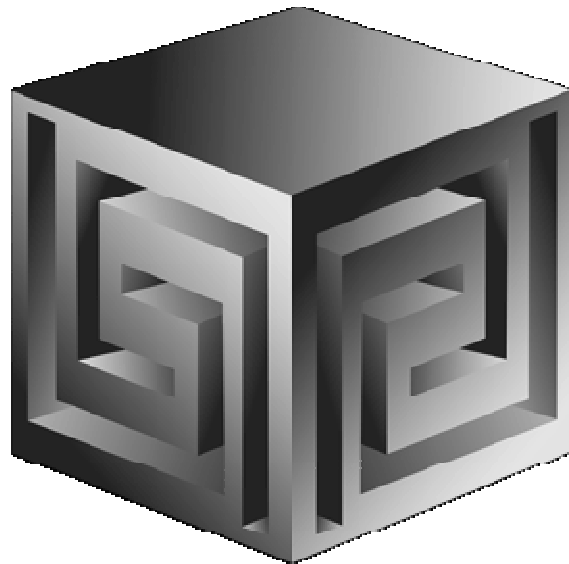


# Oracle BI and Oracle OLAP— What's All This About?

**October 2005**



**Dan Vlamis**

**dvlamis@vlamis.com**

**Vlamis Software Solutions, Inc.**

**816-781-2880**

**<http://www.vlamis.com>**

**Copyright © 2005, Vlamis Software Solutions, Inc.**



# **Vlami Software Solutions, Inc.**

---

- **Founded in 1992 in Kansas City, Missouri**
- **Oracle Partner and reseller since 1995**
- **Specializes in ORACLE-based:**
  - ☐ **Data Warehousing**
  - ☐ **Business Intelligence**
  - ☐ **Data Transformation (ETL)**
  - ☐ **Web development and portals**
  - ☐ **Express-based applications**
- **Delivers**
  - ☐ **Design and integrate BI and DW solutions**
  - ☐ **Training and mentoring**
- **Expert presenter at major Oracle conferences**



# Who Am I?

---

- **Dan Vlamis, President of Vlamis Software**
  - ☐ **Developer for IRI (former owners of Express)**
  - ☐ **Founded Vlamis Software in 1992**
  - ☐ **Beta tester and early adopter of Oracle OLAP**
  - ☐ **Expert speaker and author**
  - ☐ **“Techie” on OLAP DML**
  - ☐ **Recognized expert in Express and OLAP industry**



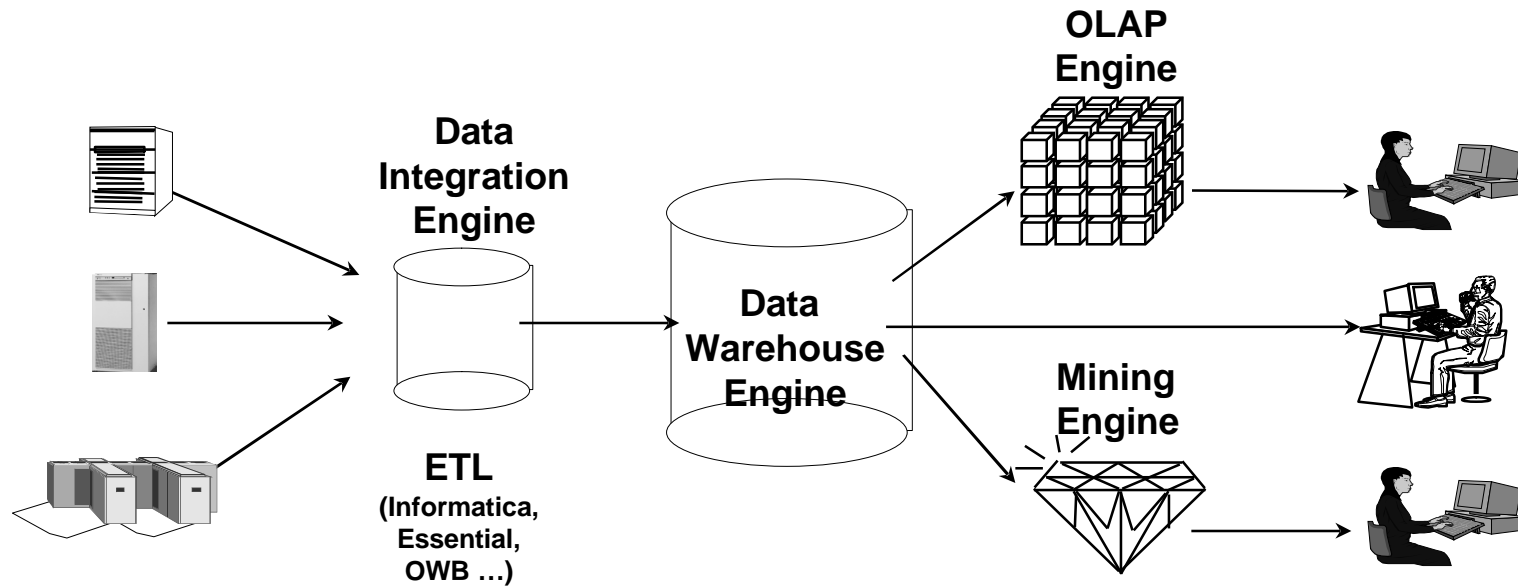
# Agenda

---

- **What are the parts of Oracle BI?**
- **How does Oracle OLAP fit in?**
- **OLAP Cubes and Analytic Workspaces**
- **Building Analytic Workspaces**
- **Front-end options**
  - ☐ **Discoverer**
  - ☐ **BI Beans**
  - ☐ **Spreadsheet Add-in**
- **Case studies of Oracle OLAP in the "real world"**



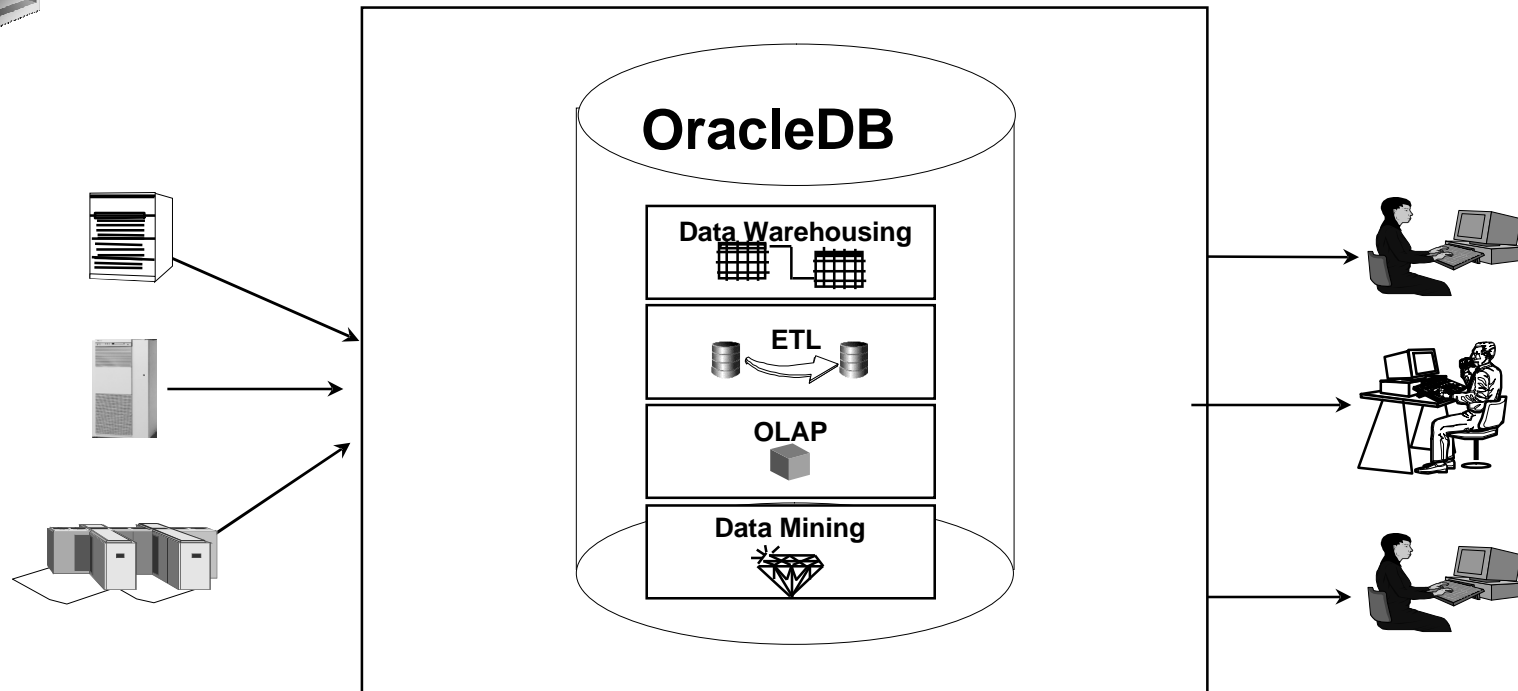
# Business Intelligence the Old Way



- Special purpose engines for differing tasks
- Metadata migration tools ease replication
- User interfaces generally different for different tools



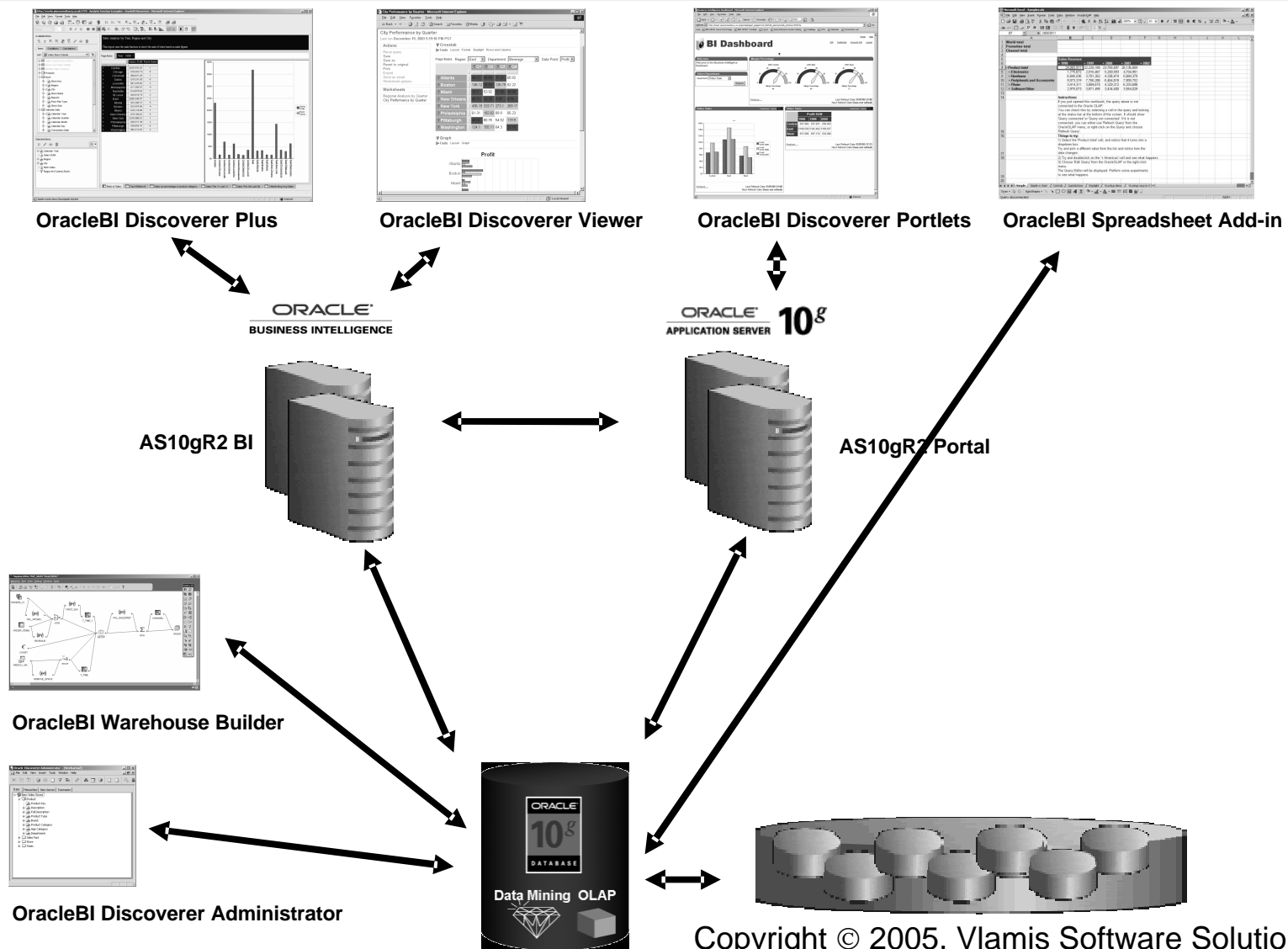
# BI the New Way: Oracle DB



- Single business intelligence platform
  - Reduce administration, implementation costs
  - Faster deployment & Improved scalability and reliability



# Oracle BI Product Architecture





# Definition of OLAP

---

**OLAP** stands for On Line Analytical Processing.  
That has two immediate consequences: the *on line* part requires the answers of queries to be fast, the *analytical* part is a hint that the queries itself are complex.

i.e. Complex Questions with FAST ANSWERS!





# **Why a Separate OLAP Tool?**

---

- **Empowers end-users to do own analysis**
- **Frees up IS backlog of report requests**
- **Ease of use**
- **Drill-down**
- **No knowledge of SQL or tables required**
- **Exception Analysis**
- **Variance Analysis**



# **What Does OLAP Add to a DW?**

---

- **Multidimensional user view of data**
- **Users create own reports**
- **Users create own measures**
- **Easy drill-down, rotate**
- **Iterative discovery process (not just reports)**
- **Ad-hoc analysis**
- **Easy selection of data with business terms**



# What Does Oracle OLAP Add to a DW?

---

- Multidimensional user view of data
- Users create own reports
- Users create own measures
- Easy drill-down, rotate
- Iterative discovery process (not just reports)
- Ad-hoc analysis
- Easy selection of data with business terms

- OLAP DML with what-if, forecasting
- Platform for extensions

 Not exposed with Discoverer



## **OLAP Option – High-level View**

---

- **Advanced analytics**
- **Integrated in RDBMS**
- **Easy to develop**
- **Easy to use**
- **Facilitate collaboration**
- **Flexible deployment**
- **Scaleable and performant**
- **True Relational – Multidimensional database**



# **OLAP Option – Technical View**

---

**The OLAP Option consists of five key elements:**

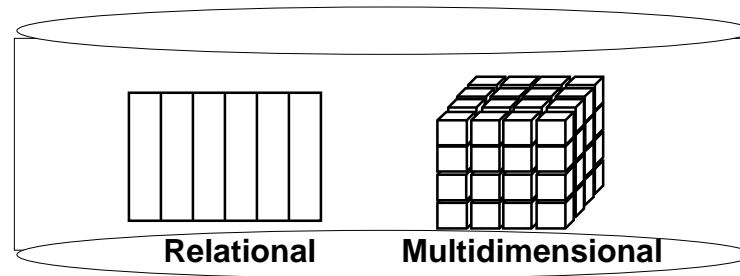
- 1. Multidimensional data types, used for holding cubes and dimensions, temporary or stored permanently in LOBs within schemas**
- 2. A multidimensional calculation engine**
- 3. A Java development framework with reusable OLAP components**
- 4. Extensions to SQL to allow SQL access to these multidimensional datatypes**
- 5. An additional layer of OLAP-specific metadata known as the OLAP Catalog**



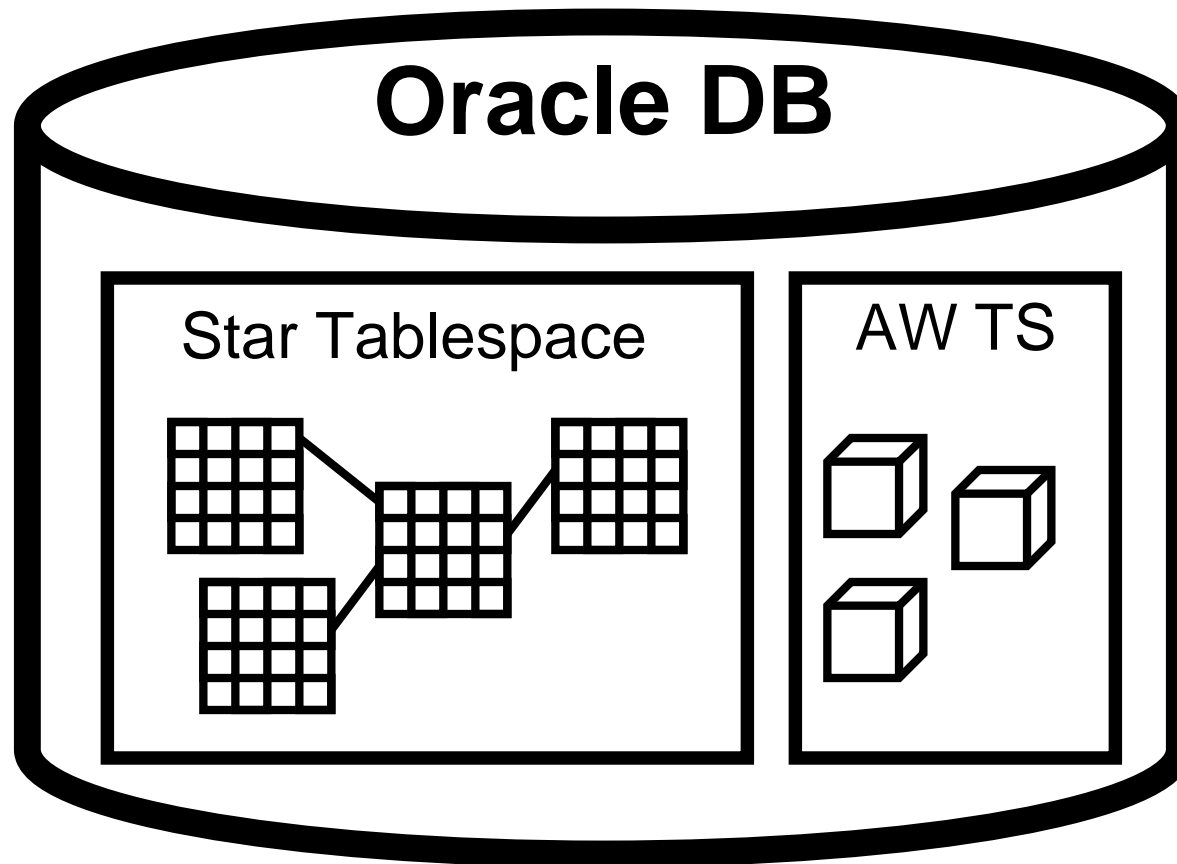
# ROLAP vs. MOLAP

---

- What is ROLAP? (Relational)
- What is MOLAP? (Multidimensional)
- It's all in how the data is stored



