

Customer Data Integration (CDI)

Though customer expectations are higher than ever, the financial benefits of keeping customers happy and loyal are substantial. CDI has emerged as a key component of the infrastructure needed to ensure competent, timely, and efficient interactions with customers.

CDI allows organizations to offer world-class customer experiences by providing an understanding of the complete relationship with each customer, centrally managing customer privacy and preferences, anticipating customer service needs, and sometimes even allowing customers to manage their own profile information.

CDI improves productivity across the entire enterprise as well. It allows for streamlining operational processes like billing, shipping, collections, returns, and recalls, by providing a single, consistent, and complete view for all operational systems to utilize. This prevents data across different systems from becoming duplicated or out of sync, thus improving downstream reporting.

Where Does Customer Data Go Wrong?

There are a number of naturally occurring challenges inherent in customer data, that make it difficult to manage:

Inconsistent information—the same concepts are captured and stored using different code values in different systems. Alternatively, the same data value might convey very different information from one system to the next.

Uniqueness of keys across systems—Each system may have unique keys, but keys are not usually distinct across systems.

Global breadth of customer base—Managing customers across international borders introduces additional cultural nuances such as different name or address elements, contextual interpretations, privacy laws, organizational hierarchies, etc.

Relationships across records—Data naturally contains numerous duplicate records, along with customer to customer, and customer to business relationships, that provides a wealth of insights if properly organized.

Add to these issues large volumes of data and the level of volatility of customer data, and managing these challenges over time becomes nearly impossible without automation.



Benefits of CDI

- High customer satisfaction
- Improved operations
- Increased revenue
- Respected customer privacy
- Compliance with regulations
- Improved analytics
- Fast customer service
- Effective cross-sell
- Prevent fraud exposure

What Problems Result?

Without a CDI strategy and the technological infrastructure to support it, failing to effectively integrate customer data results in a wide variety of business shortcomings:

Missed expectations—of customers who have shared information with some part of your organization

Lack of compliance—with customer privacy and preference options

Clumsy operations—such as shipping, invoicing/billing, collections, marketing

Revenue leakage—from incomplete or inaccurate billing

Safety risks—related to incomplete or hindered product recall communications

Redundant and inconsistent communications—with customers due to lack of insight about their entire relationship with you

Poor decisions—due to poor or mis-information

Complicated mergers and acquisitions—create significant risk for customer flight if you cannot communicate the right message to customers or send multiple or conflicting messages

CDI Hurdles

There are a number of challenges that tend to surface as a CDI solution is being designed and implemented. Plan for a CDI solution that will provide your organization with options and flexibility for incorporating the following common speed bumps:

Different definitions of 'Customer'—Very few complex organizations (e.g., those with multiple lines of business or varying brands and products) have a single, uniform definition of customer. Most require several different definitions to be managed simultaneously. CDI solutions **MUST** be able to accommodate this requirement and any changing definitions over time, for long-term success.

Tracking and managing changes over time—With compliance concerns, tracking and managing changes to customer data over time must include auditable traces so that anyone can determine why records have been integrated, where data was sourced, and what information changed when.

Enforcing standards—Automation of customer data standards provides consistency across source systems and ensures that data can easily be integrated across systems at any point in time, achieving consistent results. The catch is being able to add, change, or remove standards easily over time, to quickly meet changing business needs. The technology should support the business, not slow it down.

Build or buy?—After a CDI initiative starts to take shape, your organization will soon need to determine whether to build or buy a CDI solution. Do vendor applications meet all the detailed requirements and will they continue to meet those needs over time, or does it make sense for your organization to assemble two or more best of breed technologies to meet your specific requirements? Plan for future change and do not be shortsighted as you investigate your technology options.

Three Components of a CDI Solution

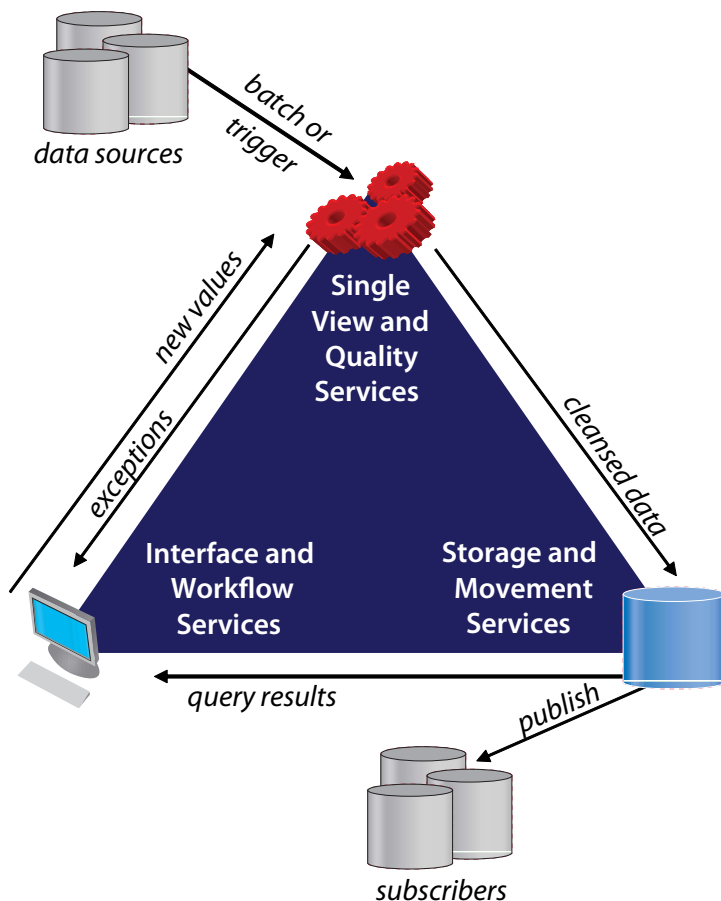
CDI solutions consist of three major components (each with a specific set of services), regardless of whether you build a system in house, purchase a packaged CDI application, or use a best-of-breed approach.

