ORACLE CUSTOMER HUB

TRUSTED MASTER CUSTOMER DATA

• Comprehensive Customer Data Model

• Roles and Hierarchical Relationships

• Vertical and Related Child Data Entities

• Industry Variants: Includes Financial Services, High Tech, Communications, Higher Education, etc.

CONSOLIDATE

• List Import Workbench for business friendly approach to load data.

• Cross Reference of Parent and Child Entities

• Source Data History for Data Lineage and Rollback

• Rules Based Survivorship for Parent and Child Entities

CLEANSE

• Address Validation against postal reference files

• Enhanced Matching on all names, address and identification data including multi-language

• Data Decay detection, metrics and prevention capabilities.

• Guided Merge/Un-Merge

• Enrichment with 3rd Party content providers.

GOVERN

• Data Governance Manager

• Advanced Hierarchy Policy and Privacy

• Management

• Enhanced Stewardship: Includes richer set of features and better user experience.

• MDM Analytics: Includes Completeness and Accuracy Dashboards

Oracle Customer Hub (also known as Siebel Universal Customer Master or Siebel UCM) is Oracle's lead Master Data Management (MDM) solution. Oracle Customer Hub (OCH) leverages the unrivaled domain expertise of the Siebel Customer Relationship Management data model and platform. This has been further developed to provide for MDM-specific functions & Best Practice processes to deliver a rich and complete MDM solution with many unique capabilities. OCH's comprehensive functionality enables an enterprise to manage customer data over the full customer lifecycle: data capture, standardization and correction of names and addresses; identification and merging of duplicate records; enrichment of the customer profile; enforcement of compliance and risk policies; and the distribution of a "single source of truth" best version customer profile to operational systems.

Overview

Oracle Customer Hub is designed to perform as a source of clean, complete, distinct and accurate customer data for the entire organizational enterprise. The primary roles of OCH are:

• Consolidate & govern a unique, complete and accurate set of Master Customer information from across the enterprise.

• Track & maintain changes over time; enhance and deepen the context.

• Distribute this information as a single point of truth to all operational & analytical applications just in time

To accomplish this, OCH is organized around five key pillars with many distinct capabilities under each pillar. The following figure illustrates these pillars of Oracle Customer Hub.
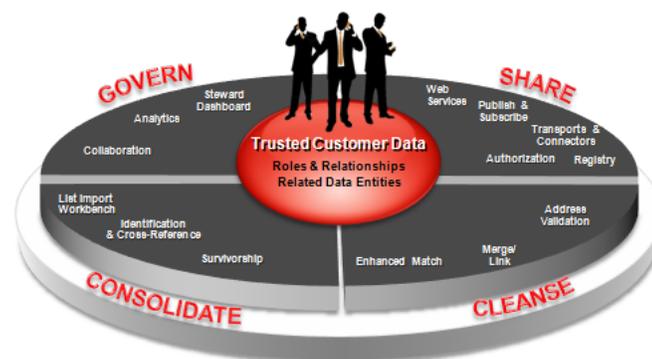

Figure 1: Detailed OCH functionality

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SHARE

- Composite and Granular Web services Library
- Pre-built Integration with Operation applications using AIA

KEY BENEFITS

Oracle Customer Hub delivers a high return on investment by enabling an organization to realize the following key benefits:

BUSINESS GROWTH

- Increases Cross- sell/up- sell
- Improves call center productivity
- Reduces marketing mailing costs
- Improves customer retention

OPERATIONAL EFFICIENCY

- Reduce data management costs
- Lower sales order errors
- Reduce sales cycle time(B2B)
- Improve campaign response rate

COMPLIANCE

- Reduce non-compliance risks
- Reduce credit risk costs
- Lower reporting costs

IT AGILITY

- Reduces cost by sun- setting legacy systems
- Improve time to take new projects to market
- Lower TCO

- **Trusted Customer Data** is held in a central MDM schema.

- **Consolidation** services manage the movement of master data into the central store.

- **Cleansing** services de-duplicate, standardize and augment the master data.

- **Governance** services control access, retrieval, privacy, audit and change management rules.

- **Sharing** services include integration, web services, event propagation, and global standards based synchronization.

These pillars utilize generic services from the MDM Foundation layer and extend them with business entity specific services and vertical extensions.