# Analytic Workspaces Are Stored in Tablespaces in OLAP





# What is an Analytic Workspace?

The screenshot displays the Oracle Enterprise Manager Console interface. On the left, a tree view shows the database structure: GLOBAL > GLOBAL\_AW > Tables > AW\$GLOBAL. The main panel shows the configuration for the AW\$GLOBAL table. The 'General' tab is active, displaying the following details:

- Name: AW\$GLOBAL
- Schema: GLOBAL\_AW
- Tablespace: GLOBAL\_AW
- Table type: ☒ Standard ☐ Organized Using Index (IOT)

Below these details is a 'Columns' table with the following data:

Name	Datatype	Size	Scale	Nulls?
PS#	NUMBER	10	0	✓
GEN#	NUMBER	10	0	✓
EXTNUM	NUMBER	8	0	✓
AWLOB	BLOB			✓
OBJNAME	VARCHAR2	60		✓
PARTNAME	VARCHAR2	60		✓





# Managing Analytic Workspaces

Analytic Workspace Manager dantoshm2:1521:orcl Model View

File View Tools Help

GLOBAL  
GLOBAL\_AW  
Analytic Workspaces  
GLOBAL (attached RW)  
Dimensions  
CHANNEL  
Levels  
TOTAL\_CH  
CHANNEL  
Hierarchies  
Attributes  
Mappings  
CUSTOMER  
PRODUCT  
TIME  
Cubes  
SALES\_CUBE  
Measures  
Calculated Mea  
Mappings  
PRICE\_AND\_COST  
Measure Folders

Dimensions:

Name	Long Description	Type
CHANNEL	Channel	User
CUSTOMER	Customer	User
PRODUCT	Product	User
TIME	Time	Time

Cubes:

Name	Long Descri...	Dimensions
SALES_CUBE	Sales Cube	TIME,CUSTOMER,PRODUCT,CHANNEL
PRICE_AND_CO...	PRICE AND ...	TIME,PRODUCT

Measures:

Name	Cube
SALES	SALES_CUBE
UNITS	SALES_CUBE
BASE_COST	SALES_CUBE
COST	SALES_CUBE
BASE_PRICE	SALES_CUBE

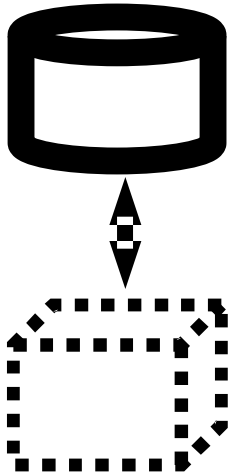
# Advantages of RDBMS Storage

---



**Oracle**

**Star Schema**



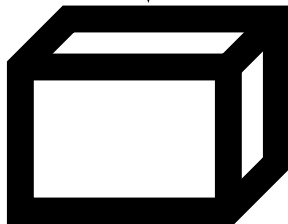
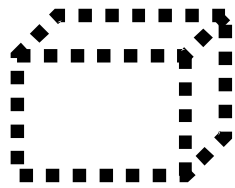
- **Store data in familiar RDBMS**
- **Easy access to data using SQL**
- **Can use materialized views**
- **Best for read-only applications**
- **Model with OWB**
- **Data may already be in schema**



# Advantages of AW Storage

---

- Faster multidimensional access
- Personal user workspaces
- Best for read/write applications
- Best for heavier analysis
- OLAP DML language



**Analytic  
Workspace**

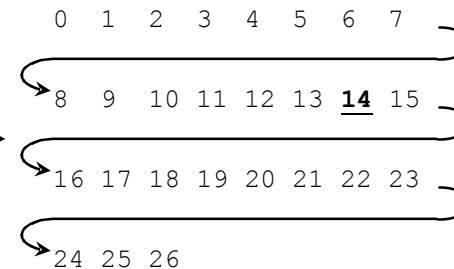
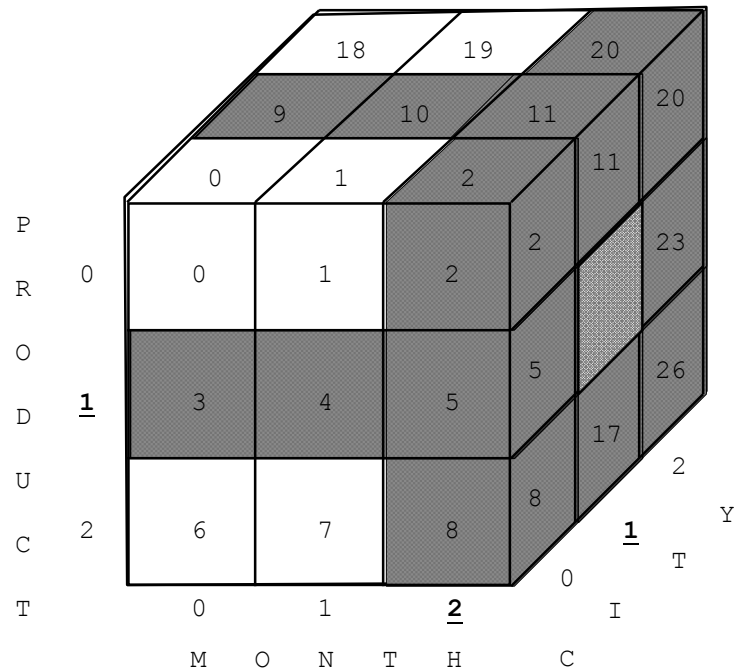


# Finding data is simple multiplication and addition

Formula for calculating cell offset:

$$\text{month} + \text{product} * (\# \text{ of months}) + \text{city} * (\# \text{ of months} * \# \text{ of products}) = 14$$

2 + 1 \* ( 3 ) + 1 \* ( 3 \* 3 ) = 14



Offset 14 \* 8 bytes each = 112.

Fseek to byte 112 to find data.

See <http://www.vlami.com> for

"How Does Express Really Work Anyway" for details.



# Relational Cubes vs. AW Cubes

---

- Relational cubes include
  - ☐ Star schema
  - ☐ OLAP catalog metadata
  - ☐ Summary data in materialized views
- Analytic workspace cube include
  - ☐ Analytic workspace built to the database standard form specification
  - ☐ OLAP catalog metadata in AW



# Cubes Defined

---

- **Definition:**
- **Cubes are collections of measures. They are a logical way to organize data. All measures in a cube share the same dimensionality**
- **Examples:**
  - ❑ **Sales\_Cube (with Units, Dollars, Profit)**
  - ❑ **Finance\_Cube (with Actual, Budget, Variance)**



# What Are AW Cubes?

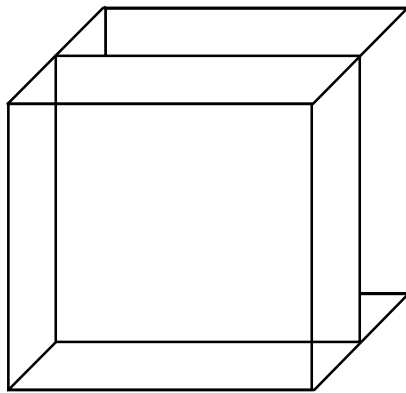
---

- **Data stored as arrays**
- **Dimension values are internally integers**
- **Offset calculated using simple multiplication**
- **Offset tells exactly where to look for data**
- **Pages and segmentation complicate design**
- **Conjoints and composites handle sparsity**

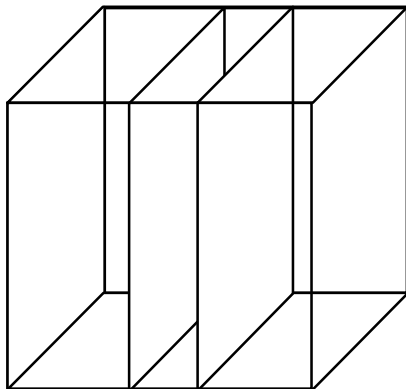


# OLAP AW Stores Data in Cubes

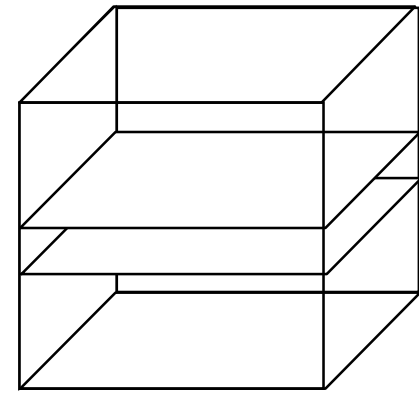
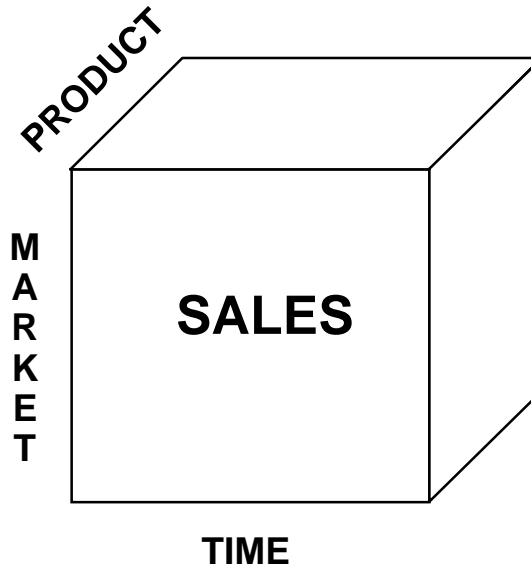
*Fast Flexible Access to Summarized Data*



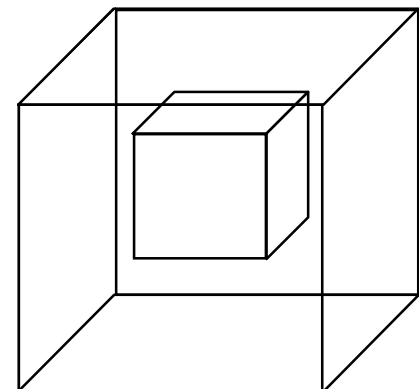
**Product Mgr. View**



**Financial Mgr. View**



**Regional Mgr. View**



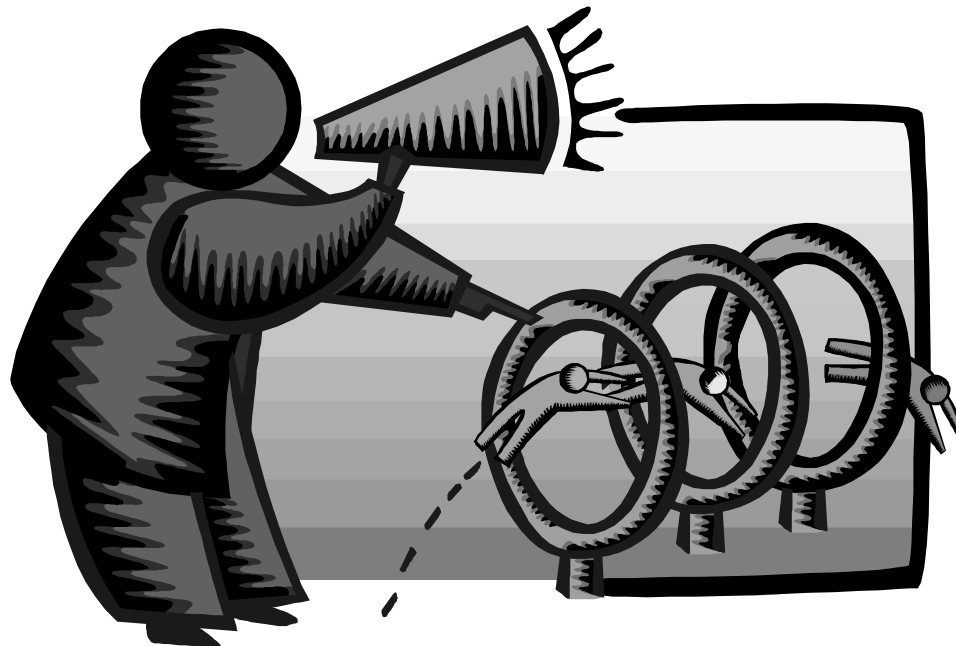
**Ad Hoc View**



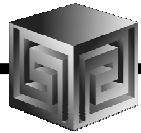


# Building Cubes in AWM

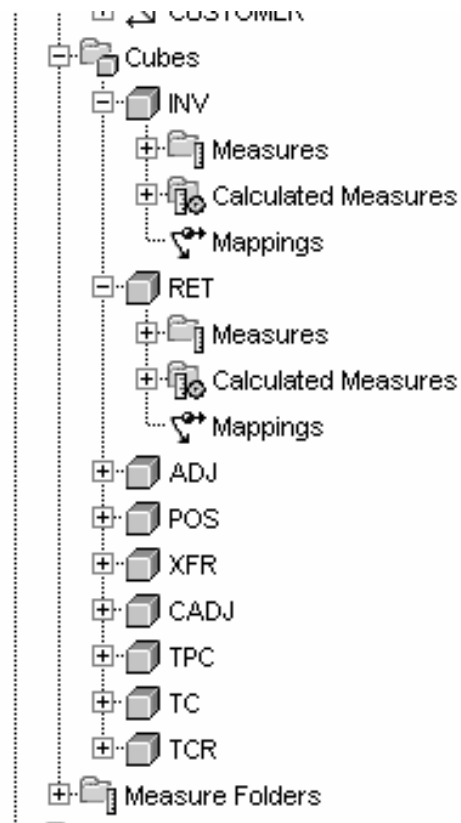
---



**See November / December 2005 Oracle Magazine  
for 4-page article "Use Oracle AWM 10g to build  
analytic workspaces" with details**



# Cubes in AWM





# Define Measures

Analytic Workspace Manager - cc-m2:1521:orc10 - Model View

File View Tools Help

INTERNET\_APPSERVER\_REGISTRY  
IP  
LEV\_AW  
Analytic Workspaces  
LEV\_AW (attached RW)  
Dimensions  
REASONS  
TIME  
PRODUCT  
CUSTOMER  
Cubes  
INV  
Measures  
GROSS\_SALES  
GROSS\_UNITS  
GROSS\_COGS  
Calculated Measures  
Mappings  
RET  
Measures  
Calculated Measures  
Mappings  
ADJ  
POS  
XFR  
CADJ  
TPC  
TC  
TCR  
Measure Folders  
LEV\_PROGRAMS  
LEV\_DBA  
MDDATA  
MDSYS  
MGMT\_VIEW

General Implementation Details Rules Summarize To Cache

Specify General Measure Information

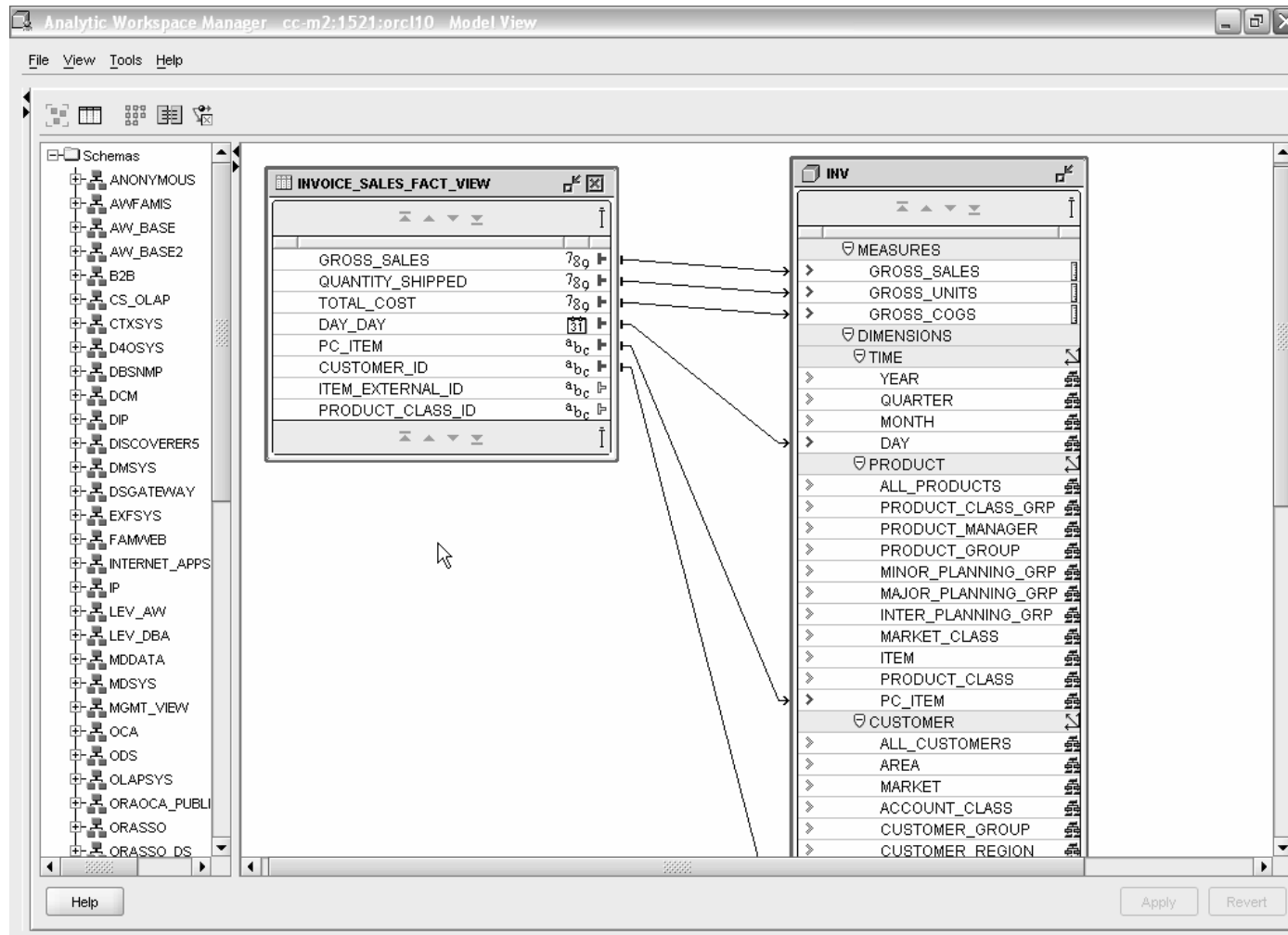
Name: GROSS\_SALES  
ID: INV.GROSS\_SALES.MEASURE  
Short Label: Gross Sales  
Long Label: Gross Sales  
Description: Gross Sales

☐ Use Aggregation specification from the cube  
☒ Override the Aggregation specification of the cube

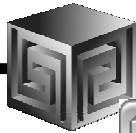
Help Apply Revert



# Map Cube



# Maintaining Dims/Cubes

The 'Maintenance Wizard: Select objects' dialog box is shown in the background. It has a title bar with a close button. The main area contains the text 'Choose dimensions to be maintained for analytic workspace LEV\_AW.LEV\_AW'. Below this are two list boxes: 'Available Target Objects' containing 'Dimensions' and 'Cubes', and 'Selected Target Objects' containing 'Dimensions' and 'PRODUCT'. At the bottom left is a 'Help' button and a checkbox labeled 'Add the Dimension' which is checked.

