



## Data Quality Basics

### What Do Data Quality Products Do?

Data quality products allow you to define and automate data standards, to ensure that data within your organization is captured and stored in such a way that it can be shared with other applications and systems at any time. They provide mechanisms through which you can assess the level of data quality, identify problems, develop processes that automate fixing those problems, then monitor data quality over time.

### What Are the Benefits of High Quality Data?

Using data quality products results in a number of advantages:

**Efficient operations**—ERP and CRM systems, e-commerce sites, and other transactional systems have lower error rates.

**Accurate reporting**—Day-to-day operations and strategic planning units receive reports that accurately reflect the business.

**Insightful analysis**—Forecasting, target marketing, and business intelligence tools produce better and more trustworthy results.

**Better customer service**—A unified view of contact information, purchase history, and preferences gives customer-facing resources the information needed to best serve and interact with customers.

**Increased revenue**—Identify cross-sell and upsell opportunities, effectively manage accounts, and understand and anticipate customer buying patterns through a harmonized customer view.

**Reliable compliance**—Meet regulatory requirements with accurate reporting and establish provable, repeatable business processes related to data management.

### Automate Data Quality in:

#### Applications

CRM, SFA, ERP, SCM  
E-Commerce, HR

#### Enterprise Architectures

Data Warehouses,  
Master Data Mgmt,  
SOA, Data Integrations

## Where Should You Implement Data Quality Software?

Organizations implement data quality products in a number of different systems since data changes rapidly and is often reused or recaptured across many disparate systems. Data quality processes are regularly incorporated in:

**CRM systems** to provide the foundation for a unified customer view.

**ERP systems** to eliminate transaction errors especially before the information becomes replicated in other systems.

**Data warehouses** to enforce standards and synthesize data for downstream applications.

**E-commerce** applications to ensure that data coming into the enterprise systems is accurate and complete from the start.

**Service-oriented architectures** to offer reusable, rules-based data standards that can be incorporated into complex business processes, in real time.

**Data integrations** to reduce the risks involved in consolidating large volumes of data and moving it from one system to another.

Organizations often start addressing data quality with a system or application known to have bad data or as part of a systems development effort. The highest gains are achieved when the same data quality processes are subsequently rolled out to all source systems receiving new data.

## Building High Quality Data

Advanced data quality products provide the key tools necessary to create high quality integrated business information from data stored in various sources. The data quality process includes several steps:

**Investigate** data. As a collaborative effort between the business and IT, assess data for content, structure, and relevant relationships between fields, records, and across systems.

**Design** data standards. Understanding the data that exists within your organization and the needs it services, establish standards definitions and rules to be enforced programmatically over time and across systems.

**Automate** data quality. Incorporate standards into data integration initiatives, migration efforts, and real-time processes.

**Supplement** and enrich data. Use third-party sources for demographic, corporate, and industry-standard information.

**Monitor** data quality. Measure results and adapt rules systematically over time to meet new business needs.

## How Do Data Quality Products Differ?

Data quality products differ in ways that can expand or limit the success of the entire initiative. Consider reuse, range of data types handled, deployment options, and breadth of interpretive power. Here are some distinctions to consider:

### Architecture: External vs Internal Rules

Ask data quality vendors whether their rules are external and what exactly they mean by “customizable.” Most data quality products use some sort of rules-driven processing, but differ in the degree to which customers can define and refine those rules. Products are limiting if rules created for one system cannot be easily reused in another one with different system specifications. Reuse is significant for saving time and money, simplifying maintenance, and ensuring consistency.

### Range of Data Types

Some data quality products only handle name and address data but data quality applies to all types of data. As companies strive to harmonize information from multiple ERP systems, manage master data, and meet government regulations, applying standards to all types of data has become a more important requirement.

Even if an organization's priority is customer data, this could include: product names, services rendered, point-of-sale transactions, and credit, demographic, and contact preference information.

### Sources for Global Technology

Each country has its own linguistic, cultural, postal, and electronic conventions so rules for handling data are country specific. Data quality vendors differ in how they build their country rule sets. Vendors may purchase or license technology from companies in each country or alternatively develop their global capabilities for their product in house.

