

WHITE PAPER

The Human Factor of Master Data Management

Introduction

You won't find a CIO or business analyst anywhere who will disagree with the importance of leveraging all of a company's diverse data sources in order to drive successful business intelligence (BI) and business performance management (BPM) initiatives. In fact, this belief has fueled an unprecedented proliferation of reporting and analysis applications—to the extent that the majority of Global 2000 companies currently use between five and fifteen separate applications to try to fill the need for good business intelligence, according to Forrester Research. As a result, many organizations are now looking to standardize on a single platform for BI, analytics and reporting. Riding this wave, many BI vendors have launched into acquisitions and mergers that will augment their platforms with formerly standalone best-of-breed tools.

And yet, will this drive to homogenize BI under a single-vendor umbrella really meet the needs that have driven the proliferation of departmental tools? Not necessarily. Even with the large number of such applications in place, Forrester analyst Keith Gile contends that only about 10% of business "workers" in the enterprise actually use them. He attributes this weak adoption rate not to a previous lack of consolidation among BI tool vendors, but to a need for more accessible BI, for BI that constantly evolves in the context of each business worker's everyday role in the organization—what Gile calls "operational BI."

So how do you get that context? Of course, you need visibility to all of the data contained in various enterprise systems, such as ERP and CRM, as well as data warehouses. But not all of the data required to run a business exists in these systems. In fact, the business's primary source of operational intelligence resides in the human knowledge repository of the company's workers, and the real-time integration of that human intelligence is required if operational BI is to become a reality.

The need to incorporate this human factor into BI, and to empower these business workers with integrated, actionable intelligence as they perform their jobs every day, is really the driving force behind the growing category of solutions that is known as master data

Forrester 5 to 15 separate reporting and analysis applications used in most Global 2000 companies

Price Waterhouse Coopers 75 % of general budget overruns are due to low data quality

TDWI 25 % of time is spent clarifying bad data, which is costing U.S. companies more than \$600 billion a year

Meta Group 30 % of Global 2000 organizations live in 'master data chaos'

management (MDM). Business domains—such as customers, products, and accounts—are comprised of the various hierarchies used to consolidate and analyze data, as well as the attributes, or master data, that define data mappings and additional hierarchies. Effective and consistent management of these domains across the enterprise is a crucial element of BI and all "dimensionally-aware" systems—without it, the foundation of data that drives these systems is likely to be inaccurate, inconsistent and incomplete. At its best, MDM not only provides an accessible process for consistent management of master data and structures across the enterprise, but enables human practitioners to integrate their domain knowledge with that data as needed, in a flexible, contextual framework.

BI in the Tarpits

The Slow Trap of ERP Customization

There are some powerful concepts inherent in this simple definition of MDM. The first is that individuals within the business—non-technical domain experts—are the frontline users of a true MDM system. Obviously, that means the system has to be easy to use. But what is ease-of-use in this instance? It is certainly not the customization of ERP systems in order to hard-code push-button reports or accommodate departmental roll-ups. That's a perilous journey to undertake in the first place, and it fails to take into account the dynamic and collaborative nature of human interactions with data in the decision-making process.

For example, there may be a lot of information in the ERP system regarding "product". While some of this may be useful for analysis and consolidation, people in different parts of the organization need to group the information in different ways which are not defined in the ERP system. Such as the fact that products are different colors or shapes, or that they are sold to different markets. The system, probably put together by order-takers and financial planners, simply isn't built to "care" about the information needs of the marketing department.

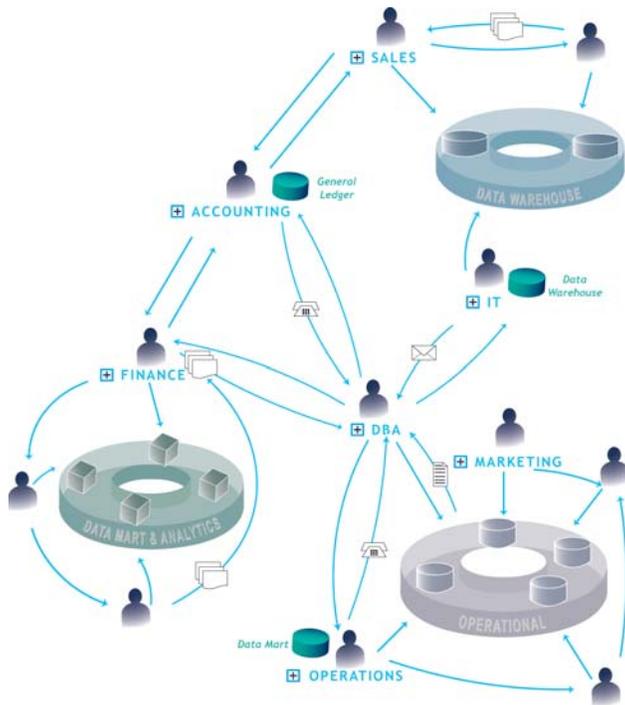
While business decision-makers from across the organization depend on data from the company's data warehouse and transactional systems, they look at that data from the very different perspectives of their operational roles in the enterprise. They also need to incorporate information that isn't tracked in

any enterprise system; they need to be able to add their expertise, to evaluate the data through their own unique filters, to develop and manage the structure of the data themselves, and have their data seamlessly available to all appropriate systems across the enterprise. And here's the rub—they need to be able to do it quickly and easily.