Maintenance Wizard: Select objects

Choose dimensions to be maintained for analytic workspace LEV\_AW.LEV\_AW

Available Target Objects

- Dimensions
- Cubes

Selected Target Objects

- Dimensions
- PRODUCT

☒ Add the Dimension

Help

The 'Maintenance Wizard: Analytic Workspace task processing options (LEV\_AW.LEV\_AW)' dialog box is in the foreground. It has a title bar with a close button. The main area contains the text 'Choose how and when the maintenance task is processed.' Below this are two main options: 'Run maintenance task immediately in this session' (checked) and 'Submit the maintenance task to the Oracle Job Queue' (unchecked). Under the second option are two radio buttons: 'Run Immediately' (selected) and 'Run at a future time'. Below these are fields for 'Date and Time' (03/28/2005 19:30:35), 'Maximum number of parallel processes' (1), and 'Save maintenance task to script' (unchecked). The 'File Name' field is empty. At the bottom are 'Help', '< Back', 'Next >', 'Finish', and 'Cancel' buttons.

Maintenance Wizard: Analytic Workspace task processing options (LEV\_AW.LEV\_AW)

Choose how and when the maintenance task is processed.

☒ Run maintenance task immediately in this session

☐ Submit the maintenance task to the Oracle Job Queue

☐ Run Immediately

☒ Run at a future time

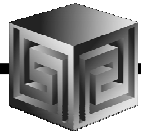
Date and Time: 03/28/2005 19:30:35

Maximum number of parallel processes: 1

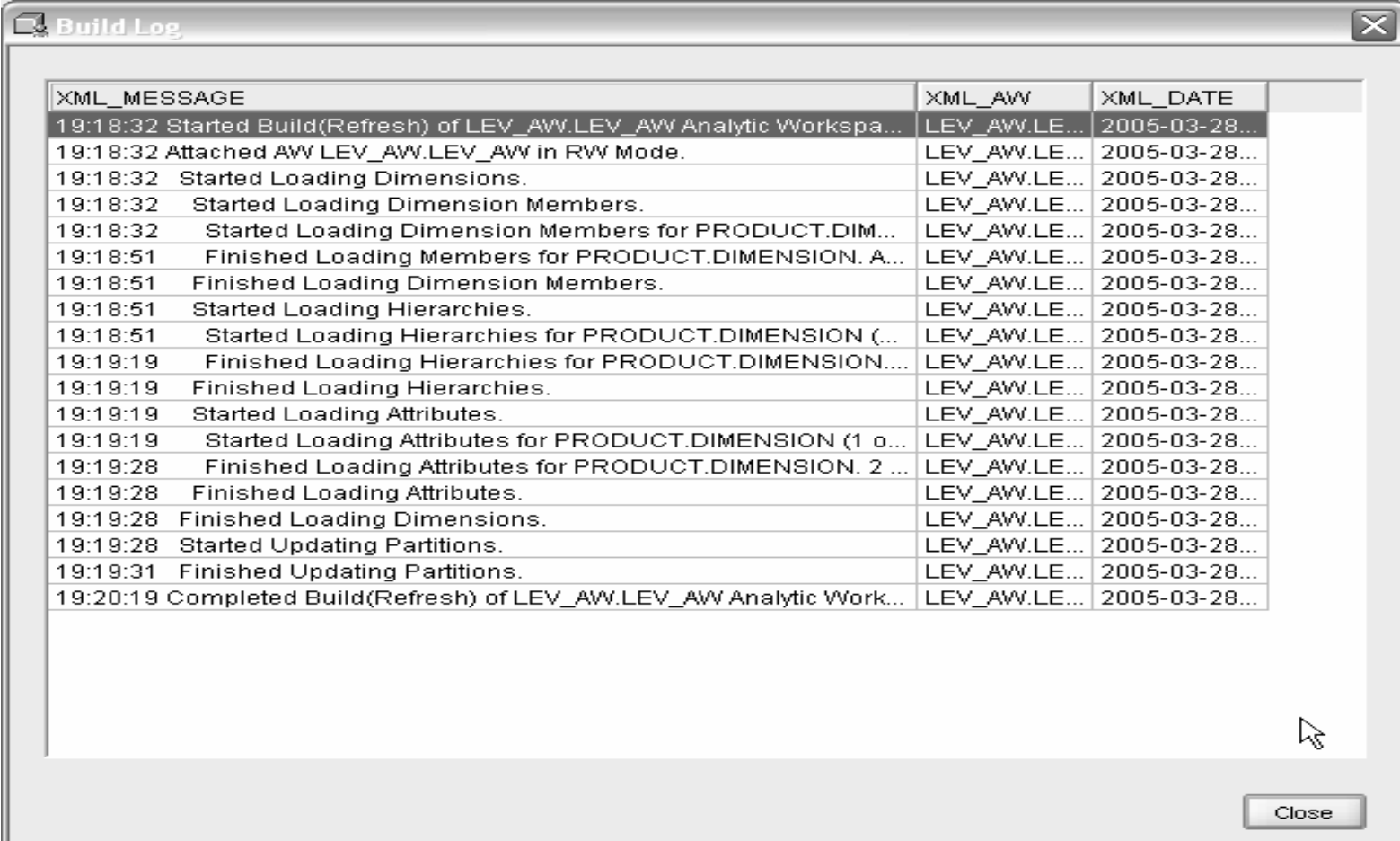
☐ Save maintenance task to script

File Name:

Help < Back Next > Finish Cancel



# Maintaining Dims/Cubes



A screenshot of a 'Build Log' window. The window has a title bar with a close button (X) on the right. The main area contains a table with three columns: XML\_MESSAGE, XML\_AW, and XML\_DATE. The table lists various build steps and their completion times. A mouse cursor is visible near the bottom right of the table area. A 'Close' button is located at the bottom right of the window.

XML_MESSAGE	XML_AW	XML_DATE
19:18:32 Started Build(Refresh) of LEV_AW.LEV_AW Analytic Workspa...	LEV_AW.LE...	2005-03-28...
19:18:32 Attached AW LEV_AW.LEV_AW in RW Mode.	LEV_AW.LE...	2005-03-28...
19:18:32 Started Loading Dimensions.	LEV_AW.LE...	2005-03-28...
19:18:32 Started Loading Dimension Members.	LEV_AW.LE...	2005-03-28...
19:18:32 Started Loading Dimension Members for PRODUCT.DIM...	LEV_AW.LE...	2005-03-28...
19:18:51 Finished Loading Members for PRODUCT.DIMENSION. A...	LEV_AW.LE...	2005-03-28...
19:18:51 Finished Loading Dimension Members.	LEV_AW.LE...	2005-03-28...
19:18:51 Started Loading Hierarchies.	LEV_AW.LE...	2005-03-28...
19:18:51 Started Loading Hierarchies for PRODUCT.DIMENSION (...)	LEV_AW.LE...	2005-03-28...
19:19:19 Finished Loading Hierarchies for PRODUCT.DIMENSION....	LEV_AW.LE...	2005-03-28...
19:19:19 Finished Loading Hierarchies.	LEV_AW.LE...	2005-03-28...
19:19:19 Started Loading Attributes.	LEV_AW.LE...	2005-03-28...
19:19:19 Started Loading Attributes for PRODUCT.DIMENSION (1 o...	LEV_AW.LE...	2005-03-28...
19:19:28 Finished Loading Attributes for PRODUCT.DIMENSION. 2 ...	LEV_AW.LE...	2005-03-28...
19:19:28 Finished Loading Attributes.	LEV_AW.LE...	2005-03-28...
19:19:28 Finished Loading Dimensions.	LEV_AW.LE...	2005-03-28...
19:19:28 Started Updating Partitions.	LEV_AW.LE...	2005-03-28...
19:19:31 Finished Updating Partitions.	LEV_AW.LE...	2005-03-28...
19:20:19 Completed Build(Refresh) of LEV_AW.LEV_AW Analytic Work...	LEV_AW.LE...	2005-03-28...



# Understand Design

- Data is Electronics Company
- Dimensions are:
  - ☐ Product
  - ☐ Channel
  - ☐ Customer
  - ☐ Time
- Measures are:
  - ☐ Sales
  - ☐ Units
  - ☐ Calc Price

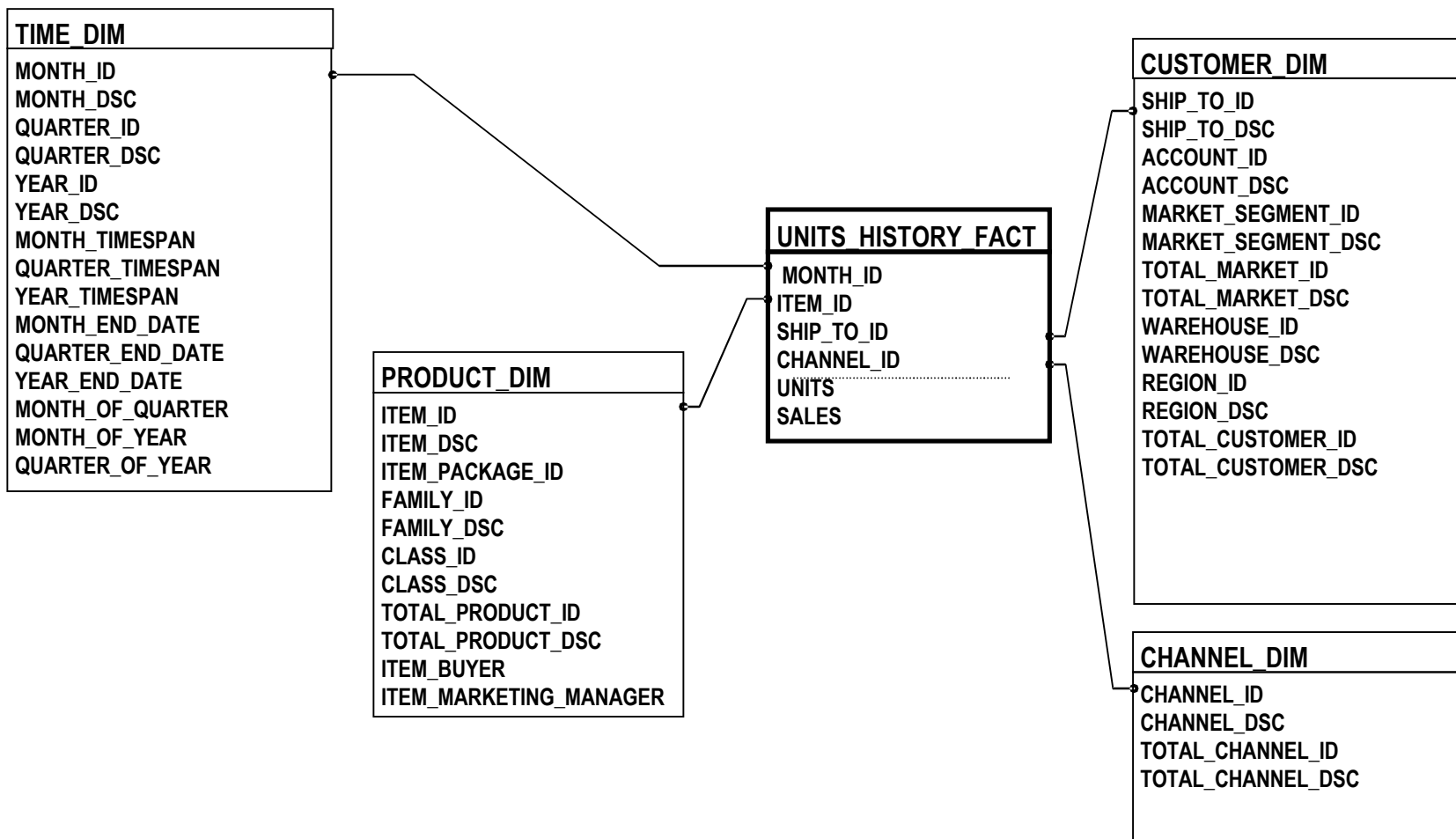
Measure Data Viewer

Page Items: Channel All Channels Customer All Customers

	2004		
	Sales	Units	AVG_SALES_PRICE
▼ Total Product	80,846,148	339,831	238
▼ Hardware	72,583,931	117,595	617
▶ Memory	3,164,263	9,038	350
▶ CD/DVD	9,680,971	40,520	239
▶ Portable PCs	11,095,375	4,857	2,284
▶ Desktop PCs	42,605,388	24,995	1,705
▶ Monitors	2,529,677	8,478	298
▶ Modems/Fax	3,508,256	29,707	118
▶ Software/Other	8,262,217	222,236	37



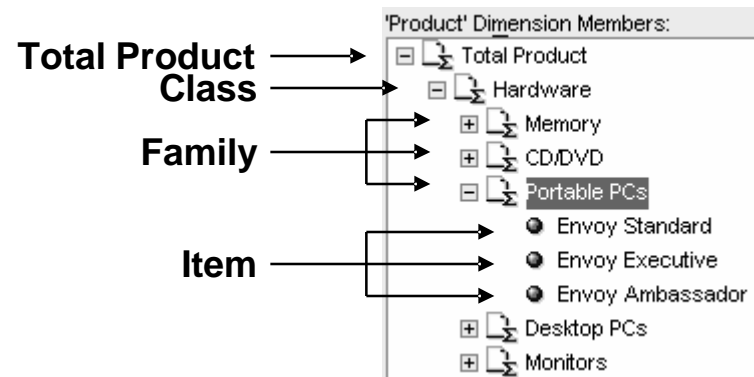
# Existing Star-Schema Tables





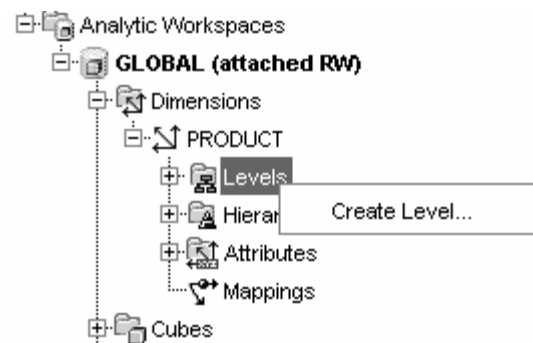


# Adding Levels to Dimension



Right-click Levels  
and select  
Create Level...

Enter levels:  
Total\_Product  
Class  
Family  
Item  
(one at a time)



**Create Level**

General

Specify General Level Information

Name:

Short Label:

Long Label:

Description:



# Adding Dimension Attributes



## Attributes

Long Description and  
Short Description are  
automatically added.

Add extra attributes:

Package

Buyer

Marketing Manager

But only for ITEM level  
(the attributes don't apply  
to higher levels)



# **AWM Cube Builder Tips**

---

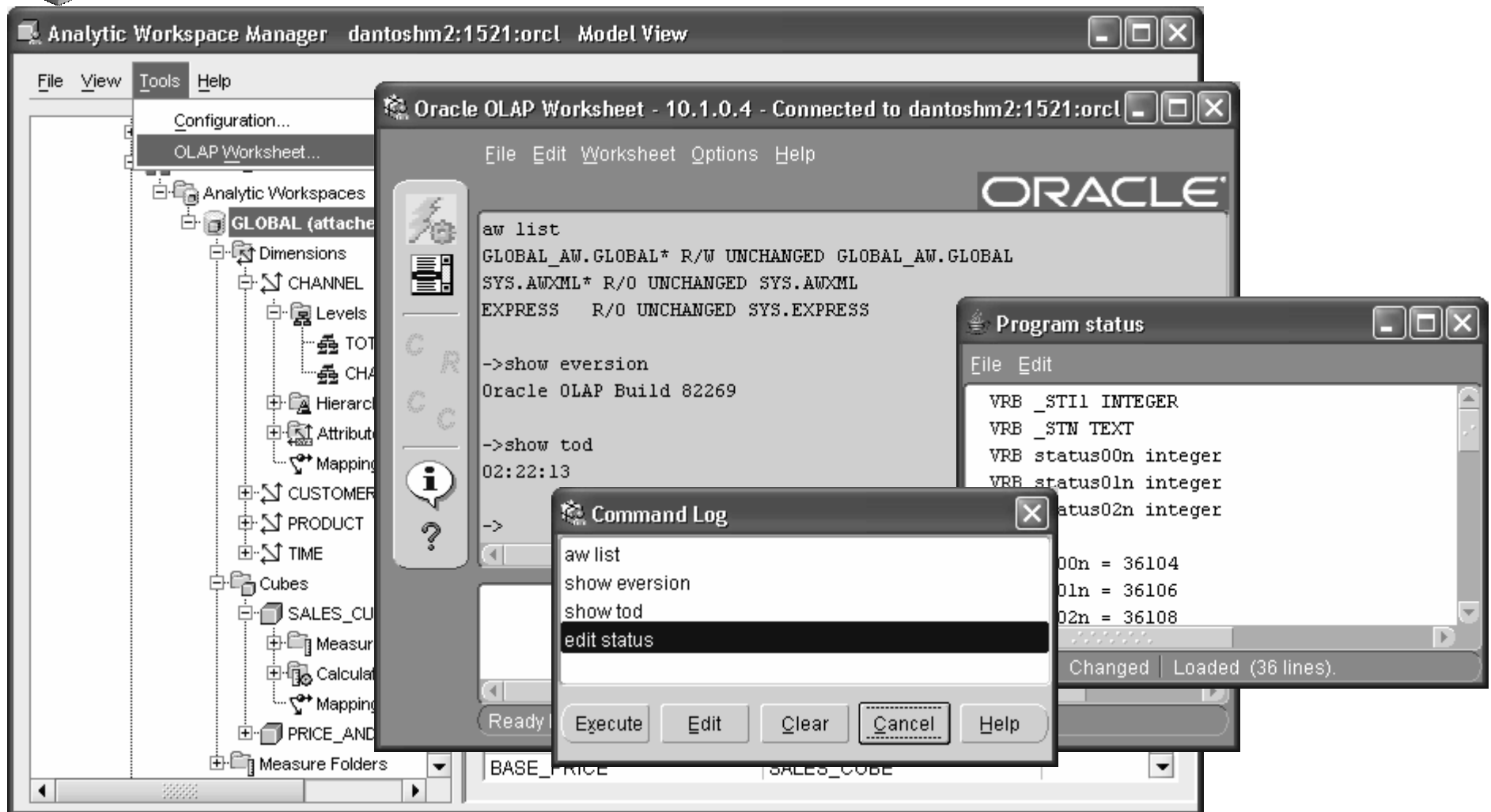
- **Remember to save Everything to XML files**
- **Remember this is Real-time.... So changes are nearly immediate (may need to reload data)**
- **Use “View” to see results in tool – No Need for BI Beans to validate success!**
- **Move Measures to Folders**
- **Can save Calculated Measures to XML – Then you can Edit!**

