. Acquire, improve and share master data via an MDM solution.

Instances of master data groupings include:

- > Organizational hierarchies
- > Sales territories
- > Product rollups
- > Pricing lists
- > Customer segmentations
- > Preferred suppliers

Master data is infrequently changed and often referenced by a business process or event.

"In large organizations, with different divisions spread across separate locations, that means the key challenge in MDM isn't really technical, it's organizational, and reflects a strategic commitment to manage information as an enterprise asset," says Newman. Thus, successful MDM initiatives need to be cross-functional and involve teams of upper management, line-of-business (LOB) units and IT personnel.

"The business units typically fulfill a stewardship role based on a workflow environment that includes reviews, approvals, development of standards, rollups, data quality and change-management processes," Newman adds. "The IT organization typically provides the enabling infrastructure for cleansing, storing, maintaining, publishing and subscribing to master data, which includes not just structured but unstructured data, such as text, images and Web content. Both groups have to work together to achieve MDM objectives within the context of an EIM program."

Real-world results

TDWI's report cites the following cases that address the typical challenges of successfully implementing MDM across an enterprise:

- > A worldwide manufacturer of hand tools

and hardware has a four-year plan to consolidate 23 systems into one ERP system to eliminate redundancy and provide a global view. This requires establishing an internal organization to first come to consensus on common master data for cross-unit applications and then to establish a master data repository for both operational and analytic MDM. The company's director of global BI, who has long done MDM for data warehousing, sees MDM for their data warehouse as good for decision making, but MDM for ERP as having deeper impact on the day-to-day business.

- > A publicly traded company providing annuities and retirement products has developed 100 legacy applications over the years and across dozens of LOBs, functional units, subsidiaries and locations. Grappling with data inconsistencies, poor visibility and sub-par governance and reporting, it has re-engineered its finance infrastructure and launched an aggressive MDM project. It has built an MDM repository in conjunction with its data warehouse, ERP and financial systems that both extracts and propagates reference data to and from the systems. A data governance team, which includes business and IT members, has implemented EIM processes that include managing all data, metadata and master data in finance. The result is greater data transparency, streamlined analytics, more accurate forecasting and more flexible reporting.

As companies encounter similar projects moving forward, enterprise master data remains the larger goal for MDM, tying upstream and downstream IT systems together. Says Russom: "Enterprise MDM is the Holy Grail—what everybody should be shooting for—and whether you succeed at it or not, you'll be far better off for having made the effort." **T**

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