The Evolving Role of Users

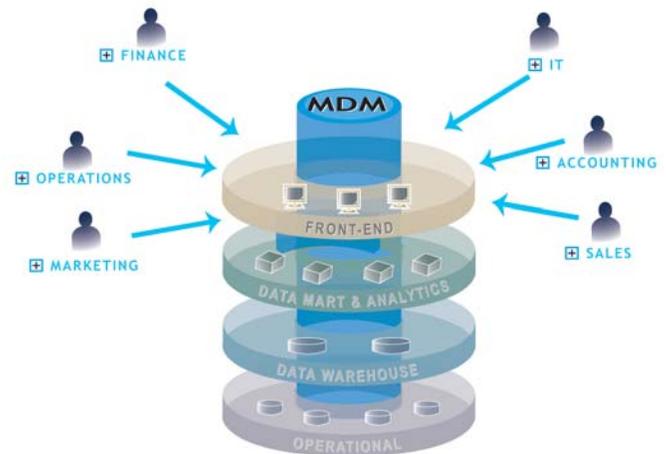
Eliminating the DBA as Bottleneck

It sounds like a tall order, and indeed, this is why the delivery of dynamic, business-based solutions has continued to elude most players in the master data management market. While most data warehouse vendors can see that their database administrators (DBAs) are having trouble managing master data for the business users (due as much to the DBA's lack of



Traditional

- Master data and structures maintained independently within each system
- Manual synchronization required for enterprise applications even if a solution suite shares common data
- Redundant, manual effort restrains resources and propagates inconsistencies across systems and inaccurate reporting data
- Lacks auditability of change requests, enforceability of business rules and policies, and efficiency for real-time analysis and decision making



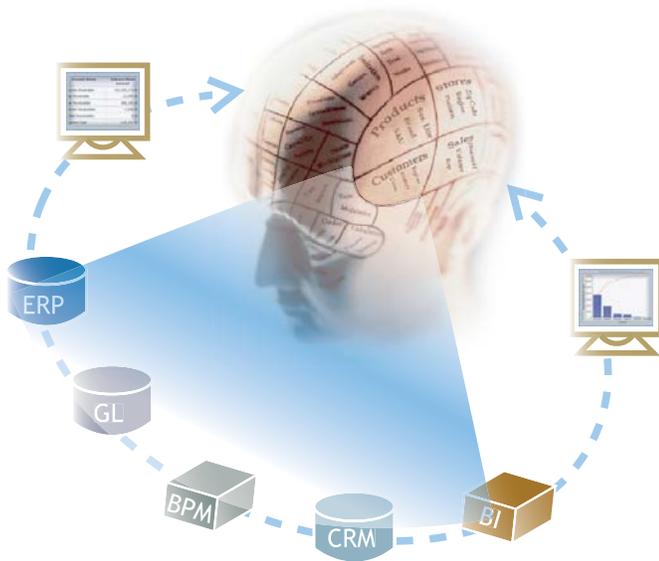
With MDM

- Centralized data repository ensures accuracy and consistency of data across all appropriate systems
- Any system can provide to, or subscribe from, the MDM system
- Business users, the human factor of MDM, empowered to maintain and manage their master data and structures
- IT resources are no longer burdened with change requests and business users get immediate results
- Formalized process with full auditability and business rule enforcement ensures governance and compliance

domain knowledge as to bandwidth constraints), these vendors have nonetheless shied away from the challenge of empowering business users to manage their own master data. Instead, approaching the problem from the perspective of data-warehouse-as-primary-system, these vendors have focused on making it easier for the DBA to delegate a limited amount of work to the business users. Unfortunately for both DBA and business users, this approach still does not integrate the human factor of real-time knowledge development into the process of master data evolution.

