Enterprise data warehouse (EDW) solutions drive value in a company by providing better decision-making capabilities based on an organization-wide view of the business. Yet the value of any EDW is dependent on the quality and management of the information it contains. Teradata has taken a proactive approach to data management with enterprise data management (EDM) enabled by data warehouse services supporting the enterprise.

Hard facts and figures are essential to making decisions in a high-performance business. Data is quickly becoming the lifeblood of an organization and a valuable enterprise asset. Ongoing research shows that in many organizations, reliable information still is not available when needed, especially at the point of customer interaction. Despite years of investment in IT, data is sometimes inaccessible, inaccurate, incomplete and insecure. Management of enterprise data needs more attention.

Enterprises that implement an enterprise-wide data management program will reap a number of benefits. In broad terms, the benefits accrue in two main categories:

> **Process simplification and operational efficiency.** EDM supports improved insights, analysis, performance and process conformity.

> **Enterprise agility.** EDM supports improved business cycle times, decision making, innovation and competition.

For example, Teradata’s EDM services helped a leading electronics supplier improve operational efficiencies in its supply chain through improved master data management (MDM). Similarly, a leading financial institution improved its agility through better risk and fraud handling based on Teradata’s EDM services.

A guiding principle of EDM is that a successful business must have an integrated, enterprise view of data that is consistent across the organization. Teradata’s EDM approach integrates a number of concepts derived from years of data warehousing excellence into a comprehensive framework consisting of the important data management principles and the supporting people, processes and technology necessary for the data to remain a high-value asset across the enterprise.

To assist you in better understanding the EDM framework, we developed the illustration, left. At the core of the EDM...
services “universe” are services to enhance data modeling and business views of data. These are surrounded by services for metadata management, data quality, MDM, data security/privacy and data integration. Lastly, the themes of data governance and stewardship envelop all of these services.

DATA MODELING AND BUSINESS VIEW
To create an effective enterprise data structure, data modelers and architects work with business users to understand their data usage and requirements. An organization gains the most advantage from data models created using common standards and processes that are consistent with the enterprise’s view of the data. The enterprise logical data model (LDM) is a technical representation of the business’s view of its data, but it’s only a model; a roadmap is needed to help navigate the pathway to data warehouse success and set the appropriate priorities for data warehouse projects.

With the implementation of a data warehouse roadmap, critical business initiatives and capabilities are aligned with integrated data in a manner that sustains, leverages and aligns the corporation’s goals and objectives. Simply stated, it is a business modeling methodology for capturing, displaying and connecting data warehouse planning information.

DATA QUALITY
Increasingly, organizations are using their data for competitive advantage, as a differentiator with their customers and as an enabler of process change. Using data in this manner requires a business case to either reduce costs associated with poor quality or improve results by leveraging the benefits of high-quality data (e.g., deriving greater confidence in analysis, spending less to reconcile data, and working with a single view of the data).

High-quality data, the foundation of any data warehouse and data-driven decision, must be complete, timely, accurate, consistent, relevant and reliable. Initiatives that address only portions of the data quality strategy are ineffective and costly in the long term and are not aligned with overall business priorities.

The following are descriptions of the types of interlocking analyses prescribed by Teradata:
- Data quality maturity. Evaluates capabilities and processes that are critical to a data quality program
- Data quality scope.
- Data quality process.
- Data quality stage.

Learn more from the experts
Teradata is a complete data warehouse service provider with a comprehensive and robust services portfolio. For more than 25 years and under the most demanding environments, Teradata Professional Services consultants have built thousands of data warehouses and have dealt with enterprise data management (EDM) issues in multiple environments. Their collective best-practice experiences with data management and data quality can be applied to solving any EDM issues that might exist in your environment. Teradata’s EDM Services can help you:

- Understand and manage strategic and tactical data, project ownership from a data perspective, and priority setting for data projects
- Define day-to-day activities of creating, using and retiring data
- Describe how, when and by whom data was received, created, accessed, modified and/or formatted

- Determine whether data is fit for its intended use, including completeness and business-rule compliance
- Implement processes to cleanse, transform, integrate and enrich fresh data across subject areas
- Address security and privacy compliance across integrated subjects
- Manage master data by examining data assets and relationships that define enterprise operations

Teradata consultants can help integrate, validate, manage and protect data from its point of origin to its discontinuation. Furthermore, they will help design, load, cleanse, manage and consolidate your data into an enterprise data warehouse for a maximized return on investment.

—L.M.
DATA INTEGRATION
Data integration involves the processes to cleanse, transform, integrate and enrich fresh data in the warehouse. In addition to the normal loading and consolidation of data, data integration addresses error handling, scheduling, process restart capabilities, data administration, gaps in data and audit of its movement. It ensures data is integrated into the warehouse in the timeframes required by the business.

DATA SECURITY AND PRIVACY
Organizations accumulate data from multiple sources into their data warehouse, and this data needs protection from abuse at all times. Teradata’s philosophy advocates securing sensitive data with consistent access rights, and auditing and encryption capabilities implemented within the data warehouse environment. These capabilities focus on:

> **Data security.** Processes and technologies that protect data from unauthorized access, viewing, modification or deletion whether the action is accidental, intentional or malicious
> **Data privacy.** The legal right and expectation of confidentiality in the collection and sharing of data as prescribed by law

METADATA MANAGEMENT
Metadata is structured information about data contained in a data warehouse. Examples of structured information include:

> **Data lineage**
> **Business rules**
> **Transformation rules**
> **Data mapping**
> **Source systems**
> **Structure of data**
> **System of record**
> **Data currency**
> **Data access**

Proper understanding of metadata requires an analysis of the metadata environment, capabilities and requirements focused on understanding the enterprise business problem, determining the level of maturity for the metadata management capabilities, determining business and technical requirements for improving metadata management, and defining a high-level architecture recommendation.

MASTER DATA MANAGEMENT
Master data is the fundamental business data in an enterprise. Managing the core data assets and relationships that define enterprise operations involves:

> Extraction of master data from operational and reporting systems to a central hub
> Application of data quality standards to get a clean set of master data
> Reconciliation of differing data to achieve one view of the master data
> Synchronization of participating operational and reporting systems with the centrally managed, canonical master data
> Monitoring changes and updates to master data in participating systems

Enterprise-wide MDM needs to be coordinated with an enterprise information governance initiative.

DATA GOVERNANCE AND STEWARDSHIP
Data stewardship defines the continual, day-to-day activities of creating, using and retiring data. Data stewards are responsible for formal accountability and management of all enterprise data. The following are data stewardship functions with a non-inclusive description of what each task involves:

> **Data management.** Data models, demographics, naming standards, metadata requirements and storage requirements
> **Data usage.** Access, security, queries/reports, system use, quality and available metadata
> **Data acquisition.** Quality expectations, definition/promotion processes, update rights, validation rules and business rules
> **Data disposal.** Retirement and erasure of old data

While data stewards do not own the data, they are the caretakers accountable for the management of data assets by ensuring the enterprise understands, uses and shares its data effectively. Data stewards manage data assets needed within the enterprise to establish detailed rules and procedures.

**Enterprise information/data governance**
Successful information and data governance integrates the processes, people and technology needed to manage data effectively and efficiently as a critical corporate resource. Data governance includes the processes, policies, standards, organization and technologies required to manage the availability, accessibility, quality, consistency, auditability and security of the data in an enterprise. The combination of these components constitutes the EDM “universe.”

*Lance Miller has been with Teradata for nine years as a director of services marketing.*

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**For more information about Teradata’s EDM Consulting Services, contact your local Teradata representative or visit Teradata.com/datamanagementservices.**