# AW Creation in AWM10g



- **If create an AW in the Object view:**
  - ☐ AW is NOT in standard form
  - ☐ AW won't be seen in the Model view
- **If create an AW in the Model view:**
  - ☐ Can define the AW using logical elements (dimensions, levels, hierarchies, cubes, measures, mappings)
  - ☐ AW can also be seen in the Object view which shows the physical implementation of standard form

# OLAP Worksheet (like SQL Worksheet) Launched from AWM





# Oracle BI – Getting the Data In

---

- **Storing / calculating with the data**
  - ☐ Oracle RDBMS
  - ☐ Oracle OLAP (an option to the RDBMS)
- **Getting the data in / managing**
  - ☐ Oracle Warehouse Builder
  - ☐ Oracle Enterprise Manager
  - ☐ Analytic Workspace Manager



# Getting the Data Out

---

- **Once the Data is in OLAP how do we get the data out?**
- **Alternatives**
  - ☐ **BI Beans applications (Custom or pre-built)**
  - ☐ **Discoverer**
  - ☐ **Oracle Reports**
  - ☐ **SQL Access from any SQL tool**
  - ☐ **Spreadsheet Add-in**
  - ☐ **Any except Spreadsheet add-in can be in a portal and with web interface**



# **What Access Tool?**

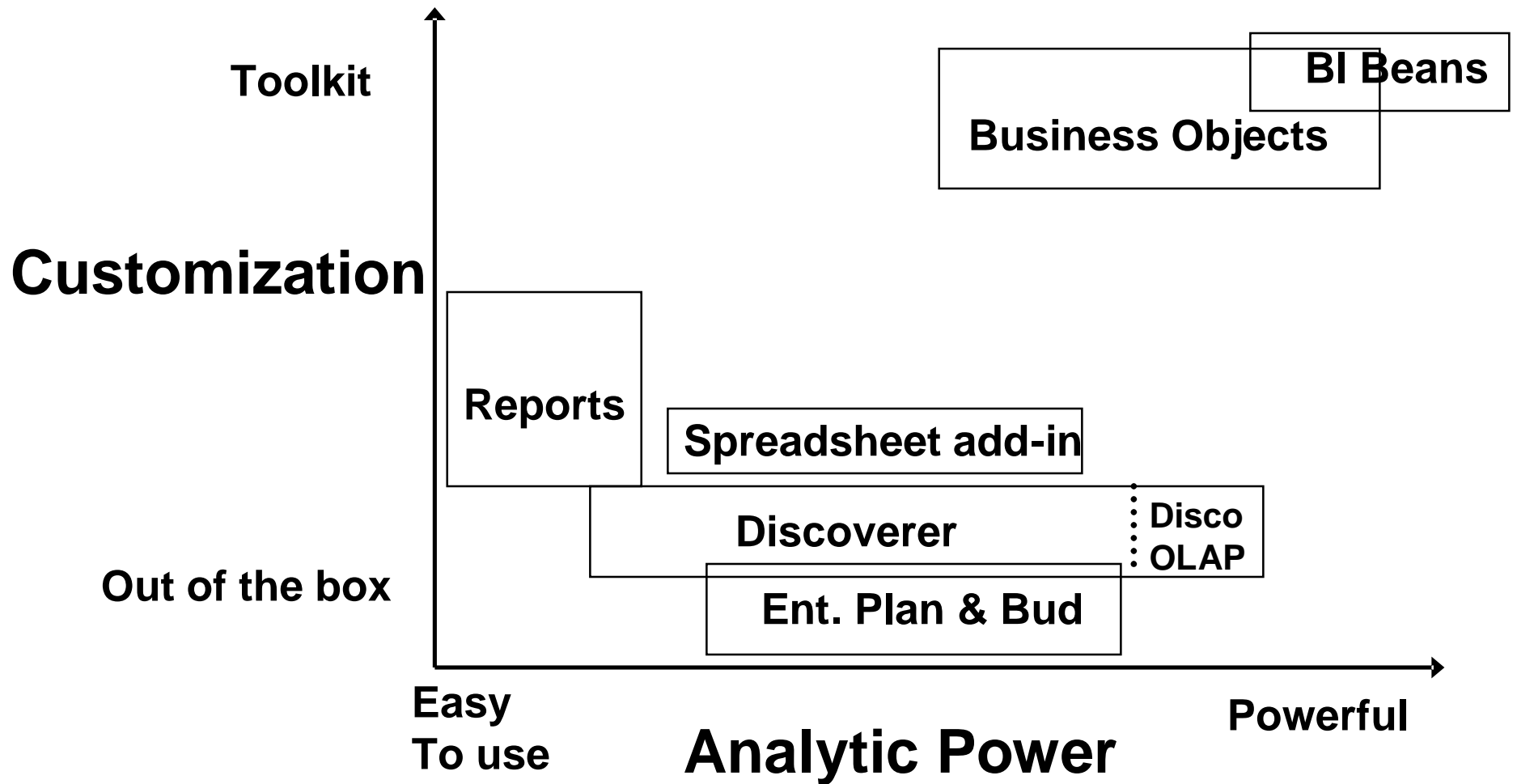
---

- **Java OLAP API designed for products**
- **Discoverer for ad hoc analysis**
- **BI Beans for custom applications (using JDev)**
- **Spreadsheet Add-in for access from Excel**
- **Oracle Reports for highly formatted reports**
- **Oracle Apps for analysis of Apps data**
- **3rd Party tools fill in gaps**





# Choices for Viewing Data





# What Are BI Beans?

---

- **BI Beans 9.0.2 first released in May 2002**
- **Beans 10.1.2.1 Current Ver.**
- **Part of Oracle10g Developer Suite and Oracle BI**
- **Integrated extension for Oracle9i/10g JDeveloper**
- **Set of Java Beans (API) and integrated BI Wizards (JDev)**
- **Integrated tightly with Oracle9i/10g Database**
- **Exploits the Analytics of the 9i/10g Database**
  - ☐ **SQL Analytics**
  - ☐ **OLAP Analytics**



# BI Beans Key Features

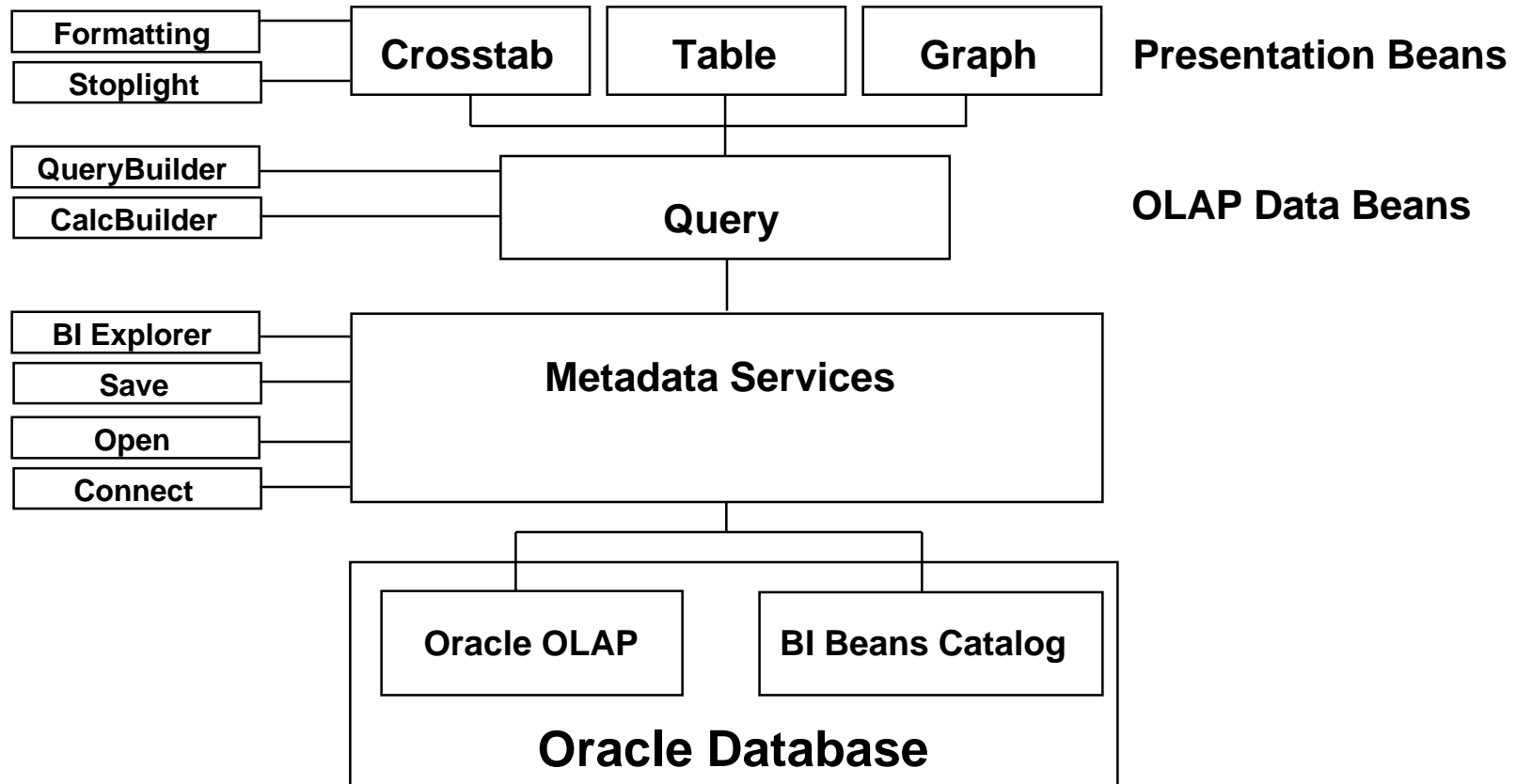
---

- **Leverage Integrated Oracle technology stack**
  - ☐ Development
  - ☐ Administration
- **High Developer Productivity**
  - ☐ JDeveloper Wizards - object and 100% Java code generation
  - ☐ Live data access at design time
- **Analytic Power**
  - ☐ Simplified access to the power of Oracle
    - Multidimensional Engine
    - Relational Data Warehouse Schema
- **Collaboration Support**
  - ☐ Share analyses across user community
  - ☐ Secure

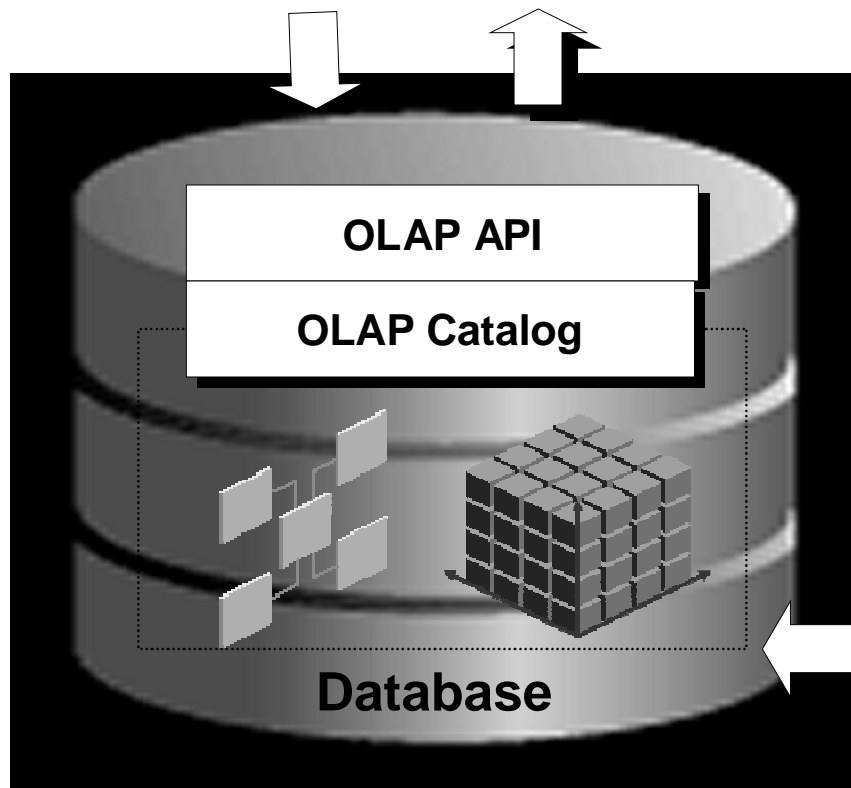
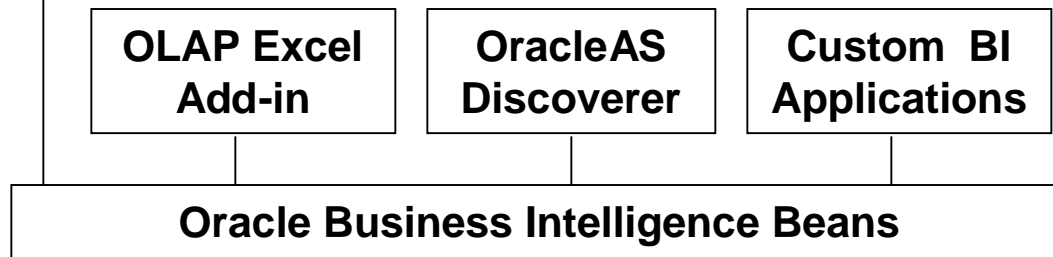


# BI Beans Components

*High level components reflect business usage*



# Ad-hoc Access OLAP via Discoverer



## OracleAS Discoverer

- An intuitive ad-hoc query, reporting, analysis, and Web-publishing tool
- Enables advanced analyses on both operational and OLAP data sources

Warehouse Builder

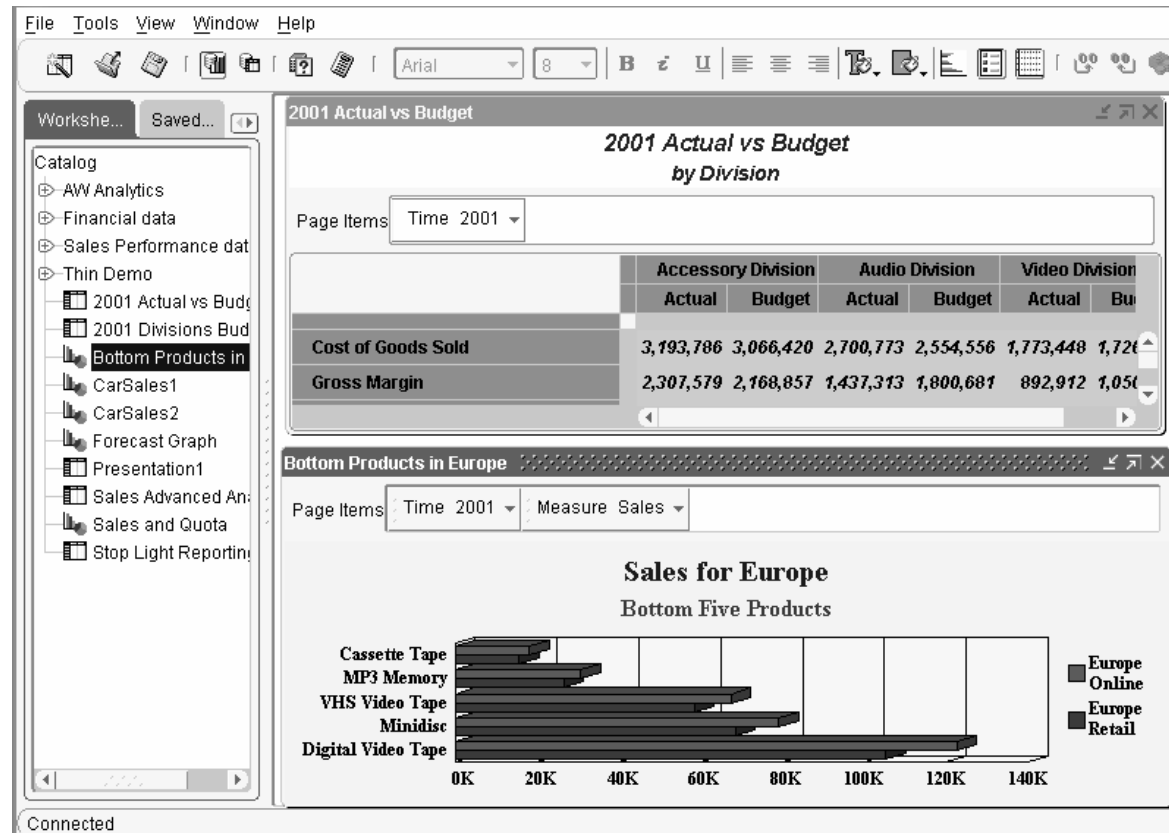
Enterprise Manager

AW Manager



# Discoverer 10g – Discoverer OLAP

- Currently AWM creates EUL for SQL Access
- Disco 10g adds Direct Access to OLAP





# Discoverer Specifics

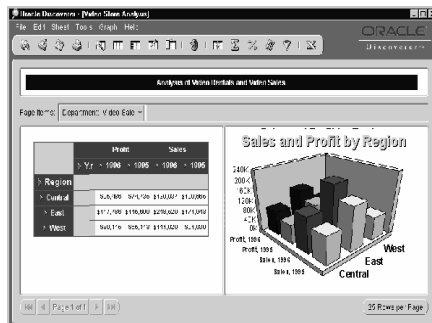
---

- **Discoverer "Classic" still there**
- **Discoverer OLAP built with BI Beans**
- **Integrated Relational and Multidimensional access to data**
- **Discoverer OLAP uses BI Beans repository with Discoverer extensions**
- **Uses "Workbook" metaphor to organize crosstabs and graphs into screens**

