

How To Implement Oracle Business Intelligence (Enterprise Ed.) On Oracle Ebusiness Suite

Kiriti Mukherjee
Protégé Software Services

Outline

- ❑ Who is it for?
- ❑ What is Oracle Business Intelligence (EE)?
- ❑ How to use OBIEE to leverage Oracle eBusiness Suite data
- ❑ Looking forward
- ❑ Critical success factors

Intended Audience

- DW/BI Consultants**
- BI/Technology Architects**
- DW/BI Developers**
- BI Administrators**
- IT Managers**

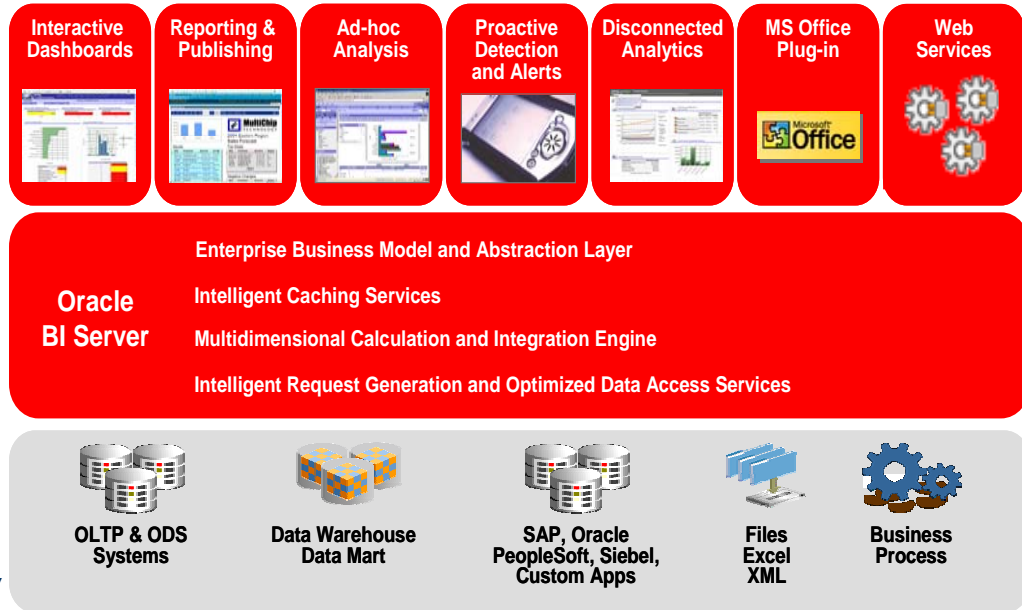
What Is Oracle Business Intelligence Enterprise Edition?

- ❑ Oracle's next generation BI platform that can be used to develop full-featured dashboards, reports and BI applications**
- ❑ Scalable architecture, can plug into your existing BI deployments**
- ❑ Can report from several data sources – flat files, relational and multi-dimensional sources**
- ❑ Has several unique features not readily available in other BI platforms – disconnected analytics, analytic workflows, etc.**

Oracle BI Enterprise Edition Suite

❑ Server, client and web-based interface

- Oracle BI Server
- Oracle Presentation Server
- Oracle Answers
- Oracle BI Publisher
- Interactive Dashboards
- Oracle BI Delivers
- Oracle BI Administration
- Others:
 - Disconnected Analytics
 - MS Office Plugins
- Web Service connectivity
- Tightly integrated