Vendors who acquire technology for individual countries may vary considerably in the depth and breadth of their coverage from country to country. They also do not have direct control over the technology and may change their suppliers from time to time. Consider what markets and supply chain sources you may be expanding to in the future as you evaluate data quality products. Growth opportunities in China or Brazil could be part of your business's strategy next year.

### Deployment Options

Companies today deploy data quality products in a variety of environments: real-time, using third-party applications, in service-oriented architectures, in Web services, in data integration routines and independent batch processes. No one can always know what systems and platforms they will be dealing with in the future. Some data quality platforms operate on all platforms, and others work only on a limited number. Some vendors state that they operate on a wide variety of platforms, but actually require customers to purchase separate products.

### Interpreting Meaning in Context

The best data quality products intelligently interpret the meaning of data within the appropriate context. But some products apply their rules to single fields as opposed to across fields and fail to properly identify data that has been placed in the wrong field.

Identifying the meaning of misfielded data or unstructured text data is especially tough to do. Ask data quality vendors whether their rules work only for individual fields and if they can be applied across a broader context. Find out if and how they handle unstructured data.

## Trillium Software System® for Data Quality

The Trillium Software System provides a suite of products that help companies consistently create and maintain high quality data throughout their enterprise systems:

### TS Discovery

TS Discovery provides a collaborative environment for business and IT resources to profile large volumes of data to assess its level of quality. TS Discovery allows users to understand data domains, formats, patterns, and relationships, as they exist within the data itself. It also allows users to look for conformation to specific business rules and defined data standards. TS Discovery can later monitor systems for anomalies and periodically assess data to ensure that high quality is maintained.

### TS Quality

TS Quality is the leading global data quality software product used by major corporations around the world. It offers all the features and tools needed to build data quality processes into the enterprise. Whatever data quality priority you have—whether to cleanse name information, correct and verify international addresses, standardize product data, consolidate customer information—you can obtain high-quality information according to your own standards and information needs when using TS Quality.

### TS Enrichment

Over 5000 third-party sources of demographic, corporate, and postal information are available to TS Quality customers to add more information to existing records, including National Change of Address (NCOA).

## Trillium Software® Advantages

### Connectivity Options

Universal interoperability and rapid integration are hallmarks of the Trillium Software System. Designed for the future, it reduces development costs for either centralized or distributed data quality processing in real-time and high-performance batch:

**All platforms**—Fully Unicode-enabled, it handles data from all types of systems.

TS Quality works in all types of environments: mainframes, service-oriented architectures, Web services, to name a few. The system works seamlessly to ensure repeatable results across multiple platforms.

**Connectors**—Integrates with all major ERP, CRM, and ETL applications to simplify development and implementation efforts.

### High-Performance Director

The Director for TS Quality provides high-powered multithreading for subsecond processing and precision load balancing across multiple servers. It handles mixed international data sets, applying country-specific rules on a record-by-record basis.

### Apply Conditional Logic to Records

Sophisticated and flexible controls at the record level automatically identify individual records that require specific processing.

### Reusable Rules

Save time and money while easily establishing standards for data quality across the enterprise. Rules created in one project are readily portable. Companies can replicate them to reuse as they are or they can adopt existing rules for new business purposes. The rules are exportable in many formats, including XML.

### Global Excellence

Trillium Software has developed its own modules for every country. Customers can purchase modules as they need them. The Trillium Software System handles mixed international data sets seamlessly. Its core product provides a fully integrated system for correcting, improving, and standardizing all data no matter where it originates. It is Unicode-enabled to ensure consistent processing for single- and double-byte data.

### All Types of Data

The Trillium Software System handles all types of data, not just names and addresses. Customers successfully use Trillium Software products to manage master data, create enterprise-wide reports, control inventory, track distribution and fulfillment, and many other basic business functions outside the realm of name and address information.

### A Foundation for Enterprise Information

A scalable and comprehensive data quality solution helps organizations obtain the high quality business information that they need today. It also lays the groundwork for easily extending and promoting high-quality data standards for the future through strategic reuse, rapid integration, and seamless connectivity.

Forward-looking companies today understand that data integration and data quality are ongoing, critical issues and that the requirements will continue to change as the data itself changes and as the business needs evolve over time. They invest in the best data quality products because they understand that they will have more systems, more platforms and different data to deal with tomorrow than they have today. By building an integrated foundation, they ensure a data quality system that will serve their future purposes, wherever, however, whenever high-quality data is needed.

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