MDM OVERVIEW:

Oracle Customer Hub

As new data enters your source systems, that information often arrives with new and diverse problems: non-standard entries, missing fields and/or incomplete records. Without a Master Data Management strategy, your agency cannot rely on the information that is critical to accomplishing your mission and goals. Inaccurate or inconsistent data can hinder your agency's ability to understand its current – and future – problems. Poor data leads to poor decisions leads to poor results: lost revenue, operational delays, undeserved awards, fraud, inadequate service, dissatisfied constituents and bad press.

A Master Data Management strategy will help you better understand your environment, maximize revenue generation, increase your operational efficiency and reduce costs, understand your constituency and provide exquisite service. Your goal with a data quality strategy is to transform raw data into consistent, accurate and reliable information. Your strategy should be based upon these five pillars:

1. Data Profiling – Inspect data for errors, inconsistencies, redundancies and incomplete information.
2. Data Quality – Correct, standardize and verify data.
3. Data Integration – Match, merge and/or link data from a variety of disparate sources.
4. Data Augmentation – Enhance data using information from internal and external data sources.
5. Data Monitoring – Check and control data integrity over time.

Oracle Master Data Management is the ability to:
Consolidate Information into one master repository from disparate systems and business lines,
Cleanse and Enrich data centrally,
Distribute Data as a single point of truth for a consistent enterprise view, and
Leverage Master Data to service consuming applications, enterprise business processes and decision support systems.

Oracle's Master Data Applications provide a platform that functions as the master file for an organization's enterprise-wide customer information and will enable you to execute a Master Data Management strategy. One of the applications of Oracle's portfolio of Master Data Applications is called Oracle Customer Hub (OCH).

The Oracle Customer Hub application consists of a set of extensive data model tables that store customer and vendor data. When the Oracle Customer Hub is used as the master database of an organization's data it interacts with both front- and back-office systems to provide a unified data-set

across an organization's multiple channels, lines of business, and applications. In addition to the data model mentioned previously, Oracle Customer Hub includes a data governance manager, system level security, read/write audits and a user interface for your administrators and your Data Stewards.

The Oracle Customer Hub stores a clean and unified profile for enterprise customers, partners, and prospects. Traditional customer data such as Accounts, Contacts, Households, Partners, and Agents data is included as well as customer relationship information, address information, and asset information. The Oracle Customer Hub co-exists within an enterprise's architecture by integrating with key back-office systems to act as the master record for the customer-specific subset of an organization's data. The Oracle Customer Hub is based on a party data model. This model uses a single-party entity to represent organizations, positions, user lists, contacts, and employees and provides extension tables for your specific data element needs.

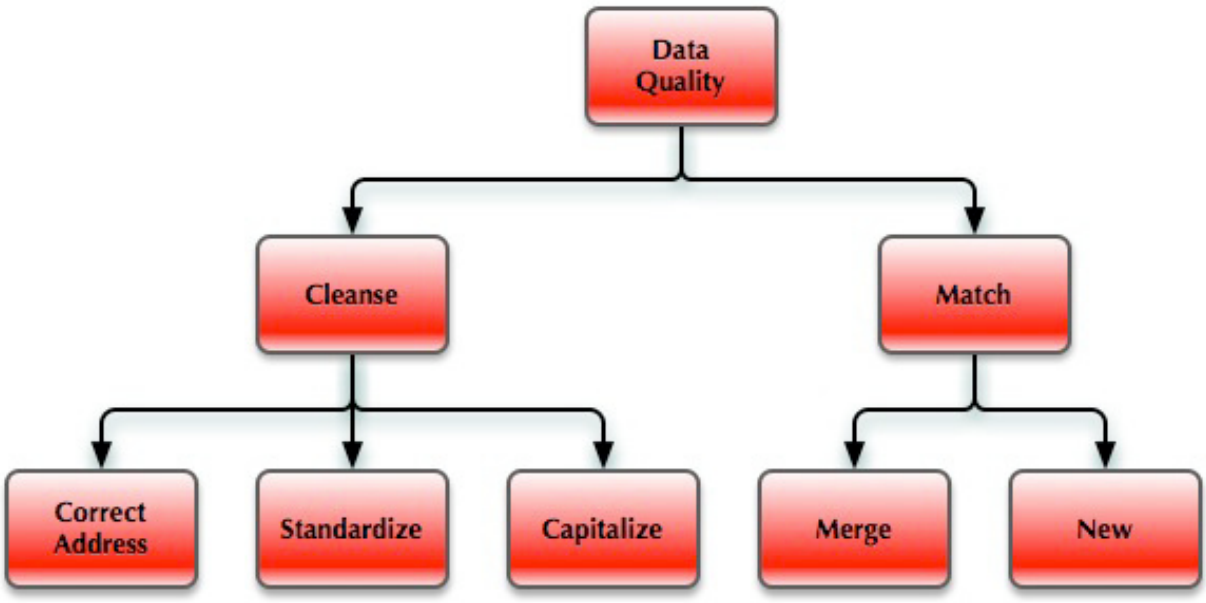
In addition to storing the master set of customer data for an enterprise, Oracle Customer Hub also includes many features to cleanse, evaluate, publish, store, and manage this customer data. The basic MDM concepts and functionality are briefly described here.

