

Creating High-Quality Master Data

Master data management (MDM) is an initiative which encompasses a mixture of technologies and products, participation from all aspects of a business, and process evaluation. Rather than a single “big bang” project, an MDM solution grows over time and can take many different forms within different organizations. MDM today covers all types of critical business information, including customers, suppliers, products, and financial data. Master data serves not just transactional systems but also warehouses, analytic applications, planning and forecasting, and reporting and compliance. Organizations must also plan to manage data changes as part of their master data strategy.

Why MDM?

Companies are interested in MDM because they know that they can lower costs, increase revenues, and find new opportunities if they have a comprehensive and coherent plan for controlling the important information that forms the nucleus of their business. A long term MDM vision is increasingly becoming a part of many large initiatives companies face today:

Compliance—Growing compliance regulations that demand integrated and consistent views of core data rely on solid MDM.

Smooth B2B exchange—Communicating and even collaborating with business partners to form business processes that flow between enterprises and utilize technologies like RFID and XML require a strategy for managing master data.

Customer data integration—Businesses have found that CRM technologies by themselves have not created the single views of customers that they expected. They now look to integrate additional data residing in discrete data stores across the enterprise, such as call centers, sales, and service.

Information is an asset—Organizations consider master data as a set of information assets, which can have much higher returns on investment than the 5-10% returns of physical and financial assets. Enterprise Information Integration (EII) is one of several approaches to holistically managing information assets.



End-to-End Process for Master Data

Prioritize
Analyze
Correct
Standardize
Integrate
Manage Change
Monitor

MDM Technology Hurdles

No single technology is likely to deliver a complete MDM solution because the technology challenges are large and difficult:

Complex IT landscape—It is not uncommon for an organization to have ten, twenty, or more storage systems: databases, warehouses, hubs, and marts, where critical data is stored. Master data can also be buried in multiple, disparate operational systems.

Diverse and unique business needs—Every organization's priorities and data needs are different and quite specific so it is unlikely that a single off-the-shelf technology will serve many companies, especially if they expect to gain competitive advantage from their MDM initiative.

Many types of technology—Successful master data management requires many sophisticated types of functionality from various areas of data management, business process management, and networking. No single vendor is likely to be able to offer an all-in-one solution that excels in all these.

Technologies to Include

Organizations need to include a number of different types of technologies in order to successfully manage master data:

Infrastructure—Both hardware and networking support

Data transport—Middleware and other methods for moving data between systems

Enterprise architecture—Data models and an application integration plan

SOA—Business processes that cross multiple applications

Data quality—Integrated data with semantic and syntactic consistency across systems

The Data Quality Mandate for MDM

Why is data quality so fundamental for successful MDM? Because data quality, unlike other technologies, focuses on the syntax and semantics of the actual data content. It promotes consistency across records, interprets the meaning of data, and corrects inaccuracies and nonstandard formats. Data quality products are fundamentally designed to solve these data integration issues:

Syntax—Syntax refers to how the data is represented. Data quality tools uncover and correct formatting and coding errors, inconsistencies, and anomalies. They analyze the data structure and identify relationships that exist within the data. They should also show relationships across two or more systems.

Semantics—Semantics refers to the meaning and accuracy of the data content. Data quality tools also interpret the meaning of data within the appropriate context and correct inaccuracies. They should be able to identify misfielded data and find meaning in unstructured data as well.

New Processes Required

Businesses need to establish new processes to enforce data standards and ensure that master data maintains its high quality. These should include data quality checks to prevent errors from entering the systems in the first place:

Data governance—Data governance includes the overall management of the availability, usability, integrity, and security of enterprise data. Central to any successful MDM program, this program manages how data will be integrated and what technologies will be implemented.

Data stewardship—Within data governance, this function tracks and coordinates data models and requirements for each system, and maintains data domains, definitions, etc..

Change management—Creating master data is not a one-time project and must include a long-term plan for anticipating and addressing changes as they come up.

Where Do You start?

