

# Oracle Data Integration

## Overview of the Oracle Enterprise Metadata Management Solution

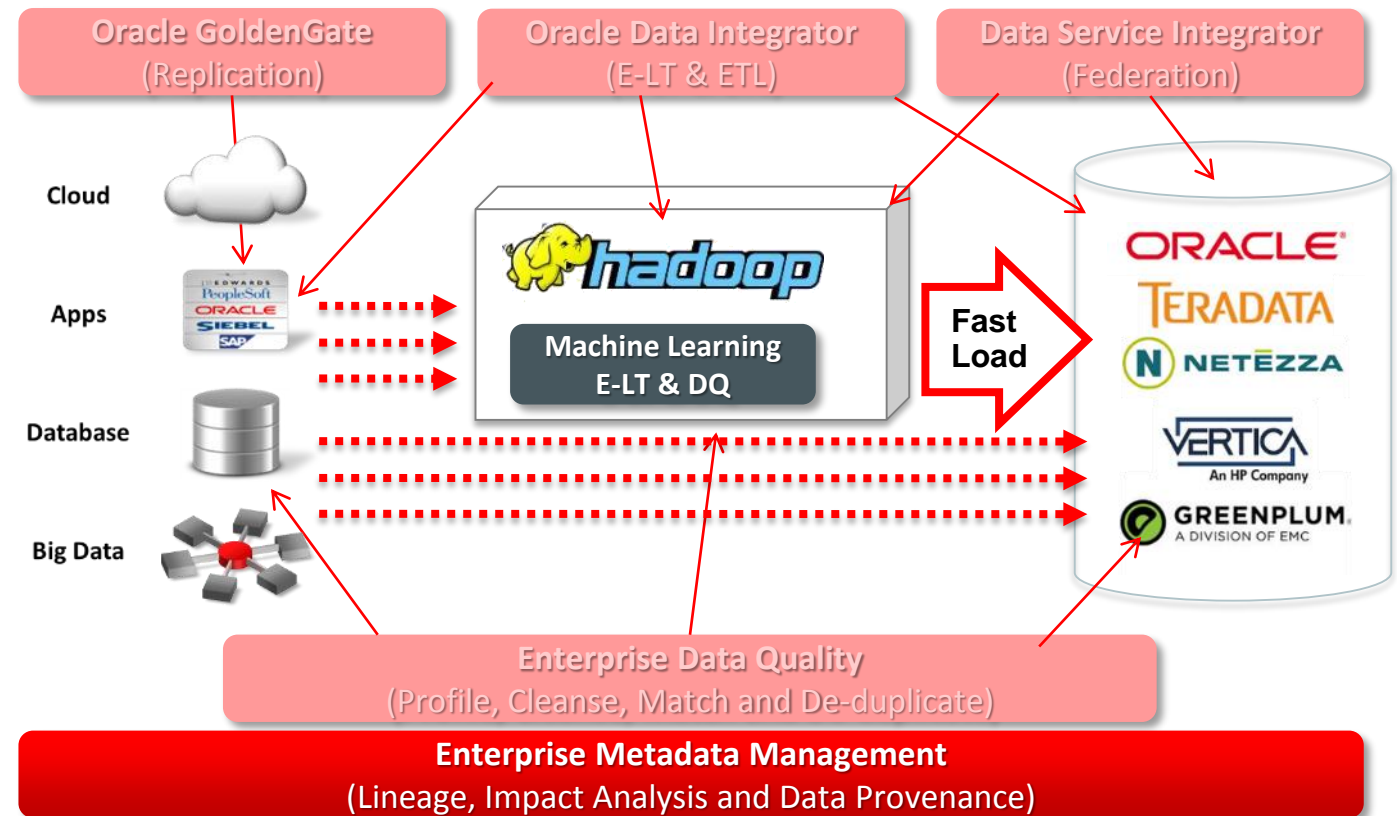
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Oracle Data Integration