How To Build OBIEE Dashboards

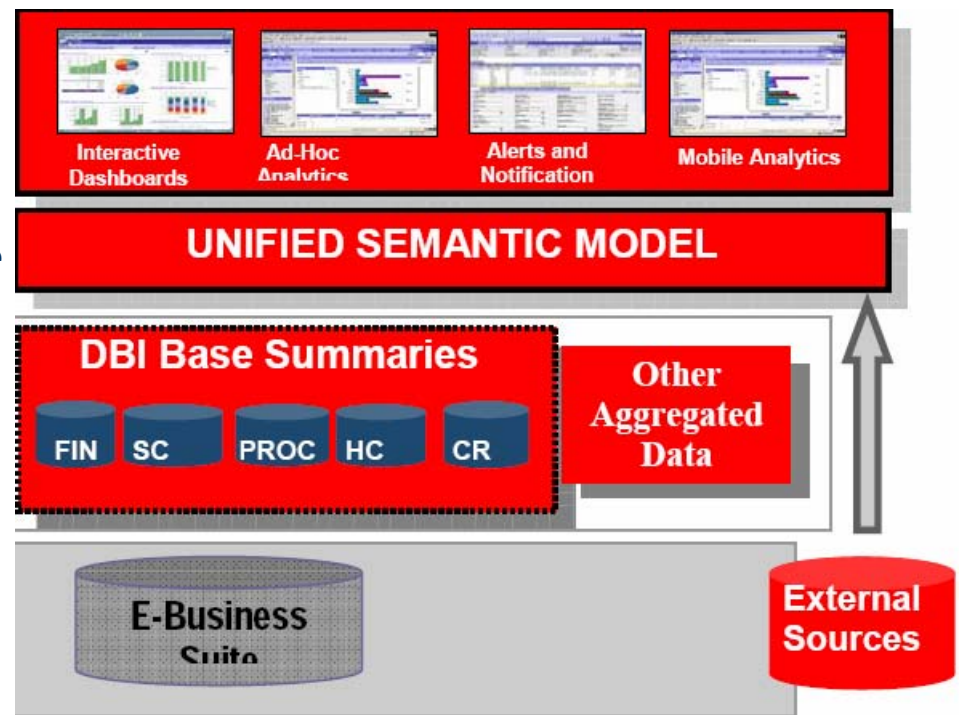
- How can you quickly leverage eBusiness Suite data?**
- Overall approach**
- Steps to build OBIEE dashboard**
- Moving from Discoverer to OBIEE**
- Other considerations**

How To Leverage E-business Suite Data

- ❑ **Implement OBIEE on DBI tables**
 - **DBI has comprehensive set of Key Performance Measures**
 - **No ETL overhead. DBI has pre-built ETL, registered within Oracle Apps as concurrent programs**
- ❑ **Why not just use DBI? Take advantage of:**
 - **Rich, interactive dashboards**
 - **Ad-hoc query capability using Oracle Answers**
 - **Calculated metrics for advanced analyses**
 - **Detailed reports using BI Publisher**
 - **Integrate Discoverer content in the same dashboard**
 - **Alerts, using Oracle Delivers**
 - **Disconnected Analytics provides ability to analyze data offline**

Approach

- ❑ Implement OBIEE on top of DBI Summary MVs and base tables
- ❑ Determine which subject areas you want to analyze
- ❑ Pre-requisite: Implement Oracle Daily Business Intelligence
 - Understand the Key Performance Indicators (KPIs)
 - Understand the Dimensions
 - Populate base summaries
- ❑ Plan the project
 - Plan the custom metrics
 - How do you want to present the data to the users?
 - How will you facilitate guided navigation?

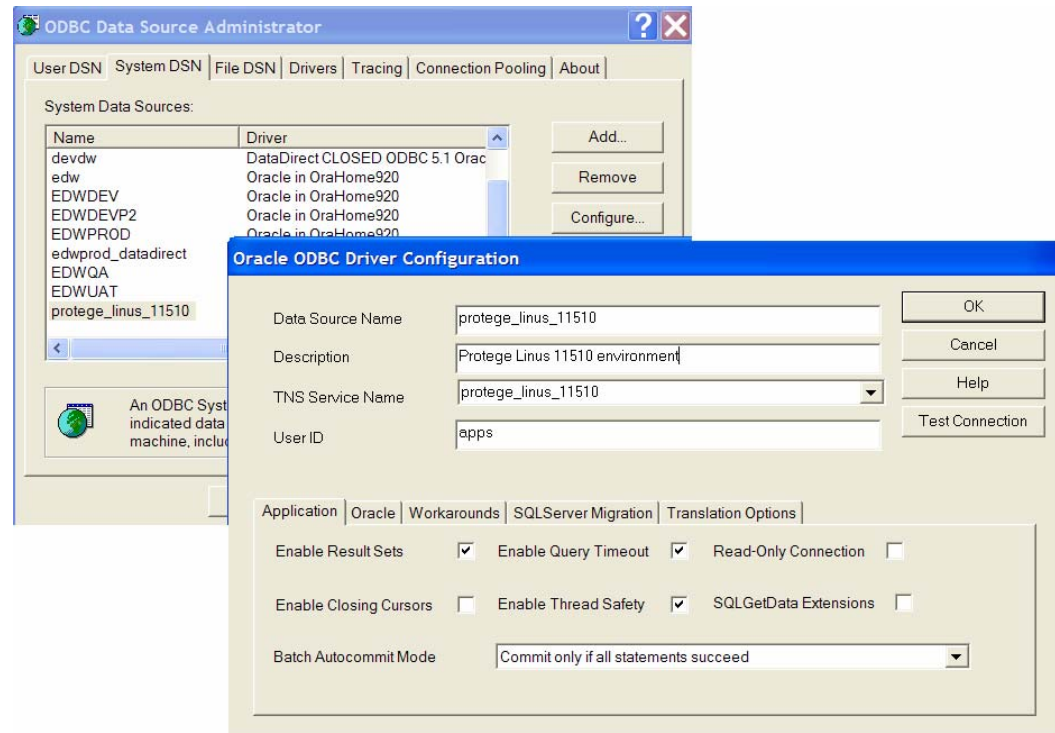


Steps for building the dashboard

- ❑ **Create Repository**
 - **Create database connection**
 - **Import database objects - create the physical layer**
 - **Create the business models**
 - **Create the presentation layer**
- ❑ **Build Answers and dashboard**