Master Trusted Customer Data

Oracle Customer Hub masters trusted customer data that includes the following key characteristics:

- **Comprehensive Customer Data Model**
  The OCH data model is an enhanced version of the Siebel Party model (as used in Siebel CRM) and has evolved and developed over many years to the point where it is able to master not only the customer profile attributes required in the front office but also those required by all applications and systems in the enterprise

- **Roles and Relationships**
  OCH provides support for managing the roles and hierarchical relationships not only within a master entity but also across master entities. In addition, OCH also provides capabilities to view and store hierarchical history information of master records.

- **Related and Child Data Entities and its Configuration**
  OCH is designed to store all related and child level customer entities such as Addresses, Related Organizations, Related Persons, Assets, Financial Accounts, Notes, Campaigns, Partners, Affiliations, Privacy and so on. By leveraging the proven Siebel platform, OCH enables users not only to customize and extend existing entities but also to add new child and related entities.

- **Industry Variants**
  The prebuilt customer data model is designed to model and store the customer profile attributes for many major vertical markets and industries, including, but not limited to: Financial Services, Telecommunications, Utilities, Media, Manufacturing, Retail Consumer Goods, HighTech, Public Sector and Higher Education..

Consolidate

Customer data is distributed across the enterprise. It is typically fragmented and duplicated across operational silos, resulting in an inability to provide a single, trusted customer profile to business consumers. It is often impossible to determine which version of the customer profile (in which system) is the most accurate and complete. The "Consolidate" pillar resolves this issue.
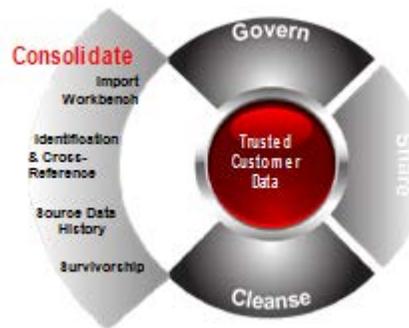
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Figure 2: Consolidate

OCH solves this problem by delivering the rich set of interfaces, standards compliant services and processes necessary to consolidate customer information from across the enterprise. This allows the deploying organization to implement a single consolidation point that spans multiple languages, data formats, integration modes, technologies and standards. Some of the key features in the "Consolidate" pillar include:

- **List Import Workbench**
  The List import workbench has been enhanced significantly to empower business users to load data into the hub through metadata and template driven approaches including support for flat files, XML files and excel files. The import workbench also includes new user interfaces to resolve error conditions. In addition to providing a high performance, high volume batch import, the list import functionality is also available as a web service for real time integration.

- **Identification and Cross-Reference**
  To capture the best version customer profile, OCH provides a prebuilt and extensible customer lifecycle management process. This process manages the steps necessary to build the trusted "best version" customer profile: identification; registration; cleansing; matching; enrichment; linking; to create the best version customer profile. The best version customer record also leverages UUID to uniquely identify the record across the entire enterprise. The customer record along with the related child records are tacked across the enterprise by using one-to-many cross referencing mechanism between the OCH customer Id and other applications' customer records.

- **Source Data History**
  OCH also maintains a history of the changes that have been made to the customer profile over time. This history allows the Data Steward to not only see the lineage associated with a customer record, but also provides the ability to optimize the source and attribute survivorship rules which contribute to building the "best version" record. The history also enables the Data Steward to roll back the system to a prior point in time to undo events such as a customer merge.

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- **Survivorship**

  The data stewardship and survivorship capability consists of a set of features and processes to analyze the quality of incoming customer data to determine the best version master record.

  Rules Based Survivorship: OCH has been significantly enhanced to include rules based survivorship that now not only includes pre-seeded rules through its integration with Siebel Business Rules Engine (Haley) but also allows users to define any new rule in addition to allowing users to integrate OCH with any other rules engine. OCH also includes support for new rule types like Master and Slave that would determine survivor and victim records. Finally OCH also supports configuring survivorship rules for Household and any child entity associated with the Master record.

CLEANSE

Centralizing the management of customer data quality has always been a goal of Customer Hub solutions.