# Three Deployments of Discoverer

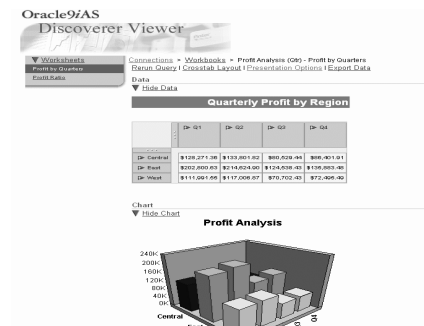


## Discoverer Plus



**Power user tool**  
**Creates new workbooks**  
**Runs via applet**

## Discoverer Viewer



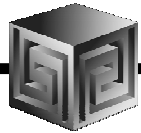
**Casual user tool**  
**Existing workbooks**  
**Launched from Browser**  
**Zero footprint**

## Discoverer Portlets



**Casual user tool**  
**Existing workbooks**  
**Part of Portal**  
**Launches Viewer**  
**Zero footprint**





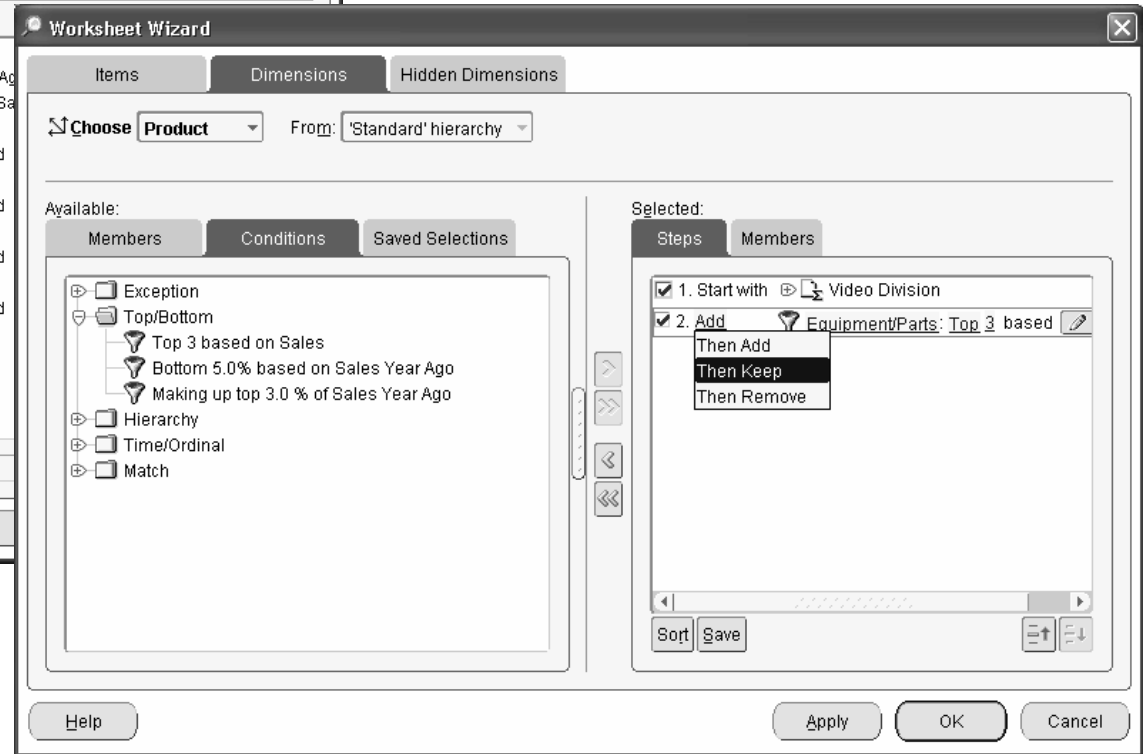
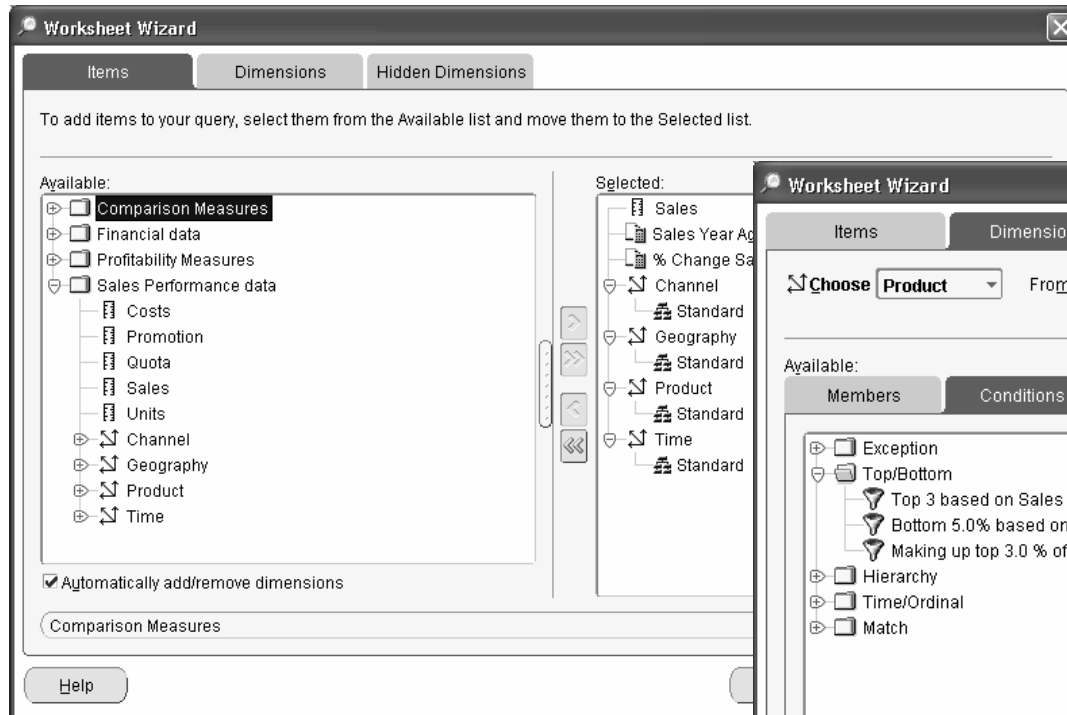
# **Discoverer Development Themes**

---

- **Single tool for both relational and multidimensional analysis**
- **Easy access to powerful analytics of the database**
- **Highly customizable display**
- **Support collaboration**



# Query Building



Simplified access  
to analytics



# Custom Calculations

Powerful calculations,  
simple user interface

Calculation Wizard - Step 1 of 3: Name and Type

What would you like to name this calculation?

What type of calculation do you want to create?  
Calculation Type:

- Advanced Arithmetic
  - Cumulative Total
  - Index
  - Percent Markup
  - Percent Variance
  - Rank
  - Share
  - Variance
- Prior/Future Comparison
  - Prior Value
  - Difference from Prior Period
  - Percent Difference from Prior Period

Description of selected type.

Help Back Next Finish

Calculation Wizard - Step 2 of 3: Percent Difference from Prior Period

**Percent Difference from Prior Period**  
Returns the percentage difference between the current value of a measure and the value of that measure from a prior period.

What measure do you want to calculate percent difference for?  
Measure:

Calculate percent difference based on values:  
Over time in:

From:  
☒ Year ago  
☐ Period ago  
☐

Number Format:

Help Back Next Finish Cancel



# Direct Manipulation

Members Saved Selections

Dimension: Measures

- Root
  - Comparison Measures
    - % Change Sales
    - Quota Variance
    - Sales Year Ago
  - Financial data
  - Profitability Measures
  - Sales Performance data
    - Costs
    - Promotion
    - Quota
    - Sales
    - Units

1. Start with Members

- Sales
- Sales Year Ago
- % Change Sales

Navigator allows for direct manipulation of the query by providing drag and drop, right mouse, and push button access to common query actions.

Page Items Product All Products Time March 2004

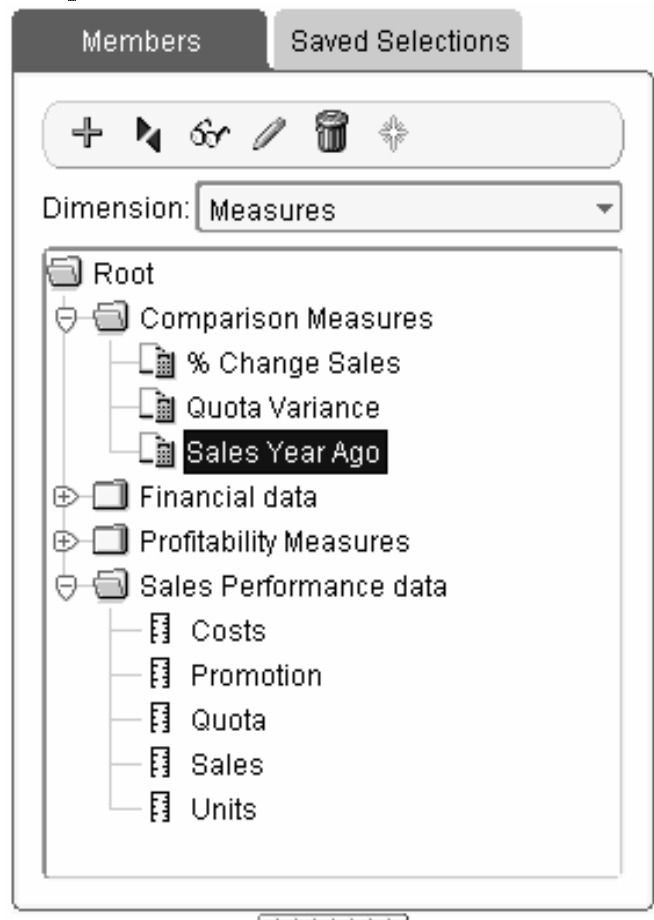
Page Items	Time March 2004
Worldwide	9.2
Americas	3.5
Asia	2.5
Australia	1.0
Europe	2.5

Negative sales growth highlighted red.

Sales vs. Year Ago Product Performance by Region Sales Trends



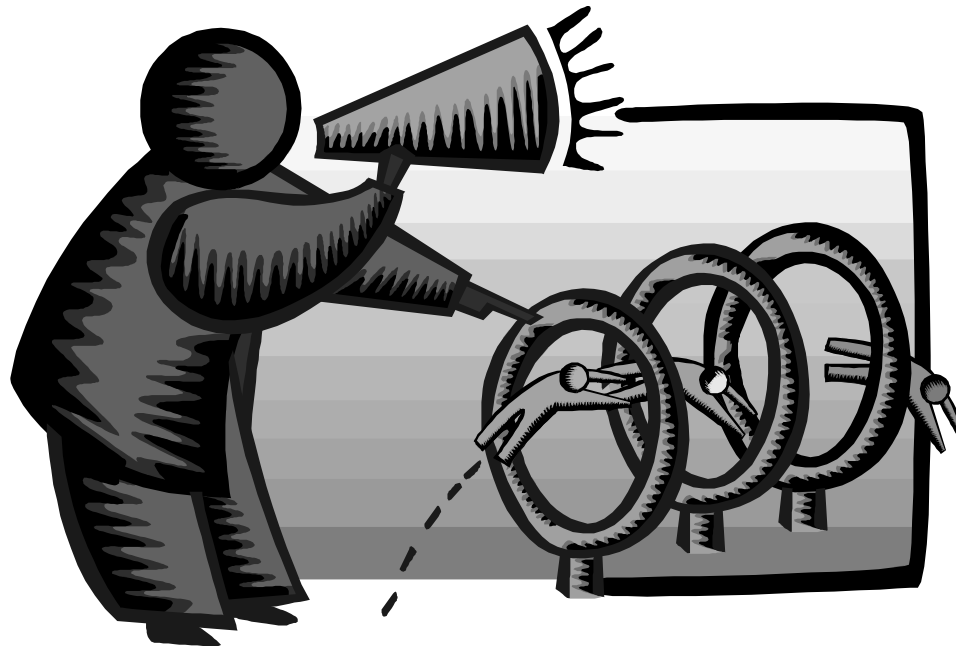
# Navigator – Member Selection

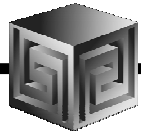


- **Dimension members and measures can be selected and applied to the worksheet**

# Demonstration of Discoverer OLAP

---



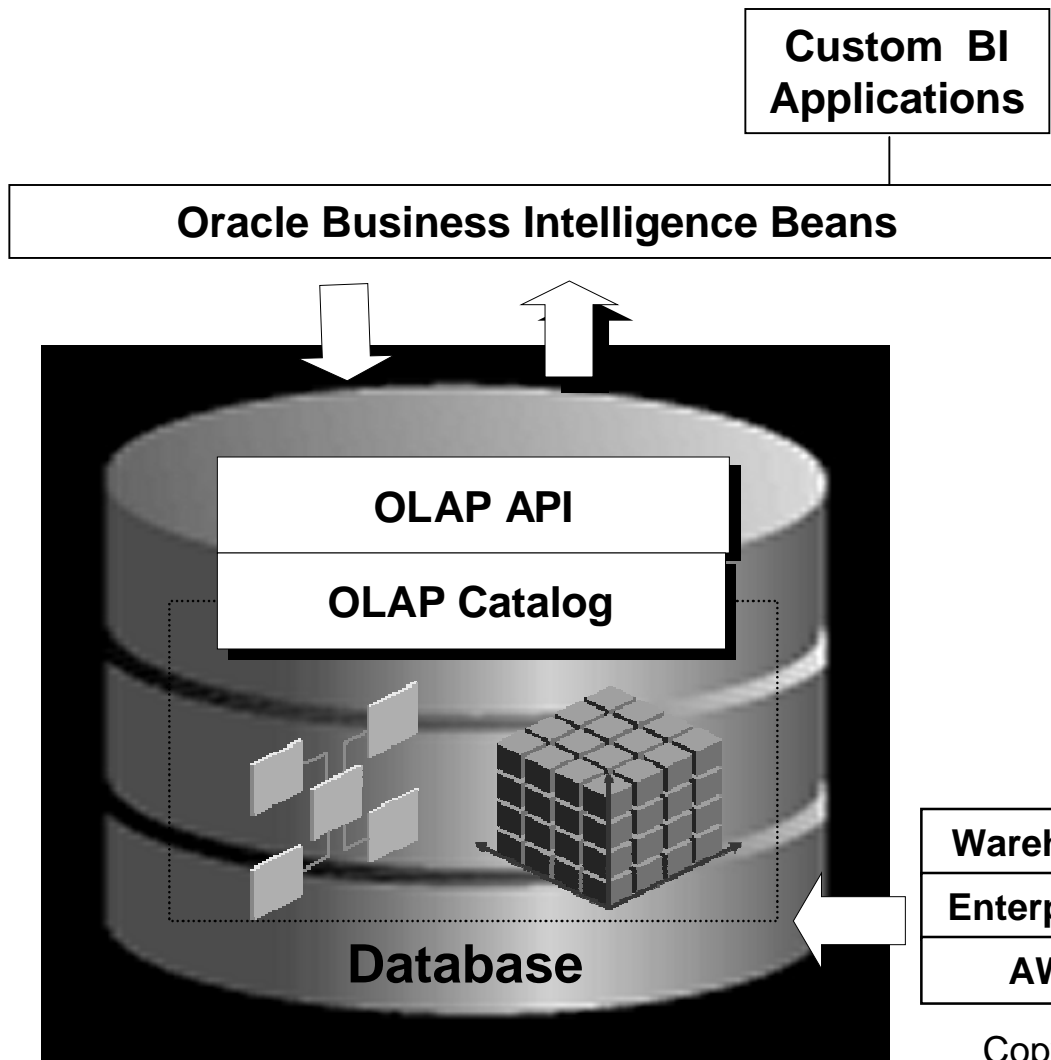


# **Discoverer Plus Features Over Vanilla BI Beans Application**

---

- **Multiple deployments**
  - ☐ Thick applet
  - ☐ Thin viewer
  - ☐ Portlet
- **Worksheet metaphor**
- **Export to PDF**
- **Undo**
- **Drag and Drop selection changes**
- **Totals at bottom or right**
- **Other features as well**

# Custom Development via BI Beans



## Custom BI Applications

- BI Beans integrated with JDeveloper provides a powerful environment for rapidly developing powerful business intelligence applications
- Targeted applications enable companies to deliver valuable insights to a wide range of end users: executives, analysts, information consumers