Create Database Connection

- ❑ Heterogeneous connectivity, can connect to any ODBC compliant database
- ❑ Connect to the APPS schema only



Create the Physical Layer

❑ Create a Repository

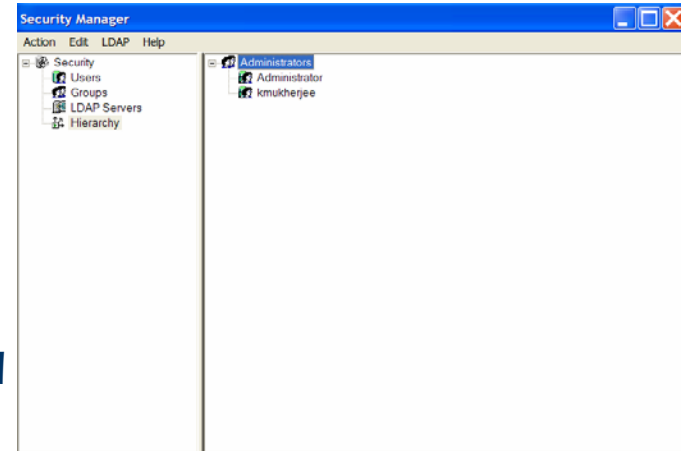
- Start > All Programs > Oracle Business Intelligence > Administration.
- File > New