Figure 3: Cleanse

The "Cleanse" pillar in OCH, as shown in figure 3, provides an end-to-end integrated data quality management functionality with Oracle Enterprise Data Quality to analyze/profile the data, standardize and cleanse the data, match and de- duplicate the data and finally enrich the data to create the best version master record. The key capabilities of the Cleanse pillar include:

- **Address Validation:**

  Mailing address data is the most fundamental information used by the operational systems. Inaccurate address data results in lost revenue, increased costs and inefficient business processes. Oracle Enterprise Data Quality Address Validation Server delivers powerful and comprehensive parsing and address validation features by including pre-integrated adapters to Enterprise Data Quality products.

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Parsing: In addition to parsing addresses into its component fields in a "5 line" unstructured format using country tables and parsing rules, the parsing server also recognizes and separates non-address related data.

Address Validation & Correction: The address validation server validates the address against the country's postal reference files. Te level of validation depends on the level of detail in the postal reference file and can happen either in "suggest" mode, where the best matched address is recommended or in "certify" mode where the extended attributes like zip + 4 are retrieved.

- **Enhanced Matching:**

  OCH delivers superior matching functionality through its pre-integrated adapters to Oracle Enterprise Data Quality (OEDQ) Matching Server. OEDQ Matching Server provides high quality search & matching on all types of name, address and identification data including Person Names, Organization Names, Address elements, Dates, Telephone numbers, Product Names and Social Security/Drivers License/Passport Numbers etc. OCH supports highly flexible search strategies, which can be selected based on the data being searched for, the level of risk and the need that the search must satisfy, allowing users to balance performance and comprehensiveness of search/match. OEDQ matching server can also emulate an expert's ability to match across many attributes. The matching server also uses smart indexing to cut through error and variation in Customer data (including spelling, phonetic, transliteration and multi-country data errors, as well as any missing or out-of-order words and other variations), to help enterprise discover duplicates and establish relationship both in real time and batch.

  Multi-Language: This feature enables customer with multi geographical implementations to use different Search Criteria/Match Rules for records with different Languages/Countries.

  Enhanced Suspect Match: The suspect match functionality has been enhanced to prevent any disruption of business processes. This is accomplished by actually creating the suspect incoming record and flagging for review later rather than not creating it as was implemented in previous versions of OCH.

- **Data Decay**

  Data decay refers to the way in which managed information becomes degraded or obsolete or stale over time. OCH provides data decay dashboards to monitor and fix the data decay of Account and Contact records. These dashboards are accessed through the OCH administration screens.

  OCH Data Decay management consists of the following key components:

  Decay Detection: Captures updates on the monitored attributes / relationships of a record and sets the decay metrics at the attribute level granularity or relationship level granularity.

  Decay Metrics Re-Calculation - Process to retrieve Decay Metrics for the monitored attributes/relationships of a record, use a set of predefined rules to calculate the new metrics value and update the metrics.

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Decay Correctness - Identifies stale data based on certain criteria and triggers a pre-defined action. Data decay monitors can be configured on column and records level. And can trigger actions based on some pre set criteria for example we can make a rule that when data is decay indicator for consumer address field reaches 80 then we automatically trigger enrichment call to Acxiom to get the latest information about the consumer address.

Decay Report - generates Decay Metrics charts on a periodic basis

- **Guided Merge & Un-Merge**
  Guided Merge allows end-user to review duplicate records and propose merge by presenting three versions (Victim, Survivor and Suggested) of the duplicate records and allows end user to decide how the record in the OCH should look like after the merge task is approved and committed. Similarly the Un-Merge feature rolls back a previously committed merge request.

- **Enrichment**
  OCH provides an out of the box integration with enriched content from external providers
  such as Acxiom, Experian and Dun & Bradstreet.

- **High Performance**
  Oracle data quality solution has a proven track record in terms of scalability and performance, handling large volume, highly-scalable, critical applications. The key enablers include

  - o Enhanced connector with Session Pool Management

  - o Enhanced index management that enables faster synchronization and incremental load support.