August, 2014

**ORACLE**

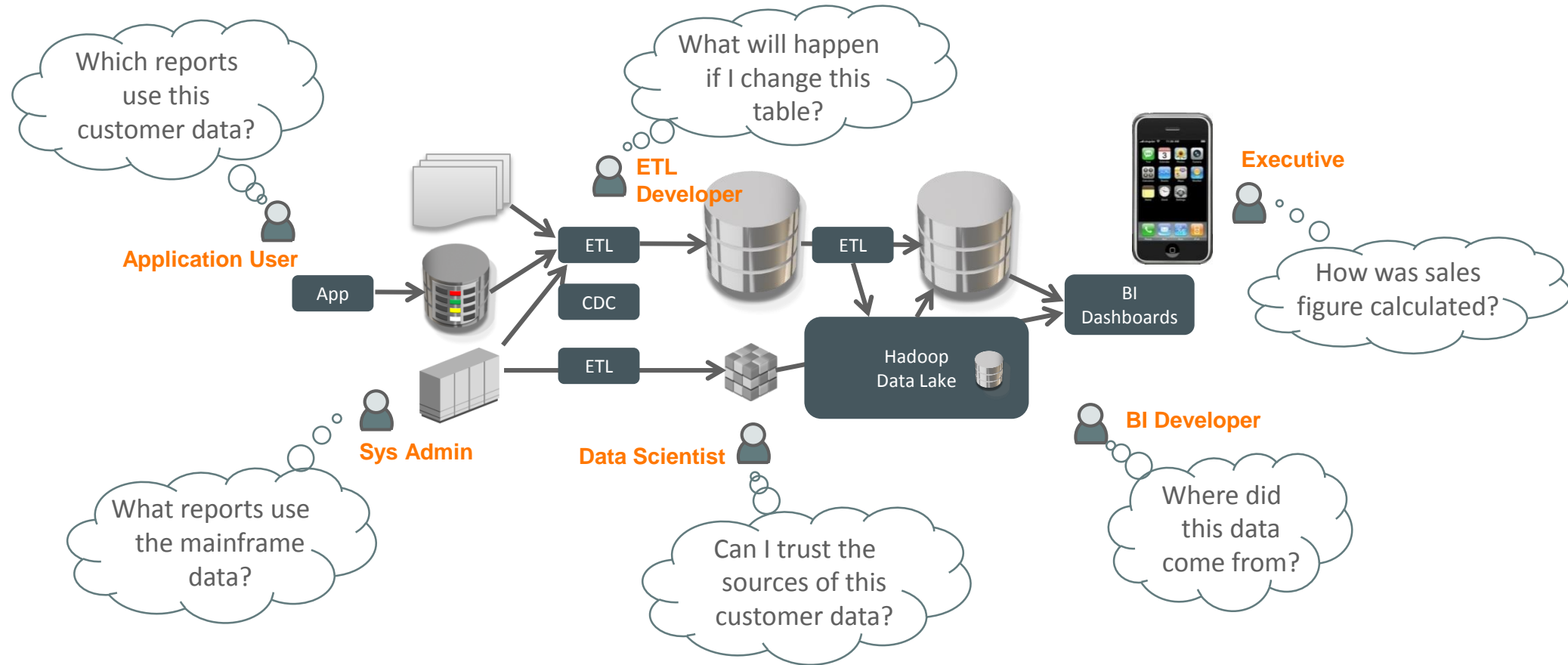
# Comprehensive Data Integration – Now With Enterprise Metadata Management!

- Data Replication
  - Continuous data staging into Hadoop
- Data Transformation
  - Pushdown processing in Hadoop
- Data Federation
  - Query Hadoop SQL via JDBC
- Data Quality
  - Fix quality at the source or invoke Machine Learning in Hadoop
- **Metadata Management**
  - **Data Lineage, Impact Analysis and Business Glossary**



# Value of Enterprise Metadata Management

Solves a significant pain point for a wide variety of business consumers and technical staff



# Oracle Enterprise Metadata Management



- Packaged for two offerings:
  - **Oracle Enterprise Metadata Management (OEMM)**  
Fully featured enterprise edition product with Glossary
  - **Oracle Metadata Management for Oracle Business Intelligence (OMM)**  
Limited for use with Oracle
- Key Features:
  - Report to Source Lineage
  - Impact Analysis
  - Model Versioning
  - Annotations and Tagging
  - Supports Metadata Standards
  - Business Glossary
  - 3<sup>rd</sup> Party BI Metadata
  - 3<sup>rd</sup> Party ETL Metadata
  - 3<sup>rd</sup> Party DB Metadata
  - Big Data Ready

# Metadata Harvesting from all Popular Platforms



# Most Open & Heterogeneous Platform

## Operational Integration (Movement / Transformation)

- Hadoop HBase
- Hadoop Hive/Flume
- HP Enscribe
- HP NonStop
- HP Neoview
- Hypersonic SQL
- IBM DB2 i Series
- IBM DB2 UDB
- IBM DB2 z Series
- IBM Informix
- IBM Netezza
- JMS / MQ
- Microsoft Access
- Microsoft SQLServer
- MySQL
- Pivotal Greenplum
- PostgreSQL
- Salesforce.com
- SAP BW / BI
- SAP ERP / ECC
- SAS
- SQL/MP
- SQL/MX
- Sybase ASE
- Sybase IQ
- Teradata
- Oracle Database
- Oracle Exadata
- Oracle Big Data Appliance
- Oracle TimesTen
- Oracle OLAP
- Oracle Business Intelligence
- Oracle BI Applications
- Oracle E-Business Suite
- Oracle JD Edwards Enterprise One
- Oracle JD Edwards World
- Oracle Fusion Applications
- Oracle Governance Risk and Compliance
- Oracle Fusion AIA
- Oracle Retail Applications
- Oracle Agile BI / DW
- Oracle Agile PLM for Process
- Oracle iFlex FlexCUBE
- Oracle iFlex Mantas
- Oracle Hyperion Applications
- Oracle PeopleSoft
- Oracle Siebel CRM / OnDemand
- Oracle Communications
- Oracle WebLogic Server
- Oracle Coherence Data Grid
- Oracle SOA Suite
- Oracle Enterprise Service Bus