❑ Assign / Add a user for the Repository

- Manage > Security

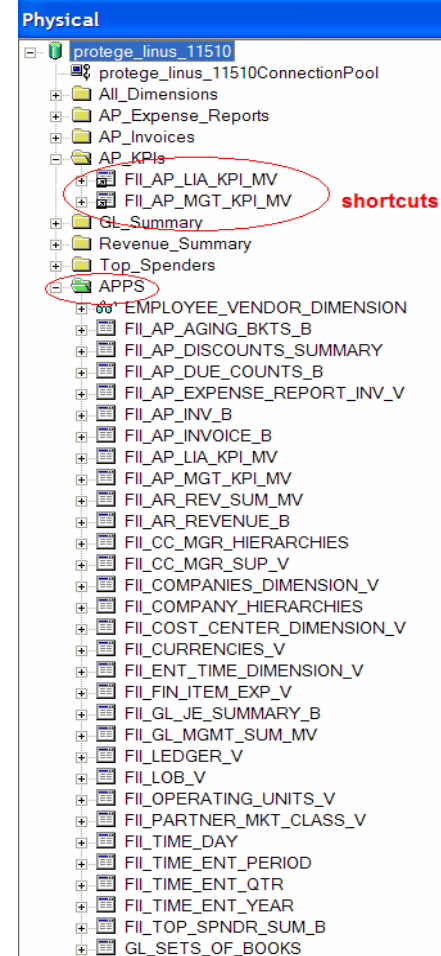
❑ Import Tables

- File > Import > From Database
- Use database connection defined previous step



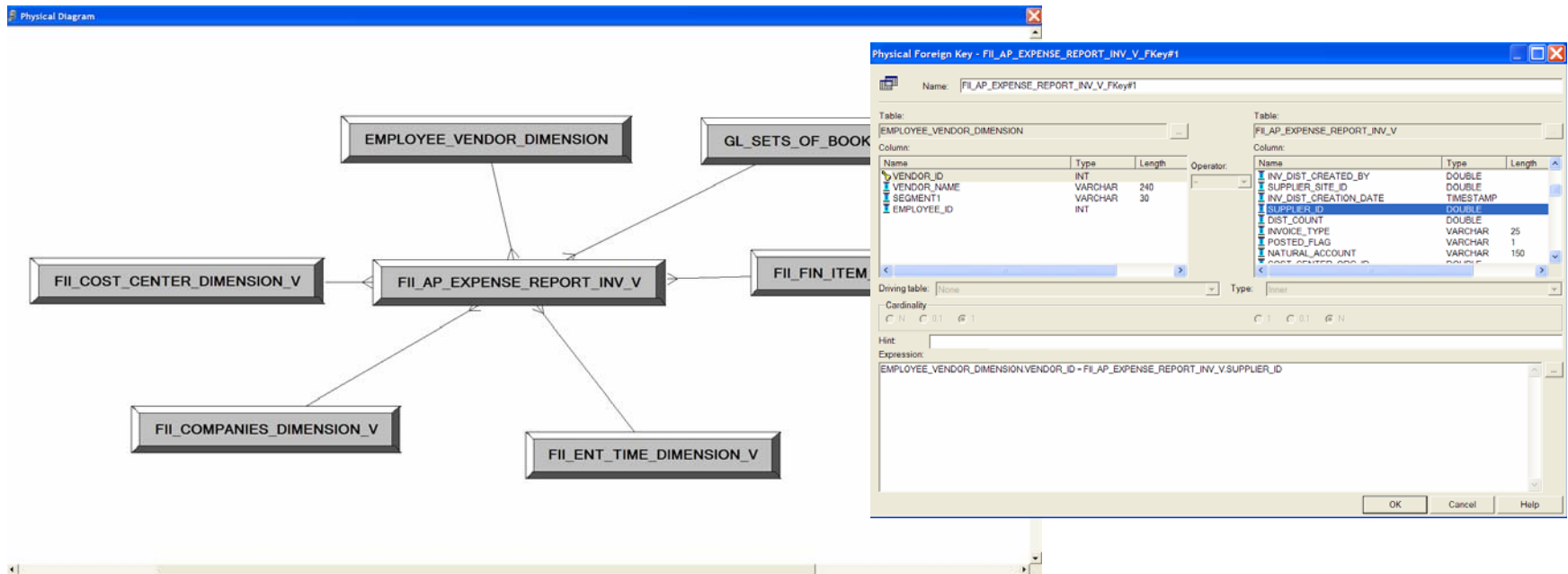
Importing Database Objects

- ❑ Connection pools are set up automatically
- ❑ You can configure connections to multiple databases (e.g. if you want to integrate with a different sales forecasting system like Oracle Demantra - 4-Sight)
- ❑ Can import tables, views, materialized views or, simply create a query
- ❑ Identify dimension tables – use them as conformed dimensions e.g. product, company, cost center, location
- ❑ After importing, group tables logically in folders representing individual analyses / data marts
 - Drag tables to folders to create shortcuts.
 - Can have multiple shortcuts of the same table
 - Example: create shortcuts for dimensions relevant to the analyses within each folder