  It is a highly-scalable solution with proven performance on systems with billions index entries on one database and millions real-time transactions in an hour

GOVERN

Data a governance is a framework that specifies decision rights and accountability on the data and all data-related processes. In other words, this framework determines who can do what with which data fields, at what stage and under what circumstances. The "Govern" pillar in OCH, as shown in Figure 5, enables users to "govern" master data across the enterprise using a few key capabilities that includes Data Governance Manager, Advanced Hierarchy Management, Policy & Privacy Management and a few others like analytical dashboards, enhanced stewardship and history and audit features.
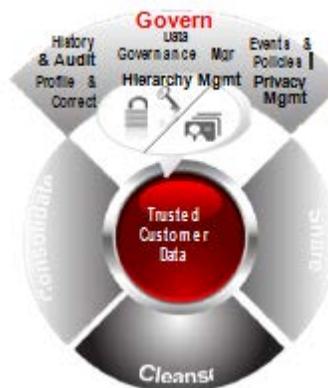
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Figure 4: Govern

- **Oracle Data Governance Manager**

  Oracle Data Governance Manager (DGM) is an intuitive graphical user interface (Figure 5) that acts as a centralized management destination for data stewards and business users to manage customer data throughout the customer data lifecycle.

Figure 5: DGM Screenshots

DGM enables users to:
  - Define and view enterprise master data and policies
  - Monitor data sources, data loads , data transactions and data quality metrics
  - Fix data issues and refine data quality rules
  - Operate – Consolidate, cleanse, share and govern – the hub

- **Policy & Privacy Management**

  The Siebel Privacy Management Policy Hub enables an enterprise to centralize the enforcement of Privacy policies within an OCH or CRM deployment. This module extends the standard customer master, making it a central policy hub and enables companies to comply with privacy rules and regulations by deriving or capturing a customer's privacy elections. The policy's rules are enforced based on corporate or legislative regulations, periodic events, or changes in privacy elections. Integration with external systems enables changes made to a customer's

privacy status to be published or consumed.

- **Enhanced Stewardship**
  OCH Data stewardship capability has been enhanced to not only deliver richer set of features but also to provide a better user experience to accomplish the Consolidate and Cleanse functions. The new enhancements and capabilities that were described earlier in the Consolidate and Cleanse pillars include enhanced survivorship, enhanced merge function guidance and enhanced suspect match functionality.

- **MDM Analytics**
  MDM Analytics dashboards enable data steward to quickly and proactively assess the quality of customer and contact dimensional data entering OCH.
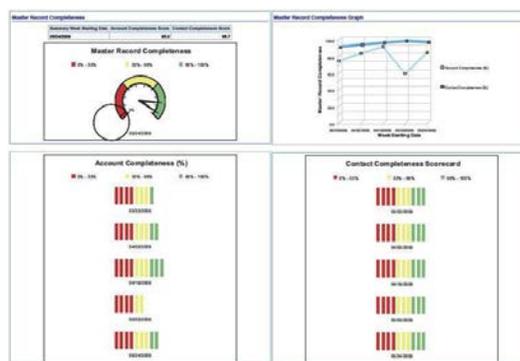
Figure 6: MDM Analytics: Completeness Dashboard
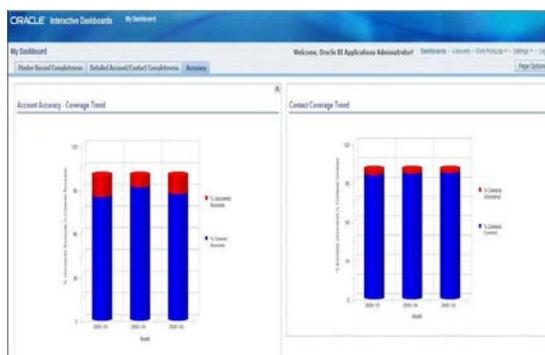
Figure 7: MDM Analytics: Accuracy Dashboard

Through its ease of use, the dashboards like Master Record Completeness (Figure 6) and Master Record Accuracy (Figure 7) accelerates the data's time- to-value and helps to drive better business results by:

- Pinpointing where data quality improvement is needed;
- Enabling the data stewards to take corrective action to improve the quality and completeness of the Customer and Contact data; and,
- Helping to improve organizational confidence in the information.

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SHARE

Clean augmented quality master data in its own silo does not bring the potential advantages to the organization. For MDM to be most effective, a modern SOA layer is needed to propagate the master data to the applications and expose the master data to the business processes. The share pillar in OCH, as shown in Figure 10, provides capabilities to share the vest version master data to the operational and analytical applications.