Data Cleansing and Matching – Oracle Customer Hub supports data cleansing and data matchine. The data matching uses a matching engine from Informatica. Oracle Customer Hub also supports other third-party cleansing and matching technologies.

Matching is the ability to recognize duplicate customer records.

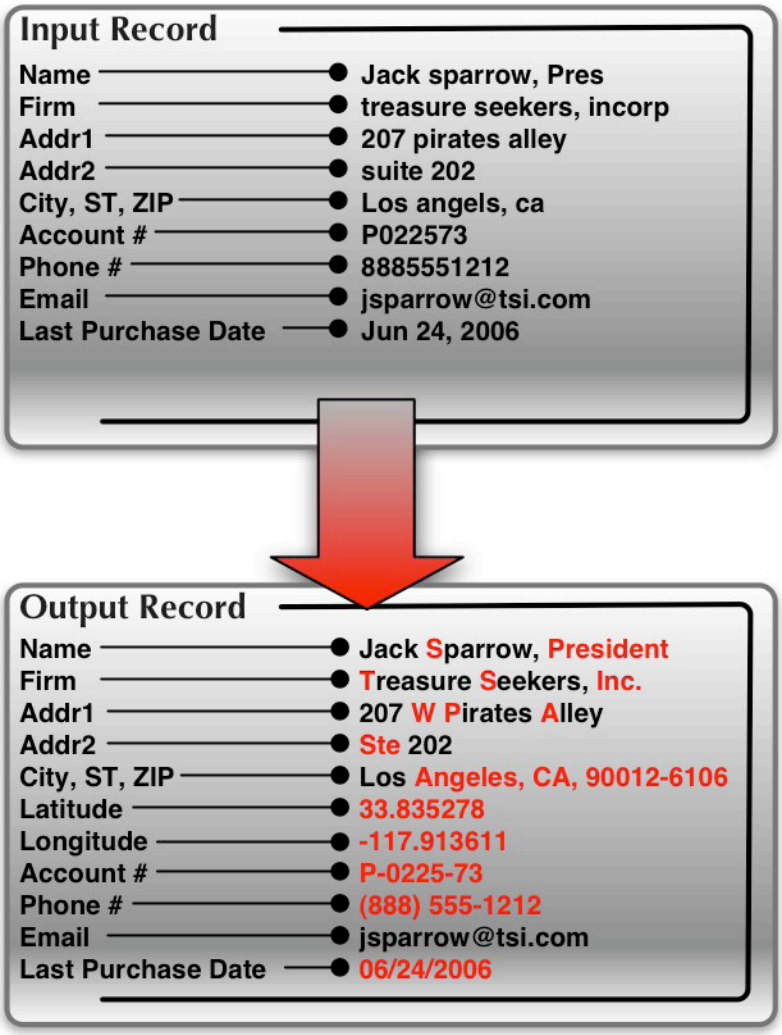
Integration to data cleansing and data enhancement services enable the Oracle Customer Hub solution to standardize the spelling and format of customer records and standardize the addresses to comply with postal standards. Providers of data cleansing services include Trillium, FirstLogic, Group 1 Software, Ascential and others. Data enhancement services such as Dun and Bradstreet allow your agency to improve the quality of customer records with additional information.