## Metadata Harvesting (Glossary, Lineage & Impact Analysis)

- Adaptive
- Altova
- Apache Hcatalog
- Apache Hive/HQL
- Borland
- CA ERwin
- Cloudera Impala
- COBOL Copybook
- DataStax
- Embarcadero
- EMC ProActivity
- GentleWare
- Google BigQuery
- Grandite
- Hadapt Hive
- Hortonworks Hive
- IBM Cognos
- IBM DB2
- IBM DataStage
- IBM Discovery
- IBM Federation Server
- IBM Lotus Notes
- IBM Netezza
- IBM Rational Rose
- IBM Rational Architect
- Informatica Metadata Mgr.
- Informatica PowerCenter
- CoSORT
- ISO SQL Standard (DDL)
- MapR Hadoop Hive
- MicroFocus
- Microsoft Access
- Microsoft Office Excel
- Microsoft Visio
- Microsoft SQL Server
- Microsoft SSIS
- Microsoft Visual Studio
- Microstrategy
- Magic Draw
- OMG CWM Standard
- OMG UML Standard
- Oracle BI Answers
- Oracle BI Enterprise Edition
- Oracle BI Server
- Oracle DAC
- Oracle Data Integrator
- Oracle Data Modeler
- Oracle Database
- Oracle Designer
- Oracle Hyperion Applications
- Oracle Hyperion Essbase
- Oracle Warehouse Builder
- Pivotal Greenplum
- PostgreSQL
- QlikView
- SAP BO Crystal Reports
- SAP BO Designer
- SAP BO Desktop Intelligence
- SAP BO Repository
- SAP BO Data Integrator
- SAP BO Data Steward
- SAP Master Data Management
- SAP Sybase PowerDesigner
- SAP Sybase ASE Database
- SAS Data Integration Studio
- SAS BI Server
- SAS Information Map
- SAS Metadata Management
- SAS OLAP Server
- Select
- Sparx Architect
- Syncsort
- Tableau
- Talend
- Teradata
- Tigris
- Visible
- W3C DTD & XSD Schema

+ open APIs and standards based meta-model

# Detailed Feature List

## Exploring Metadata

- ✓ Text Search and Metadata Browser,
- ✓ Model/Diagram Visualizers, Birds-eye View, Metadata Reporting
- ✓ Data Flow and Lineage Analyzer

## Sarbanes-Oxley Act (SOX) Compliance

- ✓ Versioning and Model Compare
- ✓ URI Based Call back from BI reports or Business applications

## Stewardship Collaboration

- ✓ Feedback Comments and Review Board
- ✓ Metadata Tagging with Labels
- ✓ Multimedia attachments (documents, videos, presentation, code)
- ✓ URL link references for e-mail, blogging, social networking

## Lifecycle Change Management

- ✓ Metadata Harvesting from any DM, DW, ETL/DI, BI Tooling and Big Data/Hadoop
- ✓ Enterprise Architecture Management (Metadata Configuration Management)
- ✓ Impact of Change

## Data Standardization & Data Governance

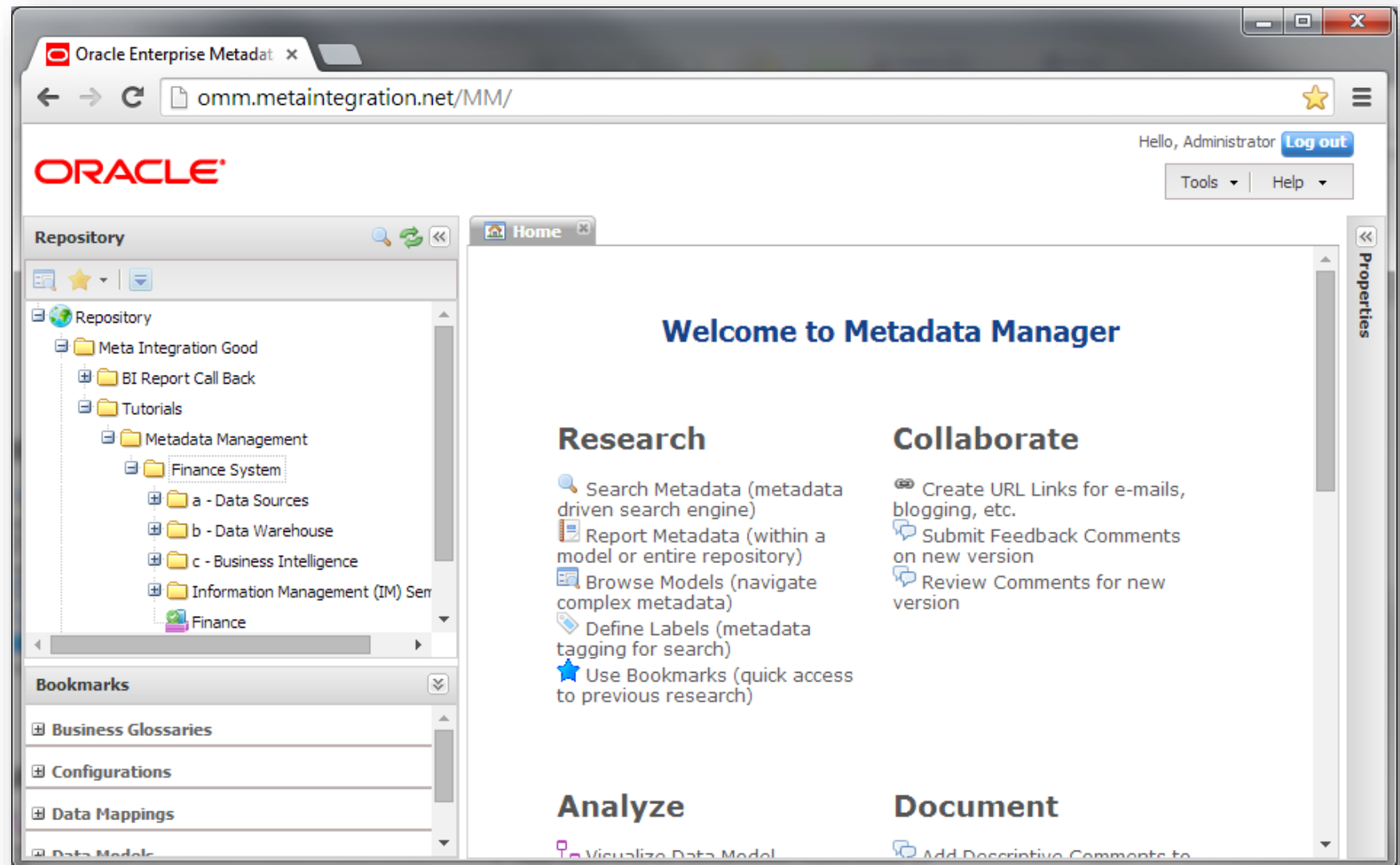
- ✓ Supports Variety of Metadata Standards
- ✓ Annotations and Tagging
- ✓ Business Glossary with Semantic Lineage