Warehouse Builder

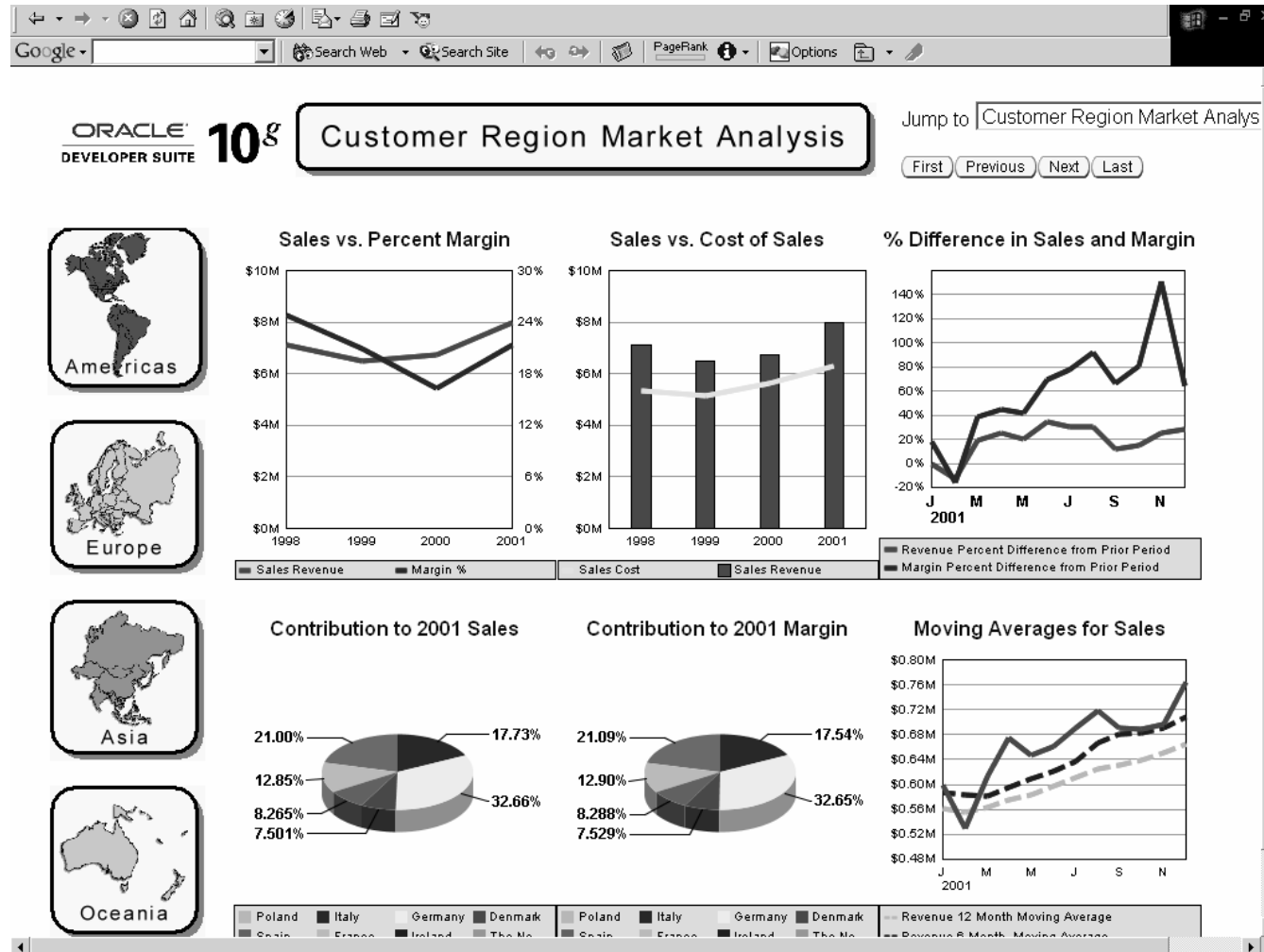
Enterprise Manager

AW Manager

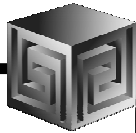




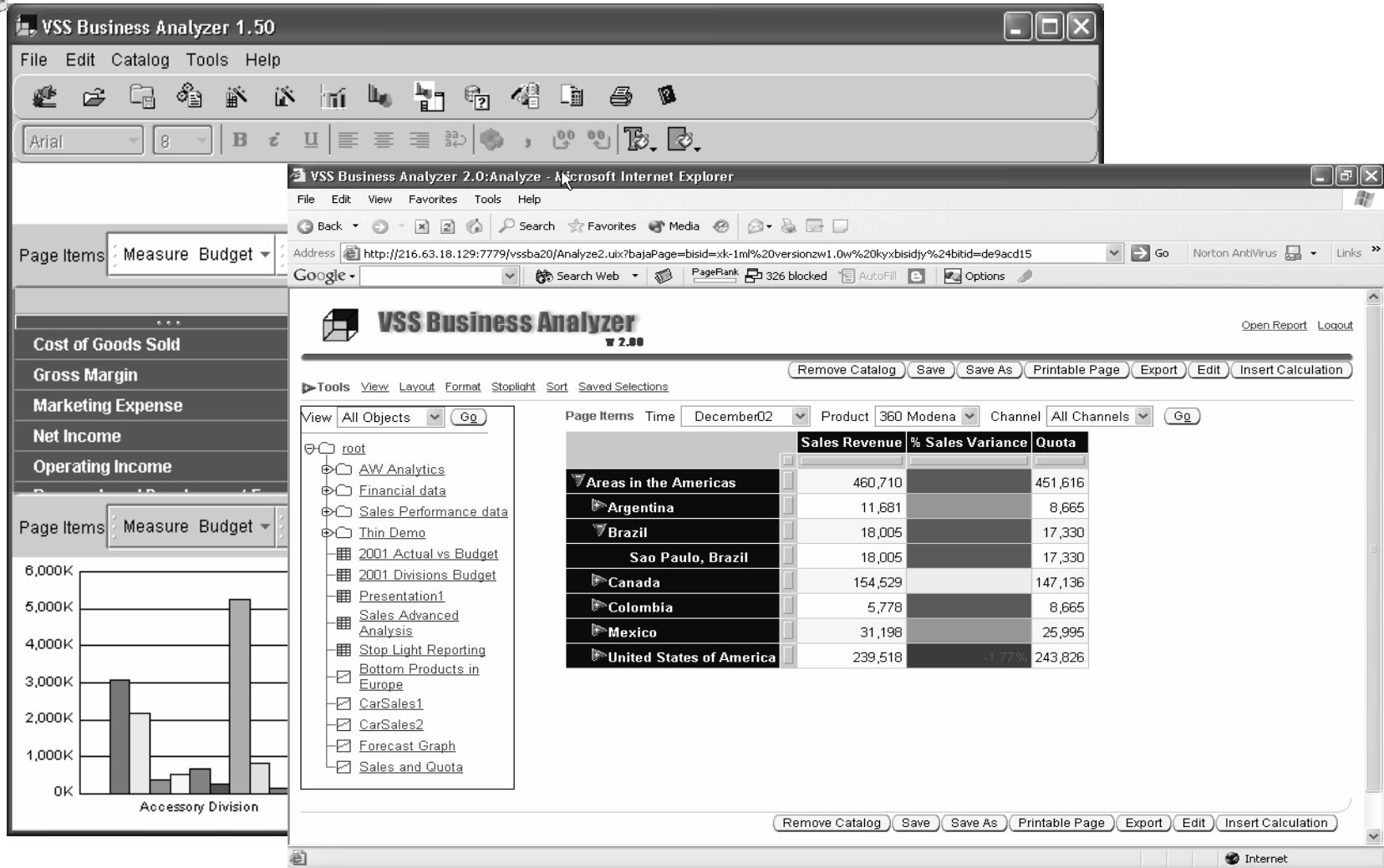
# Custom BI Application



# BI Beans Applications



Thick  
Client

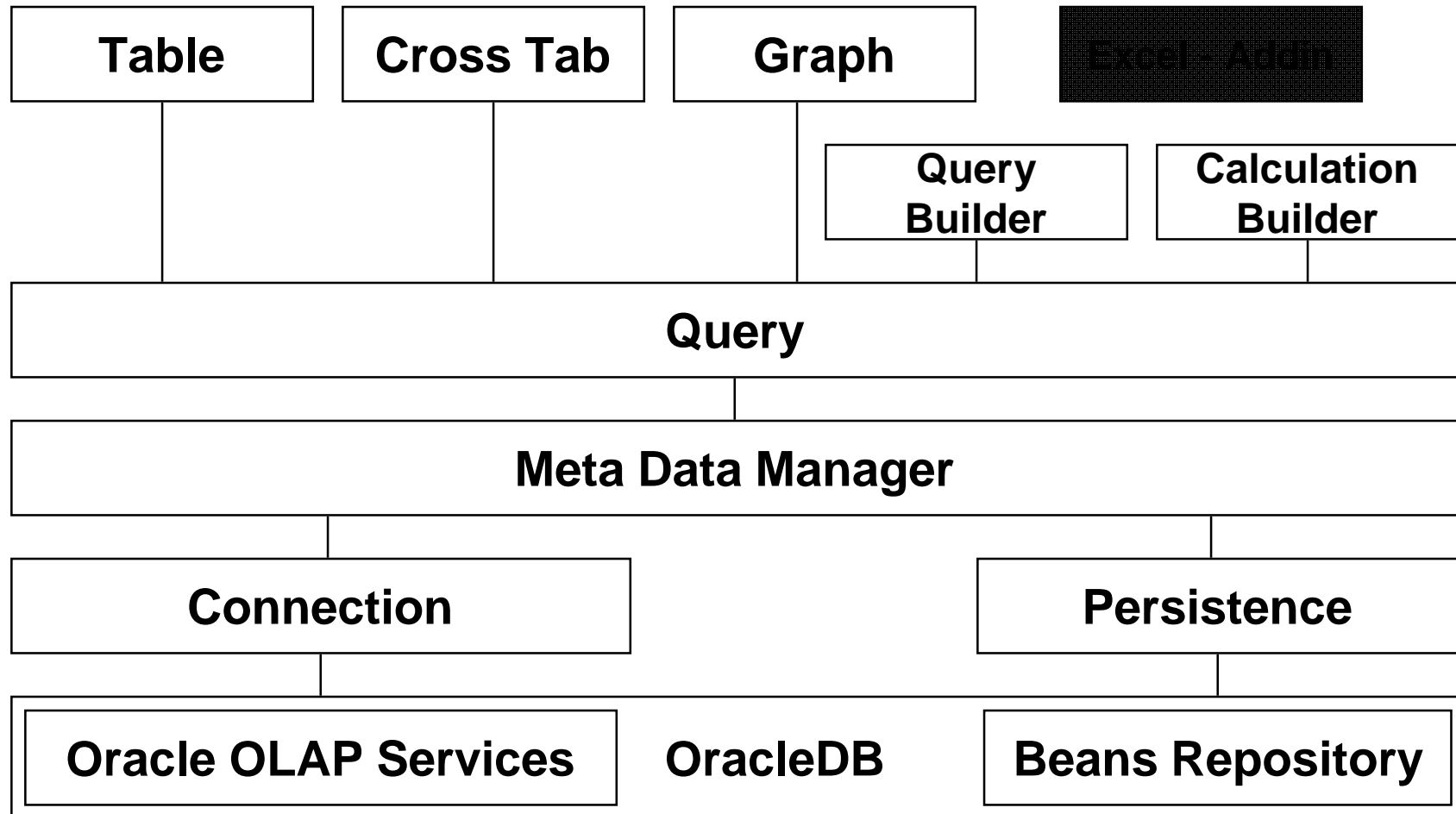


Thin Client

Copyright © 2005, Vlamis Software Solutions, Inc.



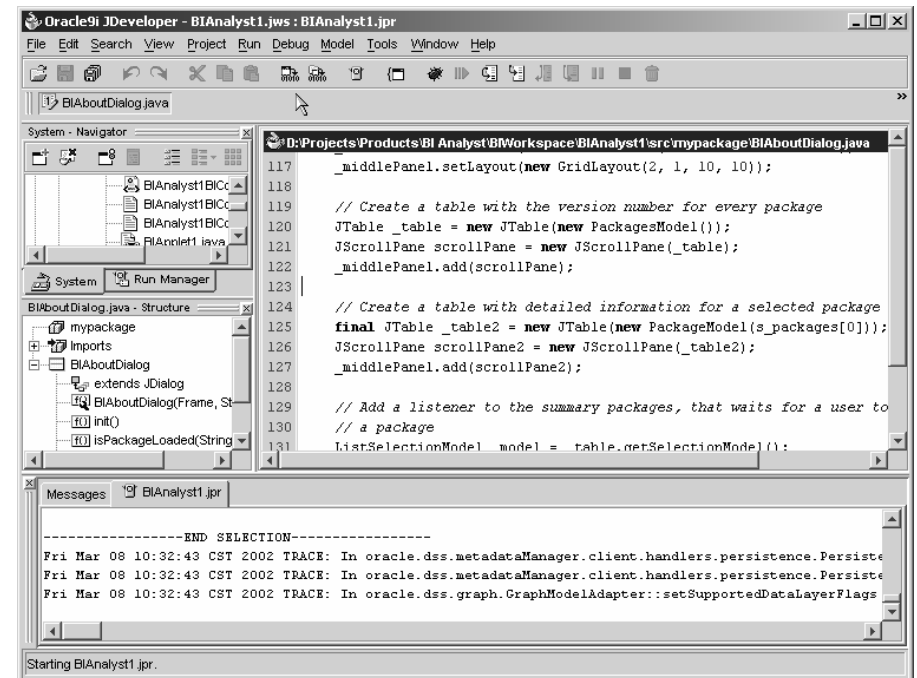
# Business Intelligence Beans





# JDeveloper Integration

- Single Development tool for Relational and OLAP dev
- Design-time integration objectives
  - ☐ Use JDeveloper concepts; extend when necessary
  - ☐ Live data access
  - ☐ Run application objects
  - ☐ Extensive use of Wizards to support rapid development
  - ☐ Use BI Beans runtime repository to enable multiple deployment options



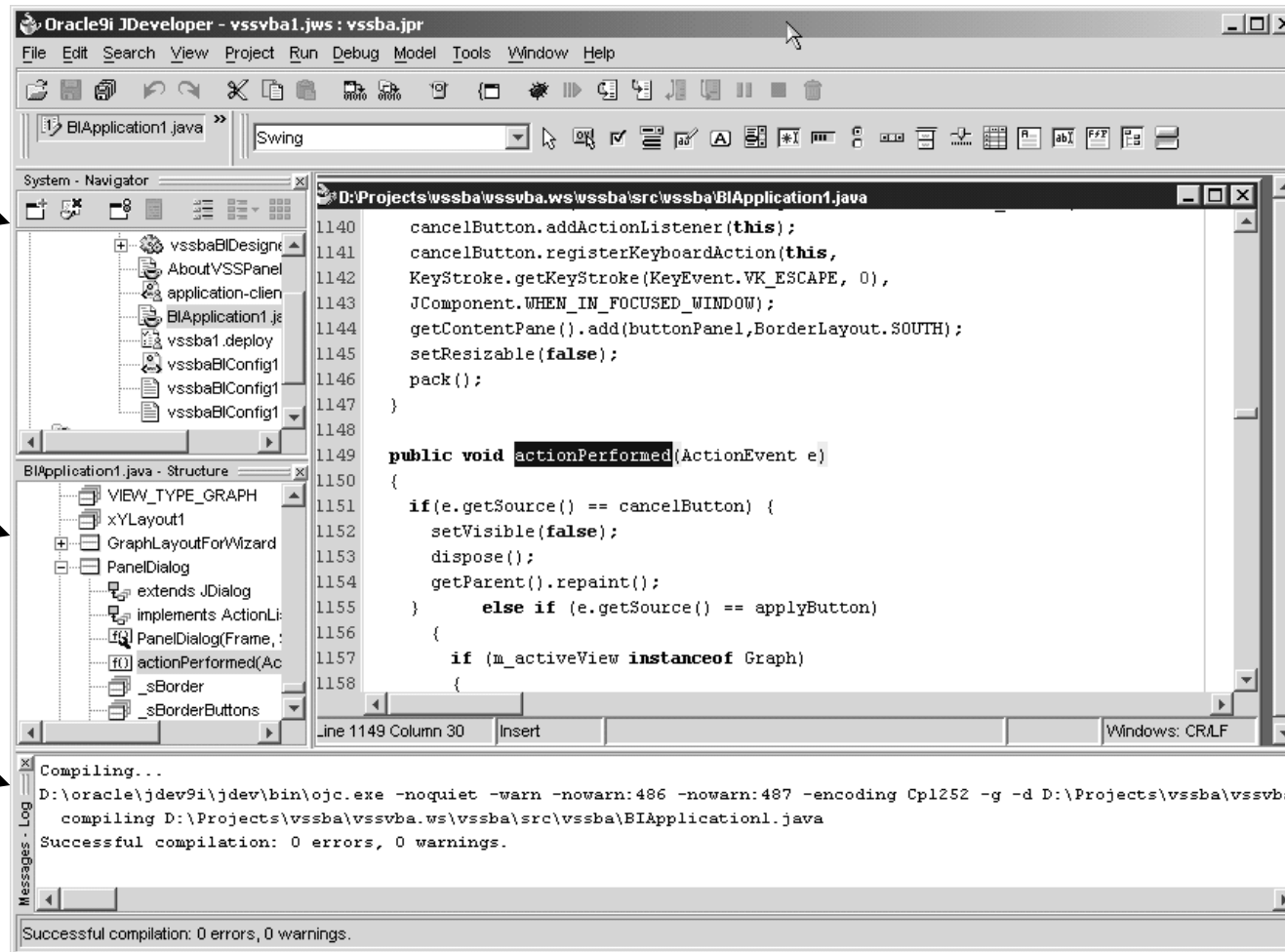


# JDeveloper Environment

**System  
Navigator**

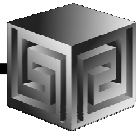
**Structure  
Window**

**Log  
Window**

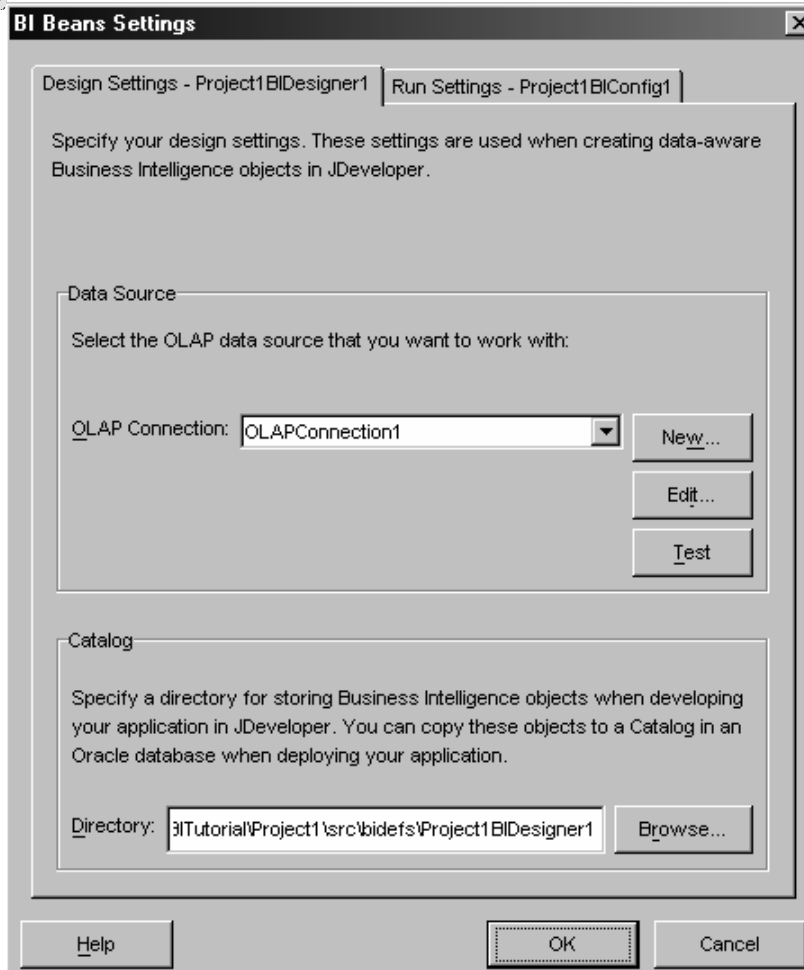


**Component  
Toolbar**

**Code  
Window**



# BI Beans Designer Settings



- **Container for Business Intelligence Objects**
- **References information needed to connect:**
  - ☐ **to Oracle OLAP**
  - ☐ **and the BI Beans Catalog.**
- **Design Settings - Lets you view and edit settings in your BI Designer object**
- **Run Settings - Lets you view and edit settings in your BI Configuration file**



# Connection Wizard

**Walks you through  
creating an Catalog  
Connection**

- **Define Connection Name and Type**
- **Login and Password**

OLAP Connection Wizard - Step 1 of 4: Type

Type Authentication Connection OLAP Server Instance

Each connection is identified by a name. It must be a valid java identifier and unique.