Security Concerns & Collaboration

Making MDM usable for the business workers naturally raises questions in the area of security. Systems designed primarily for use by DBAs might have only one or two users, so security is easily managed. With the incorporation of human factors into the MDM solution, things are no longer so simple. If all business users need to impart knowledge, then all need the ability to establish and change their respective data hierarchies, roll-ups and reports as needed. A true enterprise solution must be designed specifically to provide a flexible security framework that will support the implementation of role-based and individual security permissions and controls with a high degree of granularity. It must be able to handle user scenarios that reasonably include 50 product managers working together on 120,000 SKUs, all needing to make changes at the same time. The security required to support this kind of scalability has to be built in, not a shoehorned adaptation of the all-or-nothing access controls that worked for a DBA-restricted system.



The Human Factor

Who best understands today's and will first understand tomorrow's reporting and analytical requirements?

Scenario 1: New products are globally introduced into two new product lines with introductory launch campaigns.

Scenario 2: Planned acquisition of a bank necessitates all financial reporting is merged by end of following fiscal quarter.

These real-world scenarios are initiated and driven by the domain knowledge experts, the business users. Master data management takes a real-time approach to incorporating the knowledge capital of business users throughout the master data management process.

In addition to these basic security considerations, if you're going to open up master data management to users across the organization, you're going to need to support collaboration, and that opens up the can of worms labeled "Business Processes". The inherent value of master data management is in providing an "interpretive" framework of meaningful data structures to ensure accuracy and consistency across disparate systems—data warehouses, ERP, CRM and BI. The true enterprise-wide master data management solution adds to this framework the previously non-integrated human knowledge base, and these human "systems" must be able to share and exchange data with each other, as well. The problem is, in terms of human systems, data exchange and analysis has as much to do with processes as with master data and structures.

Typical BI tools and data warehouses don't embrace the concept of process, and business process management solutions don't incorporate analytics.

Luckily, the MDM solution is able to leverage the human systems' analytic and dynamic relationships

with process; but with the context of these relationships largely influenced by operational roles, support for collaboration becomes especially significant. If MDM is to fuel "operational BI", it will need to provide tools for workflow management, chains of command, and change management or version control, all based on collaborative security features—and all accessible via the Web. This agile and pervasive infrastructure has grown up in terms of enterprise security features, and it is the obvious collaborative platform choice for empowering the human factor of master data management.

MDM—The Natural Evolution of BI

With users clamoring for decision support and analysis tools that will keep up with the speed of business today, it's no wonder that the proliferation of departmental BI applications has gotten out of hand. However, this is the point where BI evolves. Funneling master data change requests through technical system administrators is no longer viable for both responsiveness and compliance. Customizing ERP and other operational systems to capture all master data is not a workable alternative.

The business users must be able to evolve the MDM process and model as rapidly as the business evolves, but control must not eliminate flexibility. In the absence of flexible MDM, multiple BI and other applications will be individually enhanced directly by individual business users and departments, creating the chaos that BI was meant to eliminate. MDM will centrally capture the missing data of business domains directly from the knowledge workers across the enterprise, eliminating maintenance bottlenecks while ensuring a secure, controlled and flexible process.

MDM is a new species, and it doesn't play by the rules—or suffer from the limitations—of its predecessors. Businesses that fearlessly embrace this unaccustomed offspring of data warehousing and analytics will finally be able to truly leverage all of their data sources—including the previously untapped human knowledge base—and bring together an accurate and consistent multidimensional view of the previously disparate enterprise. Businesses that fall back on more traditional forms of data management that don't empower the human factor may find themselves—well, extinct.

Take Note

Inaccessible BI that doesn't evolve in the context of a user's everyday role in the organization fuels staggeringly low usage and adoption rates.

Direct system editing proliferates the chaos that BI was meant to eliminate.

Responsiveness, governance and compliance are compromised by funneling change requests through technical administrators.

Customizing single systems to capture all master data is not a workable alternative in an enterprise environment.

Take Action

The primary source of "business intelligence" information resides in the human knowledge repository of the company's workers.

Real-time integration of this human factor is required to maximize the value of enterprise systems, and the effectiveness of business workers.

MDM provides business workers with integrated, actionable intelligence as they perform their jobs every day.

MDM eliminates maintenance bottlenecks while ensuring a secure and controlled process.

MDM empowers business users to evolve the master data management process and model as rapidly as the business evolves.

MDM enables businesses to truly leverage data sources—including the human knowledge base—for an accurate and consistent view of the previously disparate enterprise.



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We assist large and mid-sized organizations envision, design, implement and operate advanced financial systems tailored to meet the challenging demands of their complex and dynamic business.

Profisee also specializes in helping organizations implement operational applications as key enablers for decision support, performance measurement, profitability improvement and process improvement initiatives.

Profisee provides world-class master data management services for large organizations looking to leverage MDM processes and technology to improve data accuracy, systems integration, and transparency. Formed from the management team of Stratature, the leading MDM software provider acquired by Microsoft in 2007, Profisee employs some of the world's most experienced MDM consultants and the first dedicated MDM project and design methodology.

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