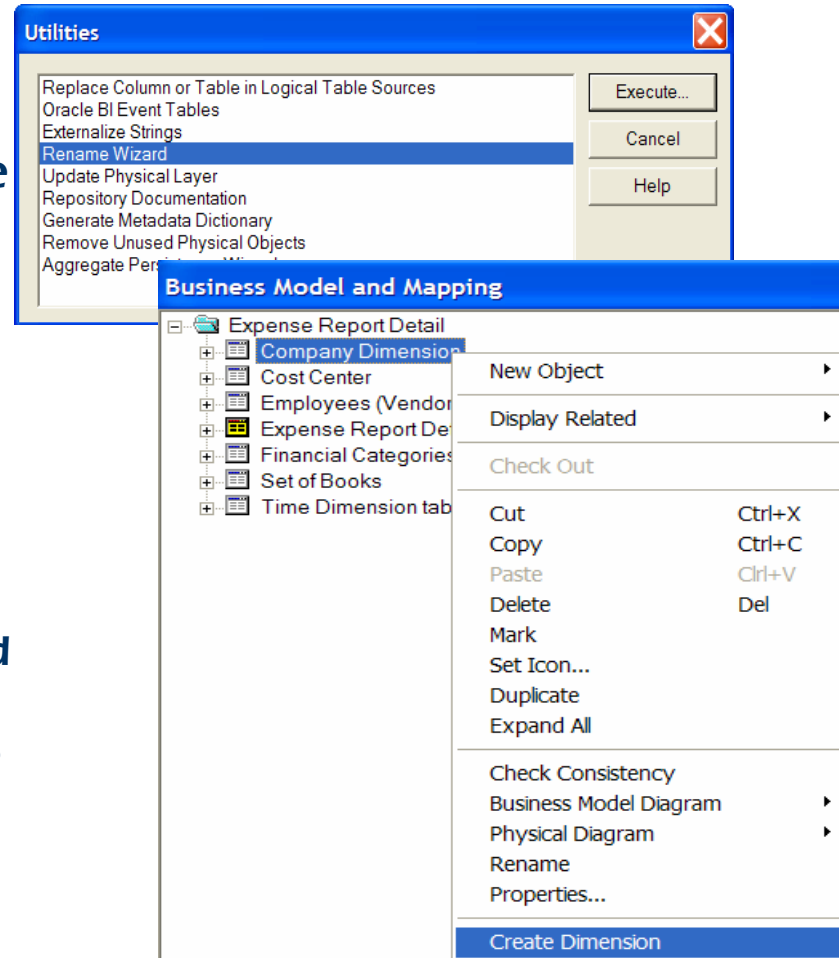
Physical Joins

- ❑ After importing, create the foreign key joins between fact and dimension tables
 - Right-click > Physical Diagram > Objects and all joins



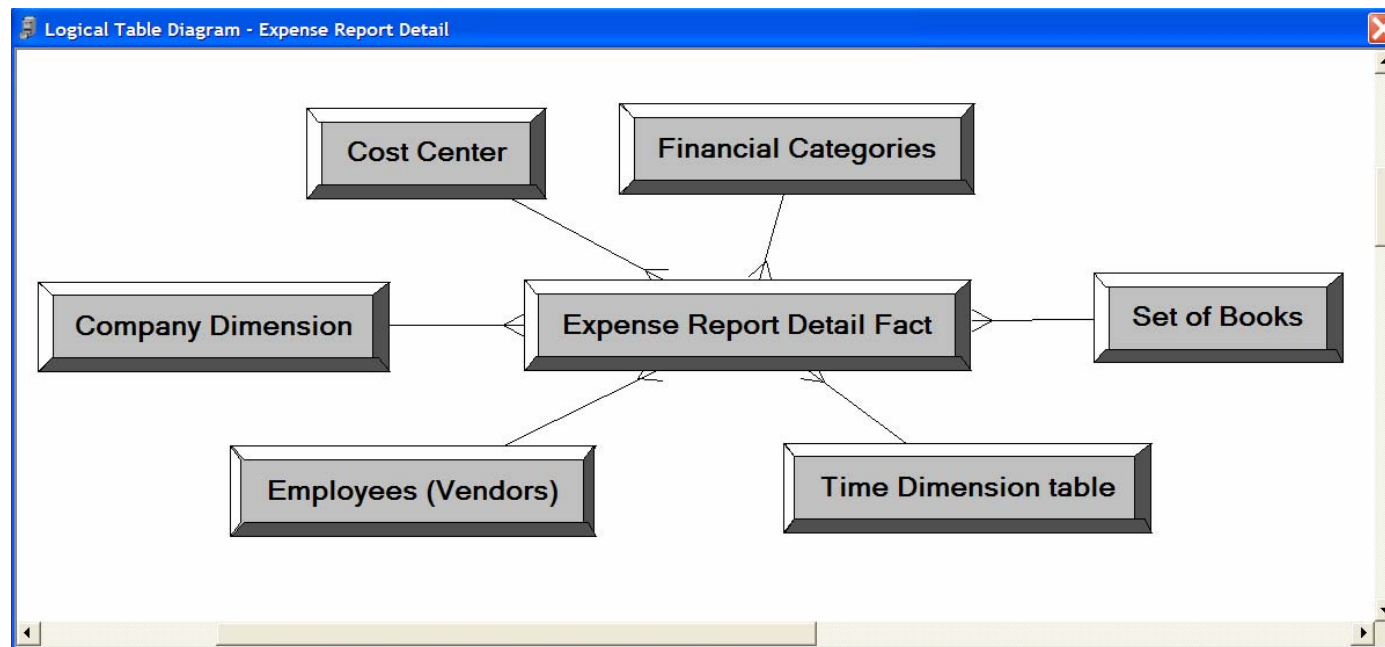
Create the Business Model

- ❑ Create Business Model for each functional data mart
- ❑ Drag physical objects, then rename tables and columns to more meaningful names
 - Tip: Use the rename wizard
- ❑ Create dimensions and hierarchies
 - All hierarchies can have only one root level, but multiple branches
 - Each level must have a unique key and should be associated with at least one column, except the Grand Total (or All) level.
 - All levels must come from the same logical table



Business Model Diagram

- ❑ Create the logical business model diagram
- ❑ Complex joins are recommended here
- ❑ Using joins automatically copied from physical layer can cause unexpected errors – delete these joins and recreate in the business model