Connection Name:  
OLAPConnection1

Connection Type:  
Oracle (JDBC)

Help

OLAP Connection Wizard - Step 2 of 4: Authentication

Type Authentication Connection OLAP Server Instance

A username and password is usually used to authenticate your connection. Enter your username and password below if one is required. If you would like your password to be deployed with the connections.xml file with your projects, select Deploy Password.

Username:  
BIBDEMO

Password:  
\*\*\*\*\*

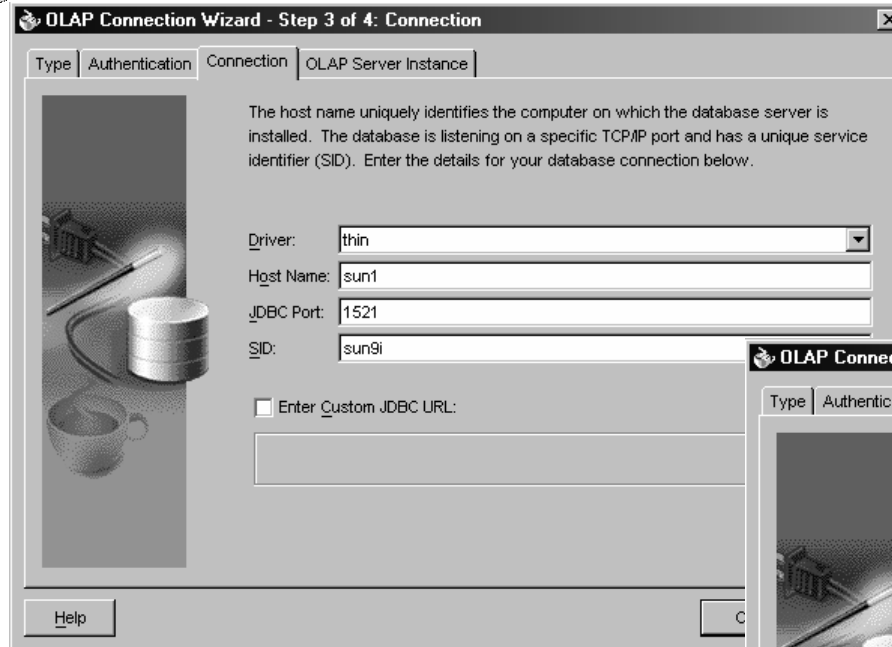
Role:

☐ Deploy Password

Help OK Cancel



# Connection Wizard



OLAP Connection Wizard - Step 3 of 4: Connection

Type | Authentication | Connection | OLAP Server Instance

The host name uniquely identifies the computer on which the database server is installed. The database is listening on a specific TCP/IP port and has a unique service identifier (SID). Enter the details for your database connection below.

Driver: thin

Host Name: sun1

JDBC Port: 1521

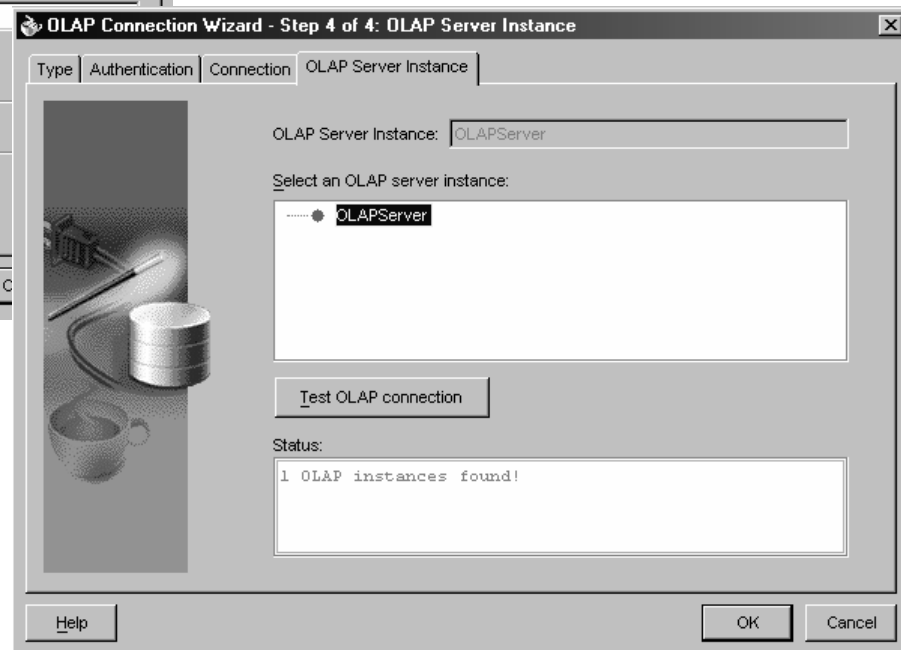
SID: sun9i

☐ Enter Custom JDBC URL:

Help

- Specify data source.

- Select and Test OLAP Connection



OLAP Connection Wizard - Step 4 of 4: OLAP Server Instance

Type | Authentication | Connection | OLAP Server Instance

OLAP Server Instance: OLAPServer

Select an OLAP server instance:

• OLAPServer

Test OLAP connection

Status:

1 OLAP instances found!

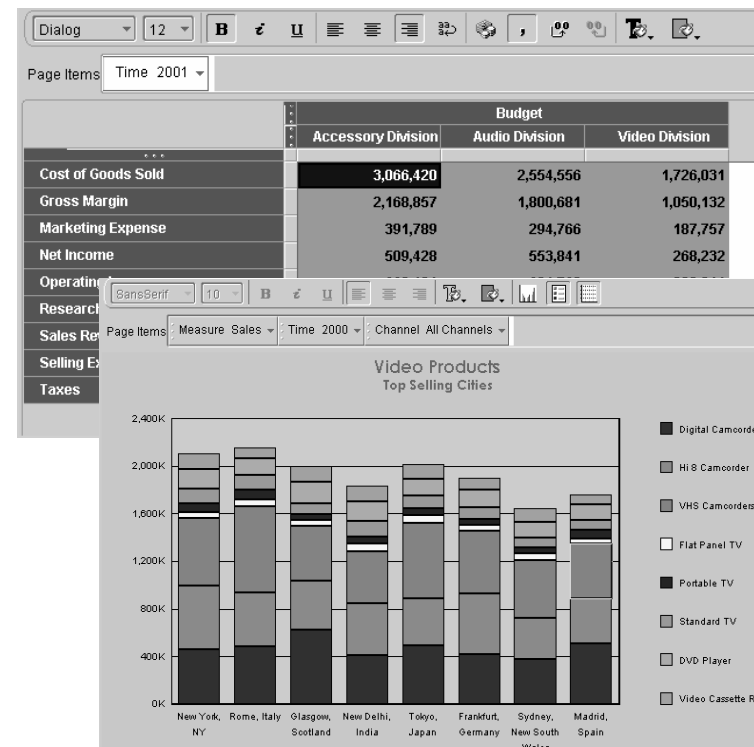
Help OK Cancel





# Presentation Beans

- Provides common user interface across Oracle BI products
- Translate UI gestures into OLAP events
- Graph
  - ☐ Over 50 graph types
  - ☐ Can modify appearance
- Crosstab/Table
  - ☐ Cell level formatting
- View toolbar enables simple access to formatting capabilities
- Customers: Discoverer, Reports, Portal, CRM, Enterprise Planning and Budgeting, Balanced Scorecard
- ...





# **Business Intelligence Wizards**

---

- **Specialized Wizards Built into JDeveloper**
  - ☐ **Connection Wizard**
  - ☐ **Calculation Wizard**
  - ☐ **Query Wizard**
  - ☐ **Presentation Wizard**
  - ☐ **Java Client Application Wizard**
  - ☐ **Servlet (JSP) Application Wizard**



# JDeveloper BI Wizards

**BI Java Application Wizard - Step 3 of 3: Menu and Toolbar**

Do you want to include a Menu in your application frame?

☒ Yes

Select the top level menu items that you want:

☒ File

☒ Tools

☐ Help

Do you want to include a Toolbar in your application?

☒ Yes

**BI Java Application Wizard - Summary**

You have completed the BI Java Application Wizard.

You have selected the following options for your BI Java Application.

- BI Java Application
  - File
    - ./D:/Projects/vssba/vssvba.ws/vssba/src/vssba/BIApplication2.java
  - BI Designer
    - vssbaBIDesigner1
  - Display Presentation
    - No
  - Include Menu
    - File Menu
    - Tools Menu
  - Include Toolbar
    - Yes

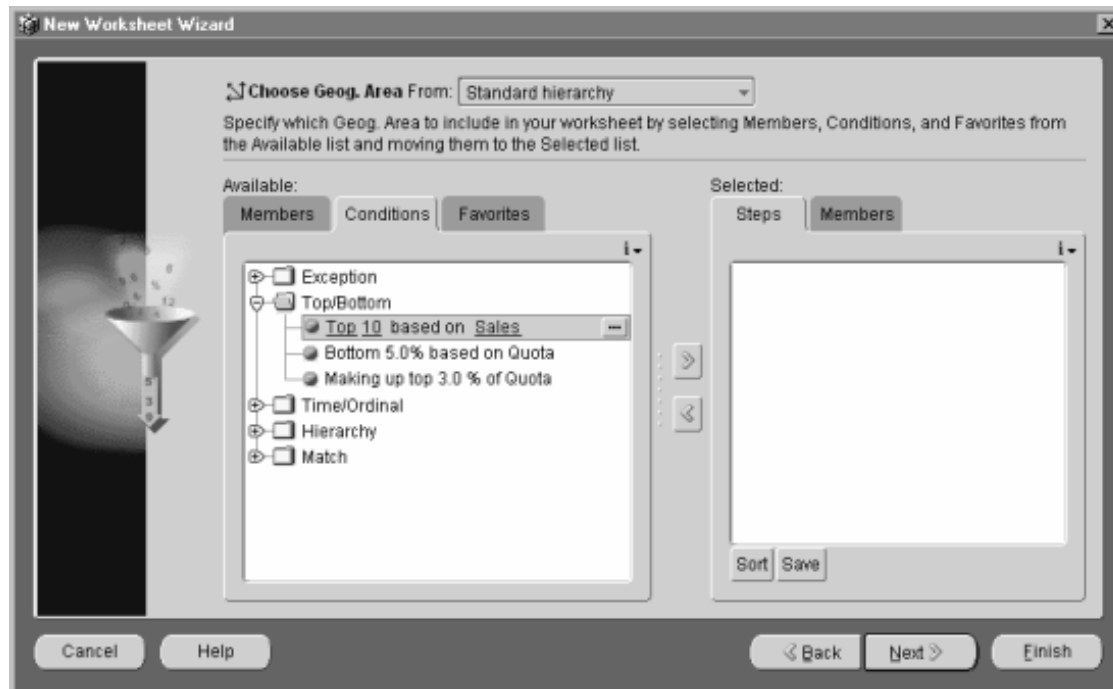
Choose Finish to generate the BI Java Application.

**Background Window: D:\Projects\vssba\vssvba.ws\vssba\src\bidefs\vssbaBIDesigner1\Presentation1**

	First Quarter			Second Quarter
	January	February	March	
Product	5,000	5,400	5,800	7,200
Direct	500	540	580	1,711



# Query Builder



- “Brains” behind the presentation beans
  - ☐ Data provider
  - ☐ Data navigation
  - ☐ Data selection
- QueryBuilder customizer
  - ☐ Enables end user to specify advanced queries using business terms - not SQL
  - ☐ Save favorite selections


# Customizer




**Crosstab Customizer - Step 1 of 3: Options**

Options | Titles | Format | Style

Select options for your crosstab.

☒ Show horizontal grid lines: 

☒ Show vertical grid lines: 

☐ 3D gridlines

☒ Show column headers

☒ Show row headers

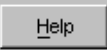

Row header style:

☒ Inline

☐ Outline

Sample:

	Quarter 1	Quarter 2	Quarter 3	Quarter 4
Product A				
Product B				
Product C				
Product D				
Product E				



 

- Alter the look of your presentation.
- Add titles and footnotes.



**Crosstab Customizer - Step 2 of 3: Titles**

Options | Titles | Format | Style


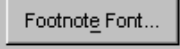
Enter text for your crosstab titles.

☒ Show Title  

Asian Sales Summary

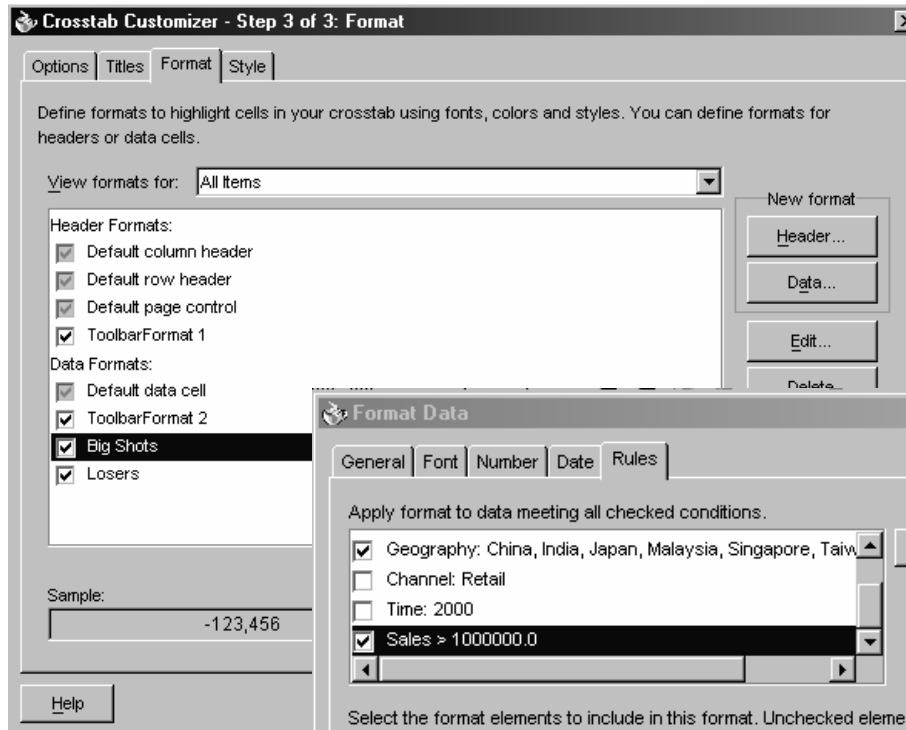
☒ Show Subtitle  

Stoplight Report

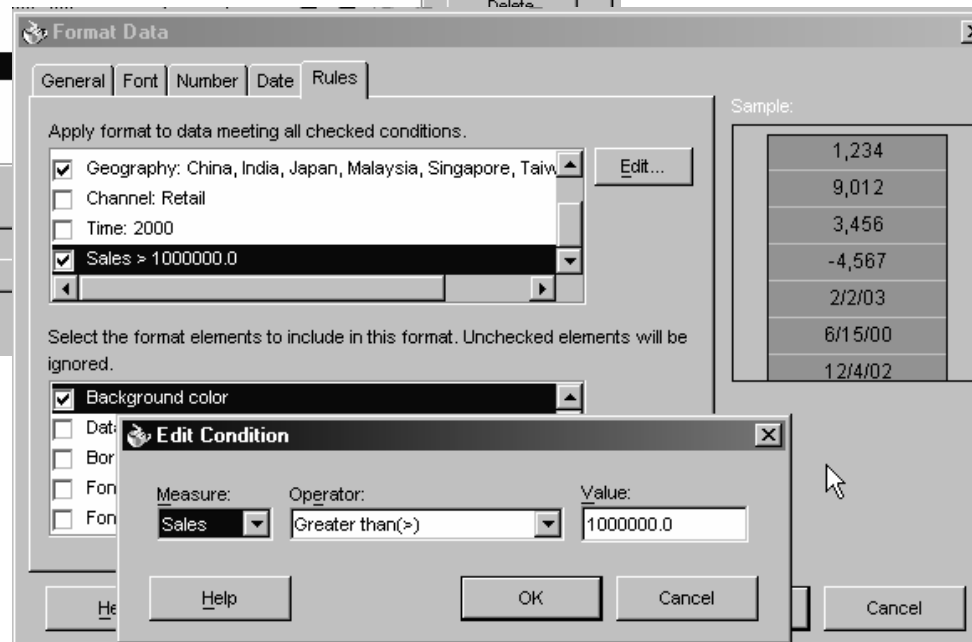
☐ Show Footnote  



# Customizer



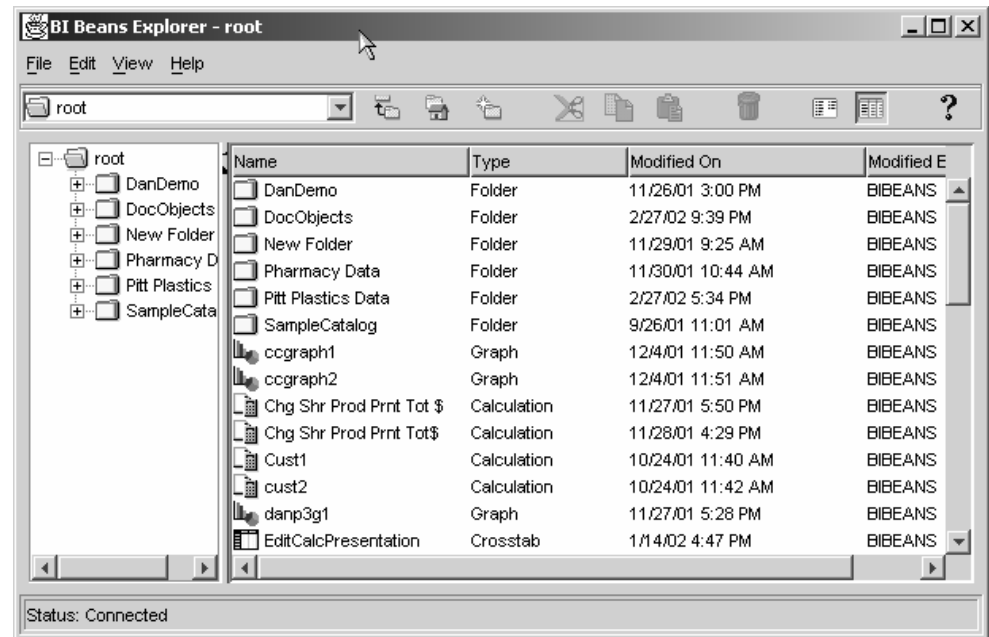
- Add data-driven formatting.