## Oracle Integrated

- ✓ Oracle Database
- ✓ Oracle Data Integrator, Oracle GoldenGate
- ✓ Oracle Business Intelligence Enterprise Edition
- ✓ Oracle Business Intelligence Applications (ODI and older Informatica based OBIA)

# OEMM Home with Repository Panel and Bookmarks

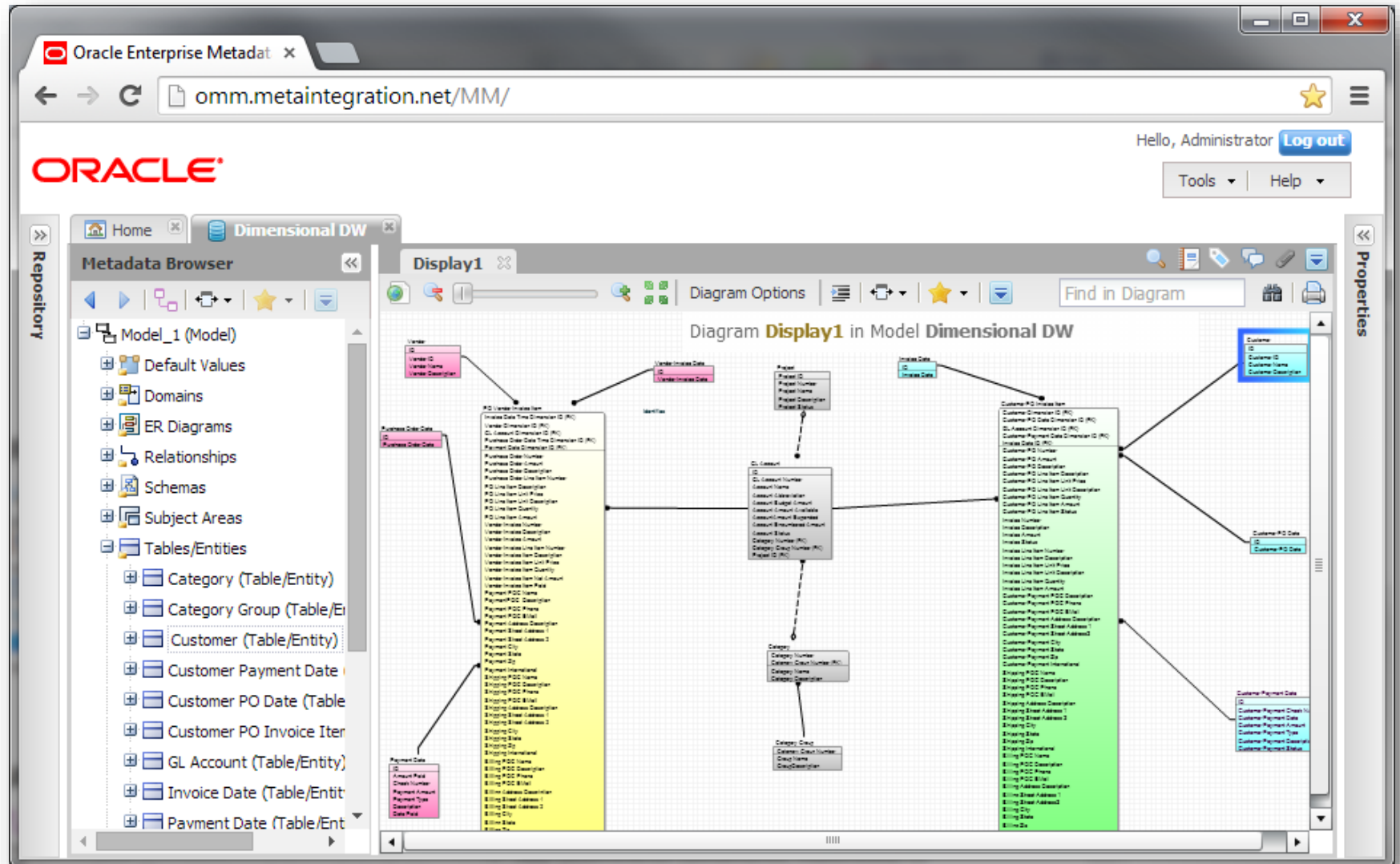
*Deploys as a web based application with an attached metadata repository*





# Graphical Browser for Data Model Diagrams

*Birds-eye-view  
metadata  
viewer enables  
zoom-in /  
zoom-out  
around  
complex  
metadata  
models*