Calculated Columns

- ❑ Common, re-usable calculations should be created in the business layer
- ❑ Can also be created in individual answers or reports
- ❑ Uses its own syntax – and makes it portable across all database platforms
- ❑ Time series functions:
 - **AGO:** Calculates the aggregated value from the current time back to a specified time period
E.g., Ago can produce sales for every month of the current quarter and the corresponding quarter-ago sales
 - **ToDATE:** Period to date function
E.g. MTD, QTD, YTD
- ❑ Can use native database functions

Calculation Wizard - New Calculations

Compare "Base Amount" with:

- Expense Report Detail
- Expense Report Detail Fact

Generate Calculations:

- Change
- Percent Change
- Index
- Percent

CurrentX - ComparisonX

Calculation Name:
Base Amount Delta

when AMOUNT_T

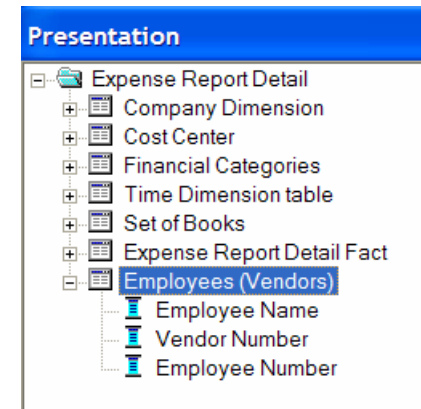
Is NULL return NULL value 0

IfNull("Expense Report Detail"."Expense Report Detail Fact"."Base Amount", 0) - IfNull("Expense Report Detail"."Expense Report Detail Fact"."AMOUNT_T", 0)

< Back Next > Cancel

Create the Presentation Layer

- ❑ Controls what users will see in OBIEE Web when building Dashboards and Answers
- ❑ Create one Presentation Catalog for each functional analysis area
- ❑ Repeat common (conformed) dimensions
- ❑ Only include columns that can be displayed in an Answer or Report or for drill downs
- ❑ Once done, save the repository file (.rpd) and modify the <OBIEE_HOME>\Server\Config\NQSSConfig.ini file to make your repository the active repository in OBIEE before starting Oracle BI Server.

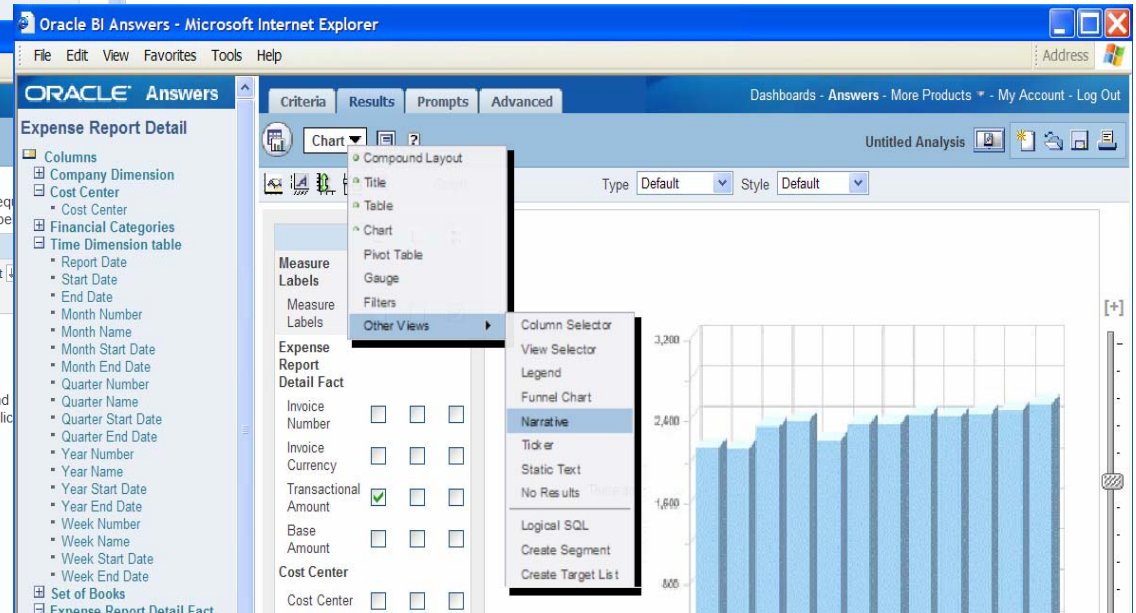
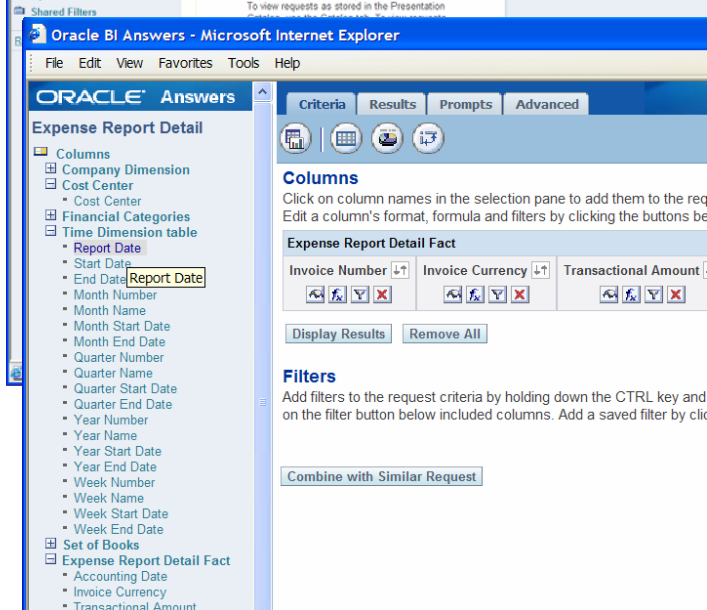
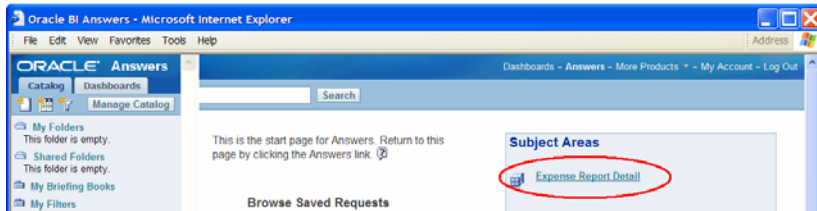


```
NQSSConfig.INI - Notepad
File Edit Format View Help
#
# Repository Section
#
# Repositories are defined as logical repository name - file name
# pairs. ODBC drivers use logical repository name defined in this
# section.
#
# All repositories must reside in OracleBI\server\Repository
# directory, where OracleBI is the directory in which the Oracle BI
# Server software is installed.
#
#####
[ REPOSITORY ]
# Star = paint.rpd, DEFAULT;
Star = obiee_dbi.rpd, DEFAULT;
```