# Persistence Services – BI Catalog

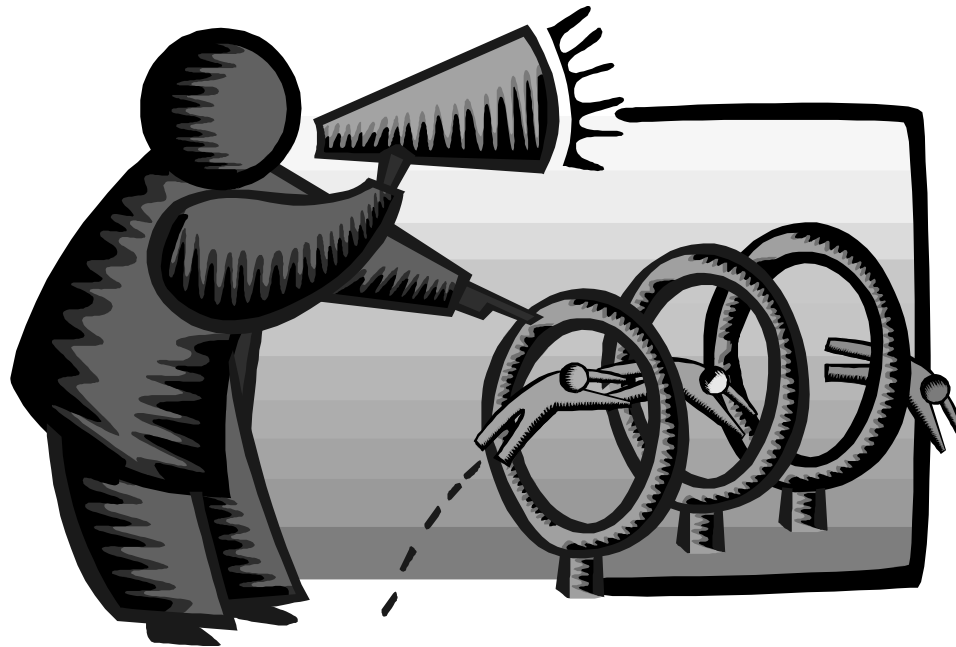
- Enables end users to save personal analyses or share analyses with other users.
- Organizes information in folders
- Persisted objects include:
  - ☐ Crosstab, table and graph formatting
  - ☐ Entire queries or individual selections
  - ☐ Calculations
- Objects persisted in XML format
- Searchable





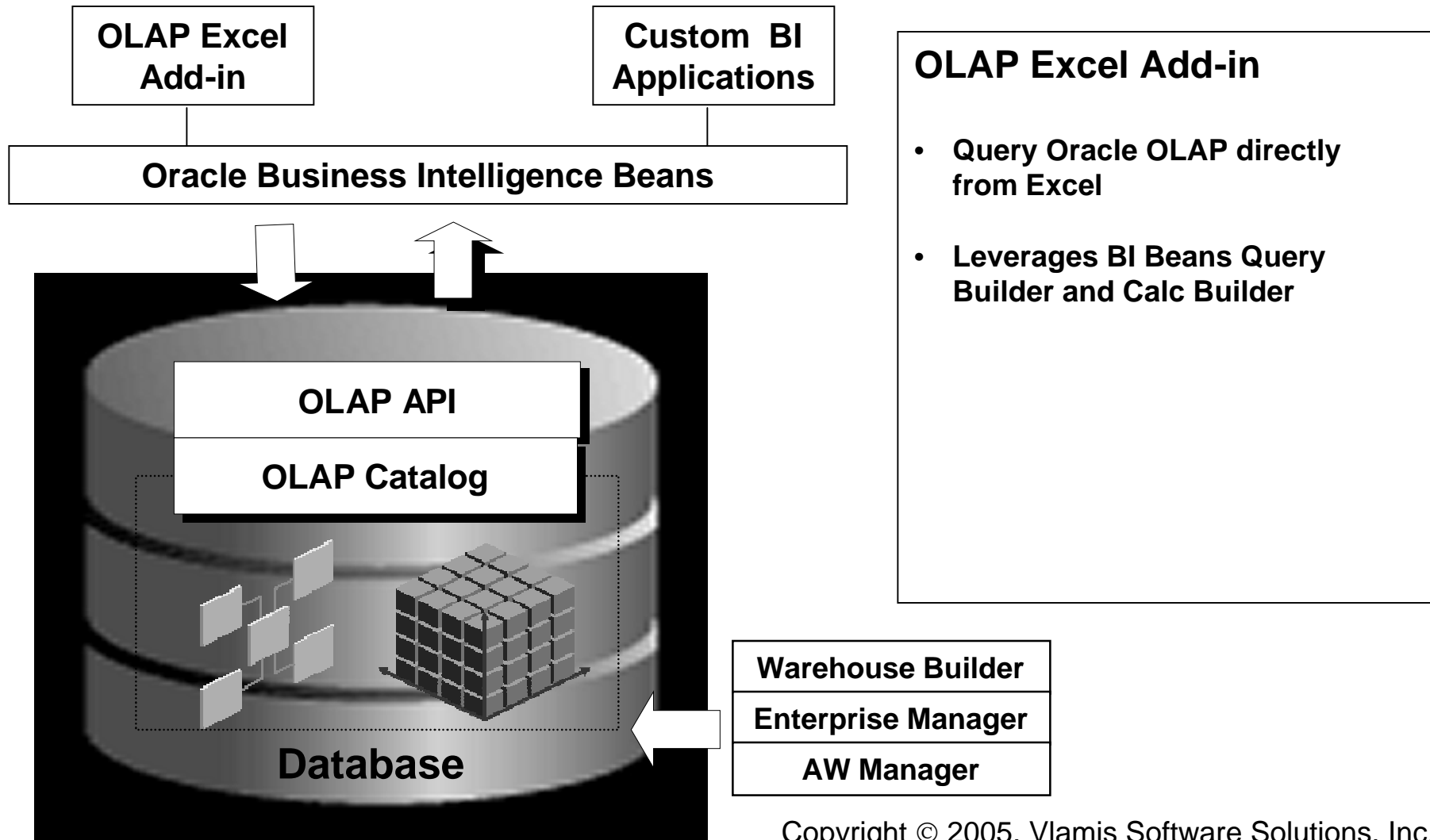
# Demonstration of BI Beans Application

---





# Access to All OLAP Data from Excel





# Spreadsheet Add-In

Microsoft Excel - Book1

File Edit View Insert Format Tools Data Window OracleOLAP Help

Worldwide All Channels

	Sales	Quota	Quota Var %
2000		2000	2000
CD Player	16 558 146	16 154 468	2 50%
Amplifier			
VHS Camcorders			
Receiver			
Digital Camcorders			

18,000,000  
16,000,000  
14,000,000  
12,000,000  
10,000,000  
8,000,000  
6,000,000  
4,000,000  
2,000,000

CD Player Amplifier VHS

Oracle OLAP Query Wizard

Items Layout Dimensions

Choose Product From: Standard hierarchy

Available: Members Conditions Favorites

- Exception
- Top/Bottom
  - Top 10 based on Sales
  - Bottom 5.0% based on Quota
  - Making up top 3.0 % of Quota
- Hierarchy
- Time/Ordinal
- Match

Selected: Steps Members

1. Start with Equipment/Parts: Top 5 based on Sales

Sort Save

Help OK Cancel

Sheet1 Sheet2 Sheet3

Ready



# **Spreadsheet Add-in Specifics**

---

- **Use instead of Discoverer as ETL OLAP Tool**
- **Allows access directly from Excel to entire OLAP cube**
- **Allows access to Query Editor**
- **Allows access to Calc Builder**
- **Presents data in familiar Excel interface**
- **Breaks down perception OLAP data "closed"**
- **Users love access from Excel!**



# **What Does Spreadsheet Add-in Do?**

---

- **Adds OracleOLAP menu to Excel menu**
- **New Query gets data into Excel**
- **Edit Query changes selection in Excel**
- **Add New Calculation calls Calculation Wizard**
- **Allows for drilling and paging on OLAP data**
- **Saves queries between sessions**
- **Refresh Query refreshes queries from server**
- **Several options to modify behavior**



# Spreadsheet Add-In

Microsoft Excel - Book1

File Edit View Insert Format Tools Data Window OracleOLAP Help

Worldwide All Channels

	Sales	Quota	Quota Var %
2000	2000	2000	2000
CD Player	16 558 146	16 154 468	2 50%
Amplifier	14		
VHS Camcorders	13		
Receiver	13		
Digital Camcorders	12		
	70		

CD Player Amplifier VHS

Oracle OLAP Query Wizard

Items Layout Dimensions

Choose Product From: Standard hierarchy

Available:

- Exception
- Top/Bottom
  - Top 10 based on Sales
  - Bottom 5.0% based on Quota
  - Making up top 3.0 % of Quota
- Hierarchy
- Time/Ordinal
- Match

Selected:

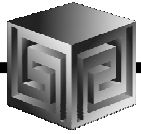
1. Start with Equipment/Parts: Top 5 based on Sales

Sort Save

Help OK Cancel

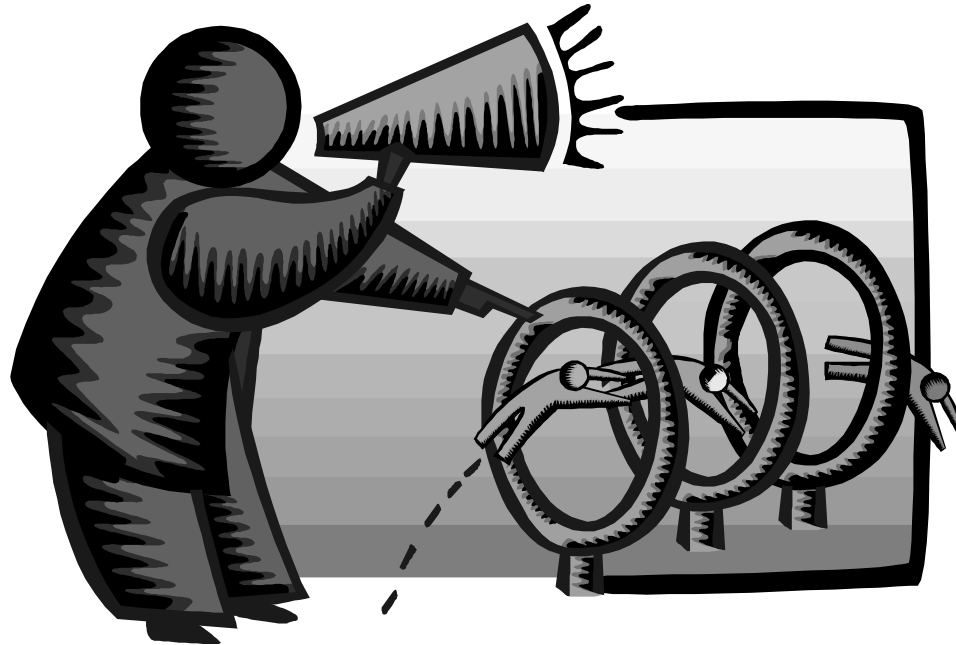
Sheet1 Sheet2 Sheet3

Ready



# Demonstration of Spreadsheet Add-in

---





# Which Is Right For You?

---

## **BI Beans**

- Need customizations
- Integrate with other non-Oracle Applications
- Need to extend in future
- Have Java programmers
- No problem with:
  - ☐ Documentation
  - ☐ Installation
  - ☐ Support
  - ☐ Training

## **Discoverer**

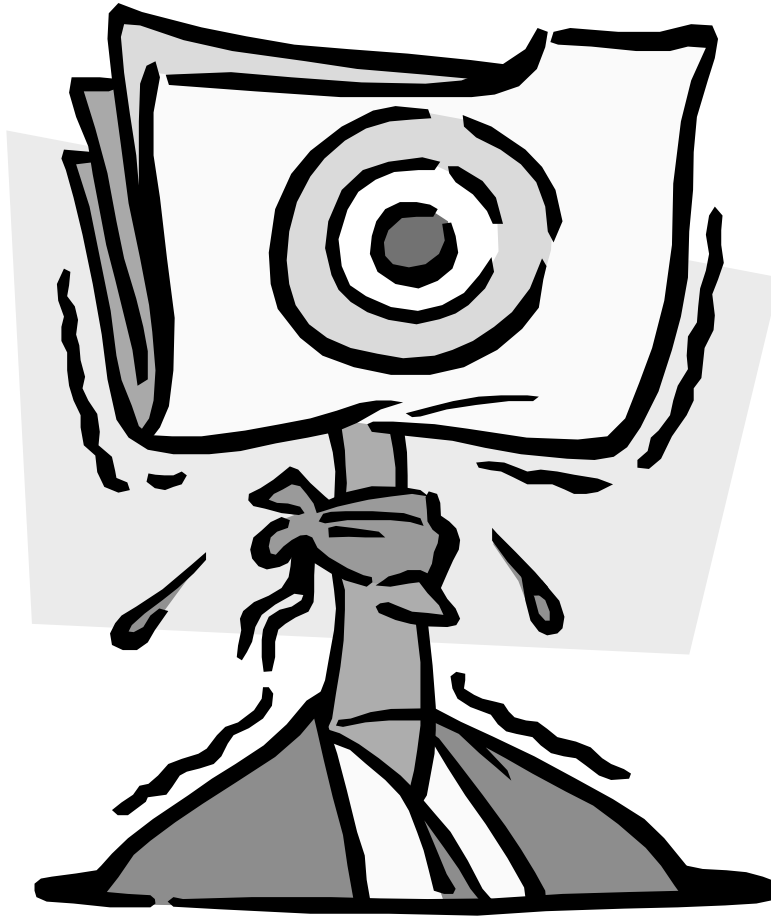
- Want out-of-the-box setup
- Already have Discoverer
- Want Portal integration
- Like Discoverer functionality

## **Excel Add-in**

- Want to drive from Excel
- Free (with Oracle OLAP)
- Users OK with creating own

# QUESTIONS?

---







# Oracle OLAP Case 1

---

- **Manufacturing company needs to reduce inventory levels**
- **Uses OLAP DML Forecast command based on orders**
- **Users can override forecasts and add their own promotional campaigns**
- **Computes more accurate forecasts of production needs, reducing inventory levels**
- **Can compare accuracy of monthly forecasts by comparing various “scenarios” each month with actual shipments**
- **Application presented as JSP for business forecasters / managers**



## **Oracle OLAP Case 2**

---

- **Service organization with call center wants to minimize hold time but not increase headcount**
- **Solution is to analyze hold time and customer resolution time for each support analyst**
- **Can rank support engineers / departments by customer satisfaction / resolution / callback rates**
- **Can pay bonus based on quantifiable results**



## **Oracle OLAP Case 3**

---

- **Oil company has complex GL and existing Express-based “business rules engine” for allocating costs and income**
- **Uses Oracle OLAP engine to develop models to allocate data based on rules analysts develop**
- **Users can develop their own way of analyzing the data rather than relying on IT**
- **IT sets up infrastructure, users develop actual analyses**



## **Oracle OLAP Case 3 (continued)**

---

- **Company has existing Express application that meets user needs, but wants to modernize U/I and run with web interface**
- **Export/import existing Express databases to Oracle OLAP AWs**
- **Back-end code works as-is**
- **Front-end code rewritten in Oracle OLAP Web Agent (OLAP DML)**
- **"Application Generator" allows business users to create entirely new applications with their own multi-dimensional objects**



## **Oracle OLAP Case 4**

---

- **Manufacturer wants an ad-hoc analysis and reporting against sales data warehouse**
- **Users need easy-to-use interface and limited custom analysis capabilities**
- **Front-end is BI Beans custom JSP with cross-tabs customized for user needs**
- **"Custom selector" allows users to select data**
- **Highlights importance of "returns"**
- **Daily data allows managers to impact EOM numbers**
- **Company changing business practices now**



# Oracle OLAP Case 5

---

- **CPG company has existing Oracle Sales Analyzer implementation**
- **Company wants to explore using OracleBI to update technology**
- **Created Proof-of-concept dimensional model in less than 40 hours**
- **Demonstrated two techniques:**
  - ☐ **Export out data and import into Oracle OLAP**
  - ☐ **Use AWM to map to star schema data warehouse**
- **Company evaluating Discoverer OLAP**



# Oracle OLAP Case 6

---

- **Shipping company wants to flexibly report data with many custom calculations**
- **Company used to multidimensional tools, but wants solution integrated with Oracle**
- **Many users accustomed to Excel**
- **Company wants training, but ends up needing consulting to get going**
- **Company now creating cubes on their own, using Excel add-in as their front-end of choice**



# Oracle OLAP Case 7

---

- **Financial analysis company wants to analyze stocks against benchmarks using proprietary models**
- **Presentation of data is by various attributes of Equities such as Market Capitalization, Industry, etc.**
- **Users want to drill from groups of stocks to individual equities, changing dimensionality**
- **Custom OLAP DML code transforms data with models when copying from one cube to another**





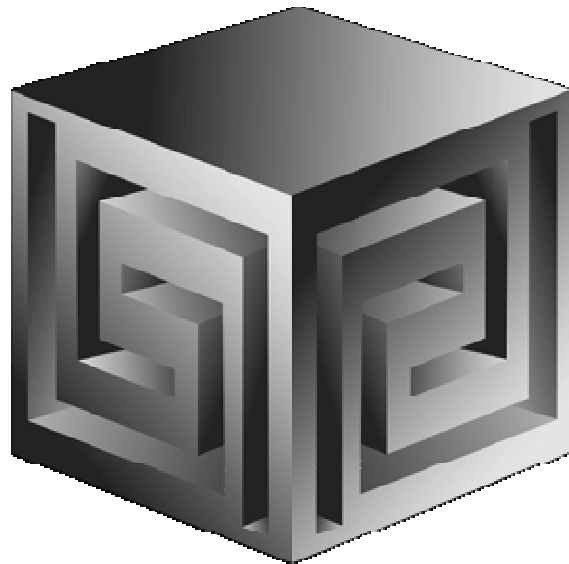
## **Oracle OLAP Case 8**

---

- **ASP Company using Oracle OLAP to deliver analysis of web traffic to clients**
- **Building separate AW for each client**
- **Uses templates to share common "dimensions" across multiple implementations**
- **Each client gets separate AW so each can customize dimensional model to their needs**
- **Building ASP offering around Oracle BI/OLAP**

# Oracle BI and Oracle OLAP— What's All This About?

**October 2005**



**Dan Vlamis**

**dvlamis@vlamis.com**

**Vlamis Software Solutions, Inc.**

**816-781-2880**

**<http://www.vlamis.com>**

**Copyright © 2005, Vlamis Software Solutions, Inc.**