The following figure depicts the components of our Data Quality solution:



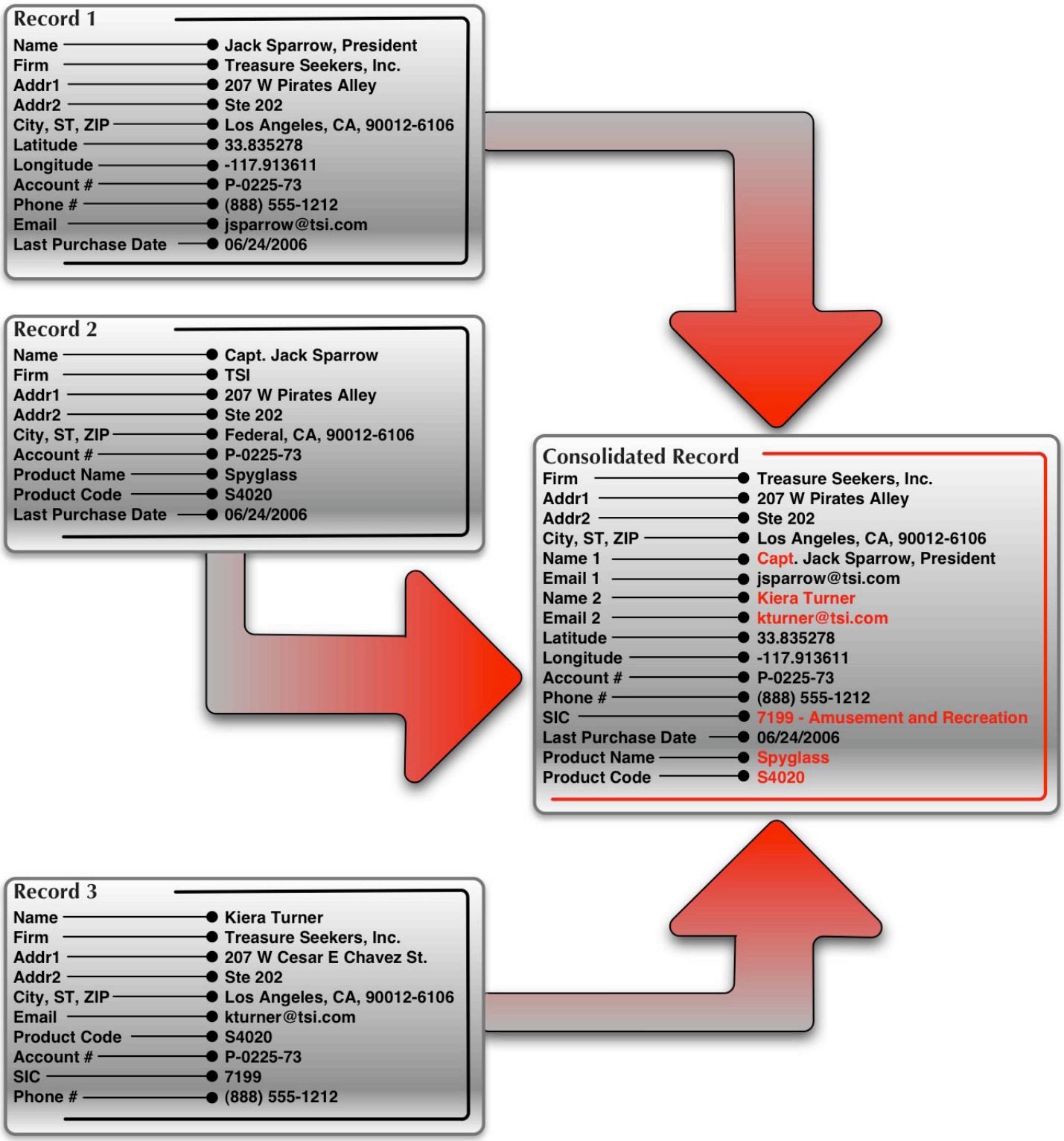
There are two top-tier components to data quality, 1) Cleanse and 2) Match (or de-duplication). Cleansing involves correcting addresses, standardizing names (i.e, IBM) and capitalizing appropriately.