Build Answers

- ❑ Log onto the portal: <http://yourhostname/analytics>
- ❑ Plan your dashboard content and layout
- ❑ Create Answers – queries, charts, pivot tables, narratives etc

- ❑ Combine multiple charts for complex views
- ❑ Can add common parameters



Create Dashboard

- ❑ Create Dashboard from saved Answers
- ❑ Dashboard by Roles

Profit and Loss Overview | Actual vs Budget/Forecast | Page Options

11/23/2005 | Year | Prior Year | W.Tucker | USD | Oc

Dashboard Editor

Drag and drop Dashboard Objects and Saved Content onto your current Dashboard.

My Dashboard | Page 1 | Allow Personal Saved Selections

Dashboard Objects

- Section
- Link or Image
- Embedded Content
- Text
- Folder
- Guided Nav. Link
- Briefing Book Nav. Link
- BI Publisher Report

Saved Content

- Dashboards
 - My Dashboard
 - Profit and Loss
 - Revenue Summary
- My Folder
 - Portal
 - Expenses Summary (MV)
 - Expenses Summary (BST)
- Shared Folders
 - Expenses Summary (MV)
 - Expenses Summary (BST)
 - Demo
 - Drilldown

Key Performance Indicators

In comparison to prior-year result, Operating Margin KPI has an out-of-bound negative change. To identify high-expenditure items, navigate to 'Actual vs. Budget/Forecast' page

[Actual vs Budget/Forecast](#)

Profit and Loss

Name	YTD	Prior YTD	Change
Revenue	327,444,170	317,257,531	3.2%
Cost of Goods Sold	167,602,844	159,990,565	4.8%
Gross Margin %	49	50	-0.8%
Expenses	103,350,010	103,293,522	0.1%
Operating Margin %	17	17	0.2%
Operating Income	56,483,308	53,973,444	4.7%

Hot Off The Press!