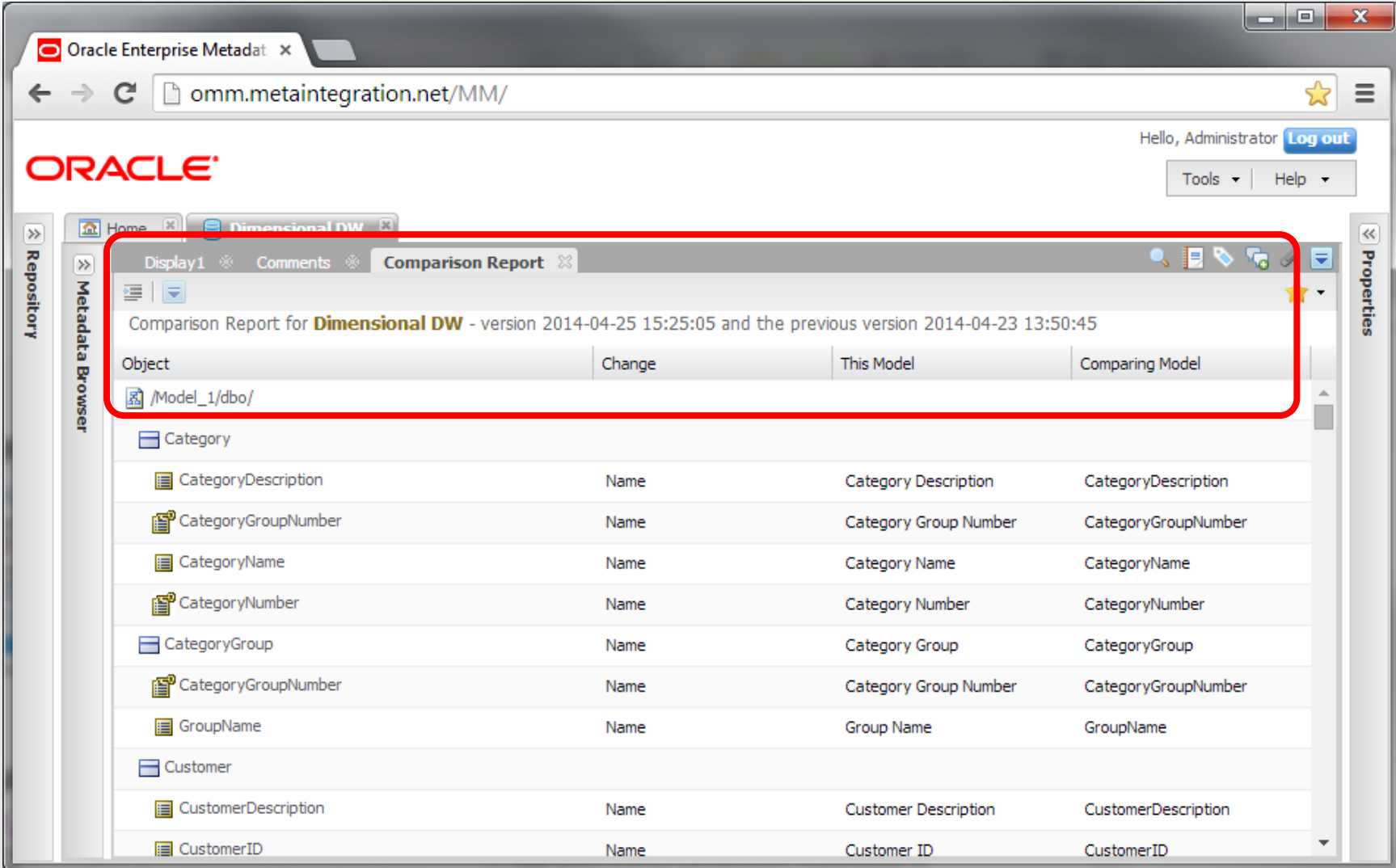
# Keyword Based Search on all Metadata

*Full index text search provides simple navigational access to very large metadata models*

The screenshot displays the Oracle Enterprise Metadata browser interface. The browser address bar shows the URL `omm.metaintegration.net/MM/`. The Oracle logo is visible in the top left. The user is logged in as Administrator, with a "Log out" button in the top right. A search bar is highlighted with a red box, containing the text "Search for: account" and a search icon. Below the search bar, the results show "13408 results found" and "Page 1 of 671". The search results list several "Account (Presentation Table)" entries, such as "Account (Presentation Table) of Payables Invoices - Trial Balance Real Time in OBIEE" and "Account (Presentation Table) of Service - CRM Activities in OBIEE". The left sidebar shows a "Repository" tree with categories like "Object Types" and "Models".

# Versioning with Model Comparisons

*Easily group and compare data models from similar databases to determine crucial differences*



The screenshot shows the Oracle Enterprise Metadata browser interface. The browser window title is "Oracle Enterprise Metadata" and the address bar shows "omm.metaintegration.net/MM/". The user is logged in as "Administrator" and is viewing a "Comparison Report" for the "Dimensional DW" model. The report compares the current version (2014-04-25 15:25:05) with the previous version (2014-04-23 13:50:45). The report is displayed in a table with columns for "Object", "Change", "This Model", and "Comparing Model". The table lists various objects and their corresponding changes between the two versions.