The following picture shows the same record in a pre-cleansed state and then after cleansing was applied. Note the Name was capitalized properly, the title standardized. The account name was capitalized properly. The address was corrected and the appropriate 7 plus 4 zip code added. The account number, phone number and last purchase date were formatted in a specific agency specified format. (The addition of latitude and longitude is an example of data enhancement and is not part of the cleanse phase.)



The second component, Match, consists of several steps. Based upon several parameters, a decision is made on whether or not a given record falls into one of three states. The first state is that this is a duplicate record and should be merged with the existing best version. The second state is the record is purged from the match queue as it is unique and a new record should be created. The third stage (not listed) occurs for the fuzzy situations that need or suggest manual intervention; in this stage, the record is submitted for review by a data steward with the attendant calculations. The data steward may choose to merge this record, unmerge it and/or create a new record.

Here is an example of how three cleansed input records are merged:



D&B Integration: D&B's information and technology solutions help businesses find profitable customers, reduce credit risk, manage receivables, and manage vendors. D&B's database of commercial information consists of over 75 million records world wide. Oracle's D&B integration allows the Oracle Customer Hub to access and use D&B data and reports.

History and audit trail enable data stewards to trace the history of the best-version record. This capability is the basis for other functionality such as intelligent merges and unmerges. This audit capability extends not only to who last updated the record but who last viewed the record (read audit).

Intelligent merge is the capability to create a best version record from multiple source records. The **automerge** capability allows agencies to merge records with high probability of being duplicates without pointing them to the attention of a data steward. Closely related is the **unmerge** capability that enables data stewards to split erroneously merged records. The Oracle Customer Hub Survivorship feature provides a rules-based means to automate the quality of the master customer data. Data is compared to its source and age to determine whether to maintain or update customer data. The Oracle Customer Hub Best Version records describe the current best state of the customer data stored in the Oracle Customer Hub. These records may be updated in the future based on survivorship rules or other data management processes. Historical best versions of customer data are also stored in the Oracle Customer Hub Source Data History table. The Oracle Customer Hub Source Data History (SDH) tables maintain a record of data transactions between Oracle Customer Hub and registered external systems.

Cross referencing maintains a record of the foreign keys under which customer records appear in the operational applications. For example if a customer is known as GH89UI in the call center application, and customer 787-989 in a back office application, the cross-referencing infrastructure will link these two foreign IDs. The Oracle Customer Hub cross-referencing allows the identification of customer data in external systems to be saved in the Oracle Customer Hub allowing a one-to-many mapping of these data. Oracle Customer Hub generates a **unique universal ID** for each customer.

Hierarchy management allows agencies to model the hierarchies of their customers. Often agencies will have to keep track of multiple hierarchies for the same customer simultaneously. For example, the household hierarchy can be very different from the legal hierarchy.

Application authorization is the ability to assign different Create / Read / Update / Delete privileges to the operational applications with respect to the "best" customer record maintained in the customer master. Oracle Customer Hub Publish and Subscribe Oracle Customer Hub publish and subscribe functionality determines the details on how external systems receive customer data updates from the Oracle Customer Hub.

Integration framework is the infrastructure of the customer master application that enables integration with the operational applications. In most large enterprises, the IT applications span a wide range of technologies and this integration framework is capable of handling various modes of integration such as real time, near-real time and batch mode. It is also capable of supporting tightly coupled (programmatic) and loosely coupled integration interfaces (MQSeries and Integration server technologies). Since a Master Data Integration solution is one of the most integration heavy projects an IT department can undertake, the quality and robustness of the integration framework is often a make-or-break factor of success.

User interface is also important for a Oracle Customer Hub solution, contrary to the belief of some IT departments and even vendors. Customer data stewards often have to make judgments about creating a best of breed record. They have to manually merge, unmerge and cleanse customer

records on daily basis. This task is best achieved in a user interface in the customer master application directly which Oracle Customer Hub provides.

In conclusion, Oracle Customer Hub helps your agency have a single view of your business, provides accurate reporting, help you optimize your processes. With Oracle Customer Hub, you can better understand your environment, maximize revenue generation, increase your operational efficiency and reduce costs, understand your constituency and provide exquisite service. Your will have reached your goal with a data quality strategy of transforming your raw data into consistent, accurate and reliable information.