Figure 9: Share

The key capabilities in this pillar include:

- **Web Services Library**

  OCH contains more than 20 composite and granular web services. These services provide a handle to expose day to day operational and analytical functionality that customer's operational and analytical applications can consume to expose this functionality. These services include:

  - *Sync Services:* Sync Services enables OCH to create and update Organizations, Persons, Groups and Financial Accounts.
  - *Match Services*: Match Service enables other consuming applications to perform a match for Organizations, Persons, Groups and Financial Accounts.
  - *Cross-reference Services*: X-Ref services implements cross-referencing functionality by associating master records with corresponding records residing in other operational applications
  - *Merge Services*: Merge Service performs merge of more than 1 customer master records.
  - *Governance Services*: Governance services are those services that are part of the Data Governance Manager to expose the key hub functions of Master, Consolidate, Cleanse, Govern and Share in addition to the govern function.

- **Pre-Built Integration with Operational Applications**

  OCH also includes pre-built connectors that connect OCH with other participating applications. These connectors are built leveraging the Application Integration Architecture (AIA) framework using the Fusion Middleware. The pre-built integration solution consists of 3 complementary components in addition to the composite web-services in OCH.

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AIA Integration Processes: These processes are pre-cabled Application Integration Architecture (AIA) Process Integration Packs (PIPs) connecting OCH to Siebel CRM, Oracle E-Business Suite, Oracle Billing and Revenue Mgmt (BRM), SAP and third-party content enrichment providers. These processes support 2 modes of integration scenarios: Push Mode and Pull Mode.

PushMode: In this mode of operation (Figure 10), the operational applications (Siebel, EBS, BRM, SAP ...) act as "passive" applications by sending new or updated customer/master information to the hub for cleansing, de-duplication and enrichment. The hub then in turn publishes the cleansed golden version to all the participating applications that can consume the message or not based on their appetite to subscribe to these messages.
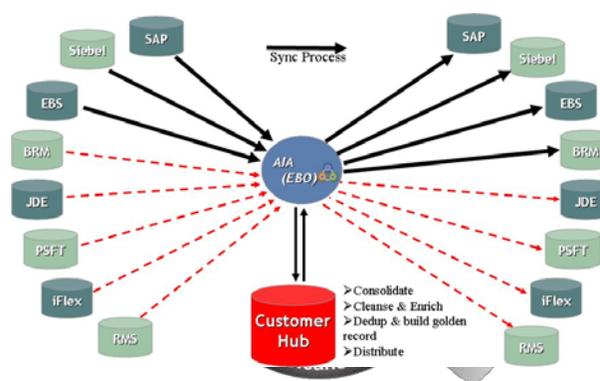
Figure 10: PushMode

PullMode: In this mode of operation (Figure 11), source/consuming apps interact with the hub in real time by executing synchronous integration processes at the time of data entry. The processes that operate in Pull mode include the following:

- o   Match process: the participating apps queries the hub for searching (fuzzy) matching records to a list of criteria

- o   Fetch process: once the record is selected, the participating app asks the hub for the entire profile of this record and replicates this data into its own database

- o   Sync process: This happens after the fetch wherein any modification of the customer record in the operational app is synced back to the hub.
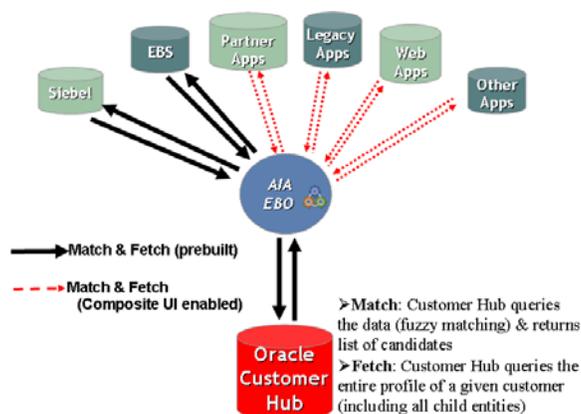
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Figure 11: PullMode

MDM Aware Apps: MDM Aware application is any modified and integrated application that assumes that its customer data resides outside its own database and in the external MDM system. The pre-built integration solution with the OCH includes enhancements to Siebel CRM and Oracle E-Business Suite that makes them "MDM Aware".