Object	Change	This Model	Comparing Model
/Model_1/dbo/			
Category			
CategoryDescription	Name	Category Description	CategoryDescription
CategoryGroupNumber	Name	Category Group Number	CategoryGroupNumber
CategoryName	Name	Category Name	CategoryName
CategoryNumber	Name	Category Number	CategoryNumber
CategoryGroup	Name	Category Group	CategoryGroup
CategoryGroupNumber	Name	Category Group Number	CategoryGroupNumber
GroupName	Name	Group Name	GroupName
Customer			
CustomerDescription	Name	Customer Description	CustomerDescription
CustomerID	Name	Customer ID	CustomerID

# Social Collaboration for Stewardship Teams

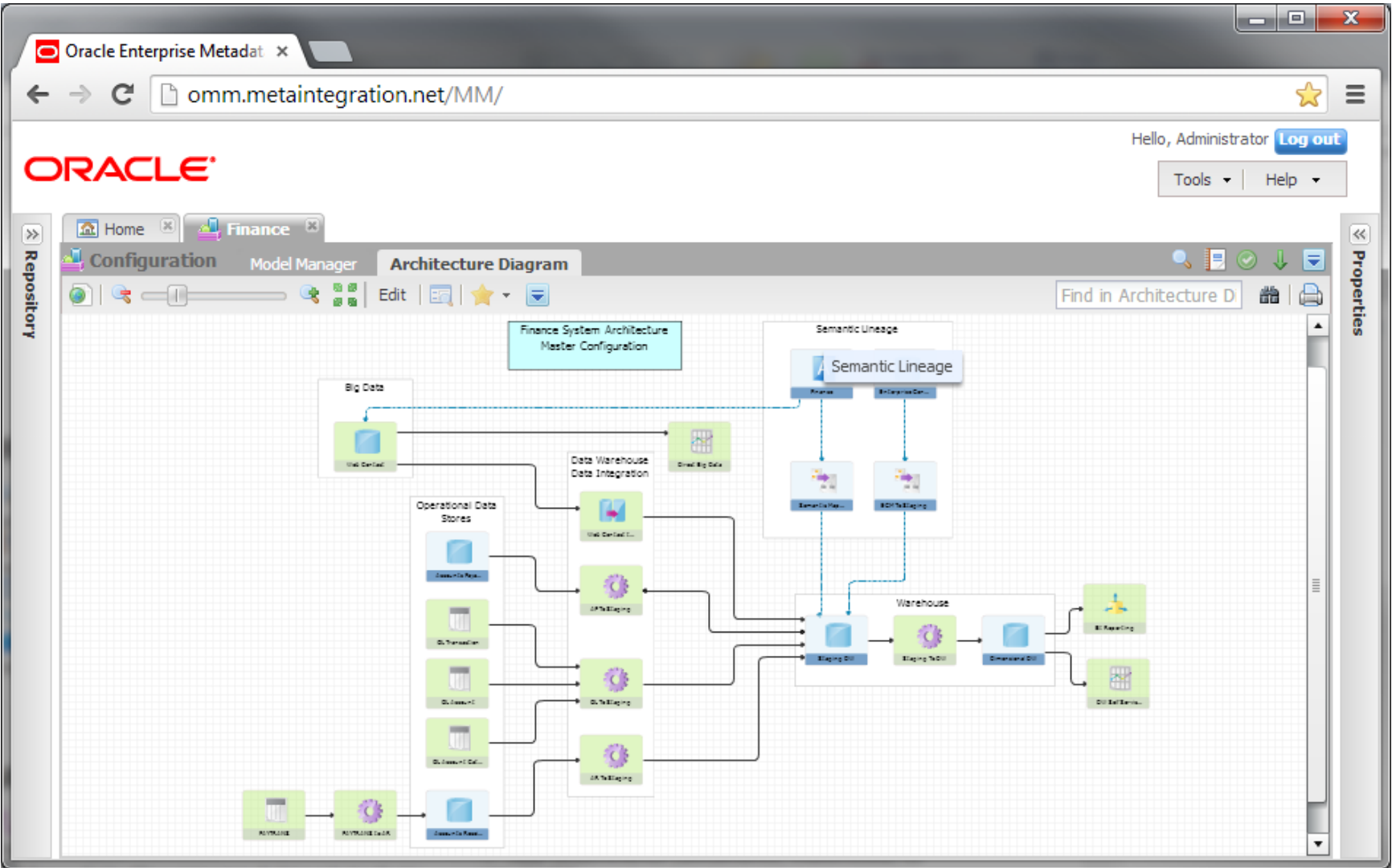
*Team-based approach is designed in from the start*

The top screenshot shows the Oracle Enterprise Metadata browser interface. A 'Comment' dialog box is open, displaying the text: "Customers in the database may also include prospects and obsolete contacts who purchased in the past." The bottom screenshot shows the same interface with a 'Comments' table. The table has columns for Applied Object, Author, Comment, Importance, Status, and Last Modification Time. A red arrow points from the comment in the top screenshot to the corresponding row in the table in the bottom screenshot.

Applied Object	Author	Comment	Importance	Status	Last Modification Time
Customer	Administrator	Customers in the database may also include prospects and obsolete contacts who purchased in the past.	★★★★☆	Candidate	2014-06-13 13:5...
Customer Name	Administrator	Customer Name can be in...			2014-06-13 13:5...