Single-view and quality services—The most powerful benefit of a CDI solution is the delivery of a single customer view that contains accurate, complete, consistent information over time. The services that establish and govern this volatile view must allow users to establish rules-based methods of cleansing, standardizing, and linking data from multiple sources. They must

allow field-level survivorship rules to update the changing view over time, and should support multiple levels of a customer to be managed (individuals, households, sites, contacts, corporate households, etc.). These services should be extensible to new sources and easily modifiable to accommodate changes in the business environment.

Storage and movement services—There must be a place where data is stored, as well as mechanisms to move data from source systems to the CDI repository and (sometimes) out to subscribing applications. The amount of data, the data model, and the fields included as part of the repository will all vary, depending on your needs and strategy. The technologies used to store and move data include CDI hubs, ETL and EII tools and other types of middleware.

Interface and workflow services—CDI solutions have an interface through which users can define workflows and can directly interact with the data itself. Data entry, hierarchy management, validations and approval processing, exceptions processing, and workflow definition are all areas of consideration for a CDI solution.



The Data Quality Mandate for CDI

Why is data quality so fundamental for successful CDI? Because it promotes consistency across records, corrects inaccuracies, and enforces compliance to defined standards. Data quality products are fundamentally designed to address the syntax and semantics of the actual data content.

Syntax—How is the data represented? Data quality tools uncover and correct formatting and coding errors, inconsistencies, and anomalies. They analyze the data structure, identify relationships that exist within the data, and show relationships across systems.

Semantics—What is the meaning and accuracy of the data's content? Data quality tools interpret the meaning of data within the appropriate context and correct inaccuracies. They identify misfiled data and find meaning in unstructured data as well.

Trillium Software Solution for CDI

The Trillium Software System provides a complete solution for creating and maintaining a high quality single customer view.

TS Discovery: Data Profiling and Monitoring

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. Without knowledge of SQL, 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 or anomalies and exceptions that need attention.

Profile across systems—Automated data discovery makes no assumptions about the content and structure of data. Instead it systemati-

cally checks for anomalies, outliers, misspellings, dependencies, and possible keys for all records. It even allows users to look across systems using the same profiling functionality.

Collaborative workspace for design

Integration team members from both business and IT can assess data, flag specific records or fields for further investigation, and share notes. When multiple users share the same view of data, they can communicate directly about what data is needed, what data is not needed or redundant, and what are the right formats and structure to design in the CDI solution.

Monitor over time—TS Discovery provides an interface through which you can define and monitor specific data conditions and overall quality over time in addition to investigating new data sources. Alerts and workflows can be created and executed for ongoing governance.

TS Quality: Create a Single View

TS Quality is a rules-based engine that programmatically applies rules and standards to data. These rules define how to build and maintain customer master data, during both initial data migration and on a continuous basis in real time and batch:

Cleanse and standardize data—Programmatically apply data quality standards to incoming customer data, regardless of the source system. Use the same set of rules for all systems, or supplement with system-specific processing. TS Quality ensures that all data entering your CDI environment adheres to the quality standards defined by your organization, and corrects data that falls short of expectations.

Match and link records—Identify duplicate records within and across source systems using a rules-based approach that allows for variances within data values. The business can define multiple ways of identifying the same customer using different data and different thresholds of similarity. Also identify relationships among records beyond simple identification of the same person, site, or business. Understand how individuals are householded, business and contact relationships, and business to business relationships.

Create a single view—Using all the data available across your source systems, create a single best record to represent each customer. As new data enters your CDI environment, update your view using a rules-based approach that allows the flexibility to define an update strategy for each specific type of data, whether it is based on recency, preferred sources, completeness of data values, or other business rules.

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 this content for the most comprehensive and precise global processing available to incorporate into your CDI environment.

CDI Application Integration

TS Quality rules and processing are designed to fit within your existing or planned environment. The product is designed to offer options and flexibility to customers. Processes can be configured and deployed as a set of centralized services to use as either real-time or scheduled batch processes within the CDI hub as well as any other quality and integration processing.

TS Quality has been successfully deployed as part of custom CDI applications and enterprise CDI SOA solutions as well as solutions using other packaged applications including: Oracle Customer Hub, Siebel UCM, Siperian Transactive Hub, IBM WebSphere Customer Center, and SAP applications.

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