Top Sales in Q4 2005

- SmartBuy \$10,027,886
- Business World \$6,964,815
- Computer Service and Rentals \$6,520,056
- Imaging Innovations, Inc. \$6,173,778

Revenue by LOB

Government	Commercial
\$68,965,055	\$56,750,063

Support \$53,547,707 | **Distributions** \$48,141,244

Education \$44,282,756 | **Services** \$33,330,718

Partners \$22,156,061 | **G&A** \$268,132

Profit and Loss Statement - YTD

	Q1-05	Q2-05	Q3-05	Q4-05
Revenue	91,781,773	94,176,704	95,939,107	90,871,870
Cost of Goods Sold	45,394,884	46,670,122	53,278,570	46,550,756
Gross Income	46,386,889	47,506,582	42,660,536	44,321,114
Gross Margin %	51	50	44	49
Expenses	30,223,081	29,447,300	27,491,779	27,891,927
Operating Income	16,163,808	18,059,282	15,168,758	16,429,187
Operating Margin %	18	19	16	18

Operating Margin | Revenue | Total Expenses

OBIEE compared to Discoverer

❑ Equivalence:

- Oracle Answers provides capability for ad-hoc analysis
- Reports against business model (Discoverer EUL)

❑ Benefits

- Not dependent on Oracle database for connectivity – can connect to non-Oracle data sources (flat files, XML, MS-SQL Server, IBM DB2 etc) and applications (SAP)
- More data display options – gauges, narratives, tickers
- Better performance – caching, summary management
- Alerting, distribution
- Tightly integrated with Oracle SOA suite, BI publisher

Moving from Discoverer to OBIEE

- ❑ **Migrate EUL to the repository in OBIEE**
 - Manual steps – as shown before
 - Import Views or Materialized views in the physical layer
 - Make sure dates join to the time dimension
 - Ensure keys join to the other existing, conformed dimensions
- ❑ **Migrate Workbooks to Oracle Answers**
 - At this time, need to manually create Answers
 - Clean-up required, if you have used analytical functions like LEAD, LAG, RANK, TopN etc.
 - Interactive dashboard similar to Portal
 - OLAP – Answers is a relational query tool – OLAP data will be represented in tables. (Not sure how MOLAP data will be queried)
- ❑ **Oracle will provide utility to migrate EUL and workbooks automatically in future**

Other Considerations

- ❑ **Security** – OBIEE has strong functionality to enable security at two levels:
 - **Access Security** – Can group Dashboards, Answers or Functional areas and assign to individual users or groups.
 - **Data Security** – Enable the data security in DBI through use of proper filter conditions with OBIEE metadata

- ❑ **Performance and Summarization**
 - Leverage existing DBI base summary tables and materialized views in OBIEE
 - OBIEE can make intelligent decisions at run time to redirect queries to materialized views

- ❑ **Transactional Attributes**
 - Use transaction ids from DBI base tables to go to the transaction tables for additional content
 - Example: Payables Invoice Summary FII_AP_INVOICE_B can be joined back to the AP Invoice Header table (AP_INVOICES_ALL) by Invoice_ID to expose additional transactional attributes like Descriptive Flexfields.

Looking Forward

- ❑ **Future direction of DBI is to integrate with the OBIEE framework**
- ❑ **Oracle has announced Fusion Intelligence for eBusiness Suite that includes**
 - **Unified Logical model covering Financials, HR, Supply Chain and some CRM Intelligence modules**
 - **Some dashboard templates (role based)**
- ❑ **For scalability and flexibility to integrate with additional data sources, consider Oracle Business Intelligence Applications**
 - **Offers a fully scalable data warehouse with conformed dimensions**
 - **Covers key modules – Financials, Supply chain, etc.**
 - **You can integrate legacy sources into the DW using the same ETL environment**
 - **Can extend the dashboards, Answers and reports with custom content easily**

Critical Success Factors

- Good analytic and reporting requirements
- Design phase is required, even with a pre-built DW
- Adhere to best design and coding practices
- Keep business users engaged and interested
- Deliver in small, frequent increments
- Measure success*
 - Economic – Is there a positive impact on the bottom line?
 - Political – Is the new DW/BI system being used by all?
 - Technical – Are you using the right tools and does the design meet best practices?

* Source: "Data warehouse quality management," – Dr. James Thomann and David Wells, TDWI Conference

Summary

- ❑ **OBIEE is Oracle's next generation BI platform**
- ❑ **Can be deployed against different data sources, including non-Oracle sources and plugs into existing BI deployments**
- ❑ **Leverage eBusiness suite data by basing OBIEE dashboards on DBI tables and materialized views**
 - **Create physical layer, business layer, presentation layer**
 - **Build Answers and dashboards**
- ❑ **Oracle Fusion Intelligence for eBusiness suite will leverage DBI materialized views – can enhance it with detailed data from transactional tables**
- ❑ **Scalable, flexible DW/BI solution – use Oracle BI Applications or build your own**

Thank You!

**For additional details, write to me at
kiriti.mukherjee(a)gmail.com or
kmukherjee(a)protege.com**

(Replace (a) with @ in the email addresses above)