# End-to-End Data Flow Architecture Views

*See how systems are connected while visualizing annotations and system boundaries*



# Reporting System Calculations

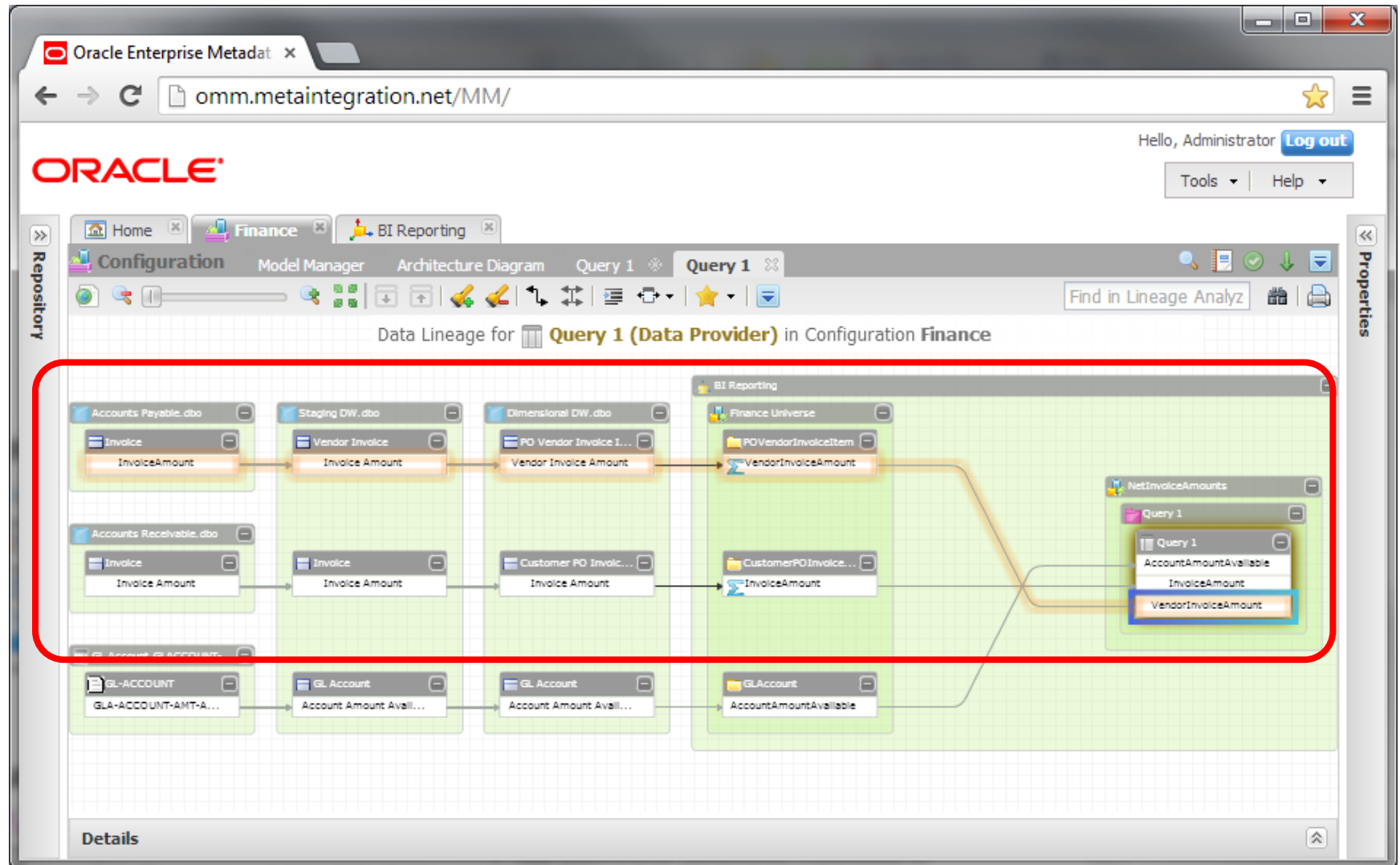
*Drill into formulas and calculations that are directly harvested from BI Reporting engines*

The screenshot shows the Oracle Enterprise Metadata browser interface. The browser window title is "Oracle Enterprise Metadata" and the address bar shows "omm.metaintegration.net/MM/". The user is logged in as "Administrator" with a "Log out" button. The main content area displays a "Lineage Analyzer" for the "NetInvoiceAmounts" model. The analyzer shows a flow from metadata sources (GLAccount, POVendorInvo..., CustomerPOIn..., Customer) through "Queries" (Combined Qu..., Query 1) to a "Report 1" (Page Body). A red box highlights the "Formulas" section of the report, which includes a formula for "Sum([VendorInv...])" that is linked to the "Query 1" data source.