Composite UI Framework: A composite application user interface enables non-Oracle applications such as legacy and web applications to also become" MDM Aware". By leveraging the composite UI framework, customers can easily embed the UI into any other application so the users could avail of the Match/Fetch and Sync processes with minimal effort.

- **Pre-Built Integration with Analytical MDM**

  As the trusted customer master, OCH is ideally integrated with the enterprise analytical systems. Oracle optionally provides pre-built integration between OCH and Oracle Business Intelligence Enterprise Edition (OBIEE). Prebuilt ETL processes extract information from OCH and load it into the OBIEE Data Warehouse. OBIEE provides a number of Information Dashboards for the Data Steward to monitor the quality of customer information. These dashboards ensure the Data Steward has all the information necessary to optimize and improve data quality.

OCH PLATFORM

Over a decade of continuous improvement and enhancement have made the Siebel architecture a hugely capable application platform for deploying customer centric solutions. Many customers have deployed this platform with databases that contain many hundreds of millions of customers. Thousands of organizations across the globe rely on the Siebel platform to manage their global customer information in a secure, reliable and scalable manner. The OCH platform comes with a few major characteristics that truly make it the leader in MDM platform:

- **Configurability and Customizability**

  The Siebel platform has also been designed for rapid configuration and customization, with broad extensibility in mind. The OCH application is declaratively defined using Siebel Tools, and the resulting metadata is stored in a central repository. This metadata includes the business object model and the data entity model, allowing existing objects and entities to be extended, and new objects and entities to be created and linked to those

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objects already in existence. A major advantage of this approach is that application upgrades are simpler to undertake and to deploy.

- **Modularity and Flexibility**

  MDM implementations range from lightweight registries to robust, persistent masters able to manage and store not only the core customer profile but also to provide a centralized single view of child entities associated with the customer. OCH is designed in a modular fashion allowing a deploying organizations the flexibility to deploy anywhere from a lightweight registry to a robust persistent hub with associated child entities. OCH's extended capabilities are available as optional modules, e.g. the Oracle Activity Hub or the Oracle Privacy Management Policy Hub.

- **Service-Oriented Architecture**

  The Siebel architecture and platform was designed from the outset to be object based, service oriented; and metadata driven. Building on this architectural platform, OCH provides a rich set of prebuilt MDM services, together with a set of adapters to support the most common integration technologies.

- **Deployment Choices**

  Organizations have varying requirements when it comes to choosing how to deploy a MDM solution. Many organizations will deploy a stand-alone MDM Hub that is integrated to all other applications. OCH supports this "stand alone" deployment mode. However, for those customers that want their Siebel CRM system to be the trusted customer master for the enterprise, OCH offers a unique alternative where it is deployed embedded within the Siebel CRM application instance. When deployed in this way the Siebel CRM application exhibits all of the mastering capabilities that are unique to OCH. Finally, as "Cloud" based approaches have evolved, the option of having OCH has also evolved in optional offerings as a hosted or subscription-based as-a-service platform.

BENEFITS

Oracle Customer Hub delivers high return on investment to its customers resulting in realizing significant revenue improvement and sizable expense savings. While Customer hub makes the IT organization more agile, the major benefit is realized in the business side enabling business growth, enhancing operational efficiency and improving the organizational compliance. The business growth comes through revenue improvement via the ability to do better cross-sell/up-sell with more accurate customer view, improve customer retention through enhanced customer service and effective marketing campaigns supported by enhanced customer information. Improvements in operational efficiency are specifically in areas of reducing order error rate, B2B sales cycle time or corporate-wide data management costs. Risk and Compliance is a major concern for organizations and a customer hub solution enables organizations to reduce its compliance risks and credit risk costs. Finally the IT agility of the organization increases by reducing integration costs and time to take new applications to market.

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Contact Us

For more information about Oracle Enterprise Data Quality products and the EDQ Connector for Endeca, visit oracle.com or call +1.800.ORACLE1 to speak to an Oracle representative.

Oracle is committed to developing practices and products that help protect the environment

Hardware and Software, Engineered to Work Together

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