If you create scalable, flexible data quality processes, you can begin building master data anywhere and grow from there using repeatable processes. Start with high-priority projects where the results will generate the most concrete and visible returns and highlight the value of good master data. The first project may be consolidating two instances of an ERP or CRM system, or standardizing product data for enterprise-wide reporting and compliance. From there you can expand to include other systems and other data types:

- Start where the impact of poor information is most critical
- Get the business users involved to accurately understand the data you have and what is needed
- Focus on reusable, portable components that can economically and incrementally build master data
- Use automatic rules-based processes that enforce consistency
- Build processes for managing master data across systems
- Expand master data over time

Deployment Options

Building an MDM system is an incremental process and organizations need flexible options for deployment. Here are some architectures commonly used:

Harmonized data in two or more systems—Organizations use a master data framework to harmonize product and/or customer data in two or more systems. They apply the same data quality rules within each system to allow for easy real-time data sharing and updating, then synchronize regularly.

Centralized MDM—A centralized repository for all master data allows companies to capture all data from legacy systems regularly and consolidate it for enterprise-wide reporting and analysis.

Registry layer—A registry creates a single view dynamically upon request, using EII and virtual data federation technologies.

Enterprise service—In a service-oriented architecture, business users using disparate systems can access services that span applications as needed.

Trillium Software Solution for MDM

The Trillium Software System provides a complete data quality solution for analyzing disparate sets of data, consolidating them, and maintaining them over time.

TS Discovery: Data Profiling

TS Discovery has continuously been the innovator in data profiling technology. It goes beyond data profiling with an easy-to-use workspace and tools that facilitate business user involvement in the data assessment process. IT and business users have the same view of the data, abstracted from its technical environment. They can explore the data, flag problems, make notes, and send emails to other team members when they see issues that need to be resolved.

Business user-friendly browser—TS Discovery's intuitive graphical user interface (GUI) makes it easy for business users to look at the source data. It does not require that users know SQL. Rather they can point and click to explore data anomalies and exceptions.

Collaborative workspace—Core integration team members from both business and IT can assess the data, flag specific records or fields for further investigation, and share notes. When multiple users share the same view of the data, they can communicate directly about what data is needed, what data is not needed or redundant, and what the right formats and structure are.

All data profiled—Automatic profiling of all the data makes no assumptions about what the content and structure of the data sets are. Instead it systematically checks for anomalies, outliers, misspellings, dependencies, and possible keys for all the records. It delivers a full report with easy drill-down into the precise data for each point in the report.

Correct and reformat data—Use TS Discovery to correct and standardize name and address data. Reformat columns of information and write rules to normalize any type of data—all directly within the profiling workspace.

Export tables—TS Discovery offers the unique ability to build new tables for export to TS Quality and other applications, thereby streamlining the data quality process.

TS Quality: Apply Data Standards

The leader in data quality software, TS Quality is a rules-based engine that programmatically applies rules and standards to data. This builds and maintains master data, both during initial data migration and on a continuous basis in both real time and batch:

Reusable quality rules—Save time and money while promoting standards for data quality across the organization. Replicate rules created in one project or system and reuse them in another either as they are, or modified to fit new business purposes. The rules are exportable in many formats, including XML. Rules-based processes also ensure consistent results across platforms.

Semantic interpretation—TS Quality interprets the meaning of data on a field by field basis. Context-sensitive technology uses the appropriate context to identify errors, misfielded data, and unstructured text data and then corrects and standardizes it automatically and consistently

Enterprise connectivity—TS Quality provides integrated views of all data across platforms, systems, and geographical boundaries. It provides a fully integrated system for consolidating data from dispa-

rate systems as well as from different countries around the world, automatically. Universal interoperability and rapid integration are the hallmarks of TS Quality. Ready-made connectors reduce development costs for building master data.

Global excellence—TS Quality has built-in rules for interpreting the linguistic, cultural, postal, and electronic conventions of international data on a country by country basis. Development teams from around the world have spent years building and refining hundreds of thousands of rules for the most comprehensive and precise data quality processing available.

Deployment flexibility—External quality rules and platform independence give organizations the flexibility to manage master data centrally or in a distributed configuration with options for scaling up to manage master data across the enterprise.

TS Discovery: Monitor Over Time

Companies also use TS Discovery for periodically assessing the quality of existing master data, measuring the quality of newly acquired data, and acting as a centralized toolset through which master data can be monitored and audited over time.

Total Data Quality in MDM

Successful master data management must use high-quality data. Data quality products from Trillium Software provide a strategy and all the tactics for building and managing consistent master data that can serve multiple business needs and change over time.

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