# Find Data Provenance from the Report Layers

*Visualize  
column and  
calculation  
level  
dependencies  
across systems,  
databases and  
reporting  
views*



# Business Glossary is Built In (not a separate add-on)

*Going beyond database dictionaries, link business terminology across metadata models and systems*

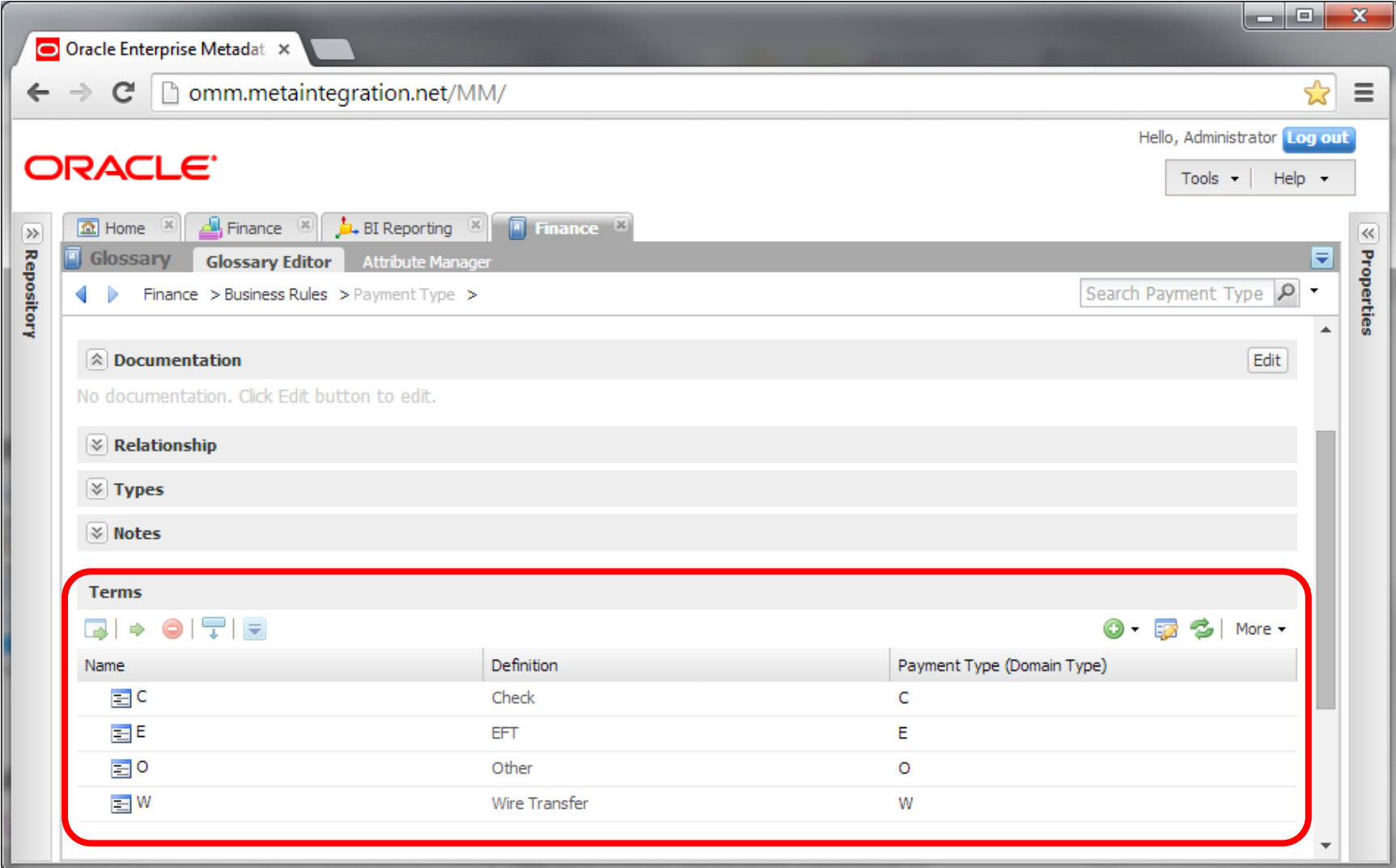
The screenshot shows the Oracle Enterprise Metadata browser interface. The browser address bar displays 'omm.metaintegration.net/MM/'. The page header includes the Oracle logo, a user greeting 'Hello, Administrator', and a 'Log out' button. Below the header, there are navigation tabs for 'Home', 'Finance', 'BI Reporting', and 'Finance'. A red box highlights the 'Glossary' tab and the breadcrumb navigation 'Finance > Finance Terminology > Account Amount Available >'. The main content area displays the details for the 'Account Amount Available' glossary entry, including its name, definition, steward, status, type, abbreviation, and other attributes. The definition is 'Dollar amount remaining in fund account, calculated as: Account Balance Amount - Account Amount Expended - Account Encumbered Amount'. The 'Qualifier' is set to 'false'. There are sections for 'Documentation' and 'Relationship' at the bottom of the entry.

Name	Account Amount Available
Definition	Dollar amount remaining in fund account, calculated as: Account Balance Amount - Account Amount Expended - Account Encumbered Amount
Steward	Administrator
Status	Candidate
Type	Attribute
Abbreviation	AccountAmountAvailable
Alternate Abbreviation	
Usage	
Example	
Qualifier	false



# Business Glossary Policies and Reference Data

*For code tables  
and value  
ranges,  
associate  
glossary  
metadata to  
valid data  
Terms, Types  
and  
Relationships*



The screenshot shows the Oracle Enterprise Metadata browser interface. The browser address bar displays 'omm.metaintegration.net/MM/'. The user is logged in as 'Administrator' and is viewing the 'Glossary Editor' for 'Payment Type' under the 'Finance > Business Rules' hierarchy. The interface includes a search bar for 'Payment Type' and a 'Documentation' section with an 'Edit' button. Below this are sections for 'Relationship', 'Types', and 'Notes'. A red box highlights the 'Terms' section, which contains a table with the following data:

Name	Definition	Payment Type (Domain Type)
C	Check	C
E	EFT	E
O	Other	O
W	Wire Transfer	W

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