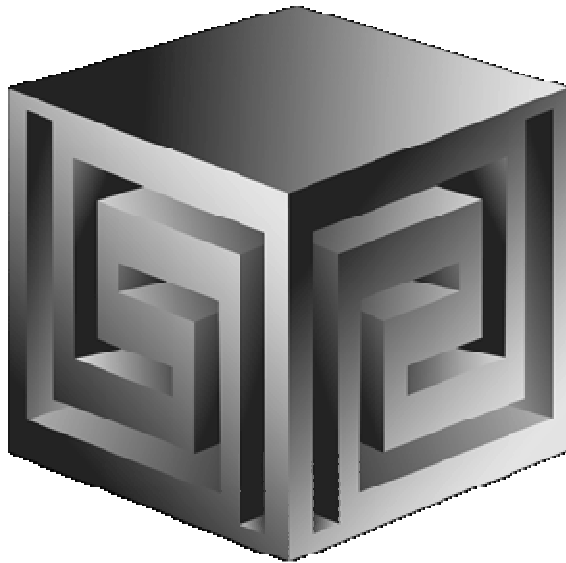


# **Front-End Tools to View OLAP Data**

**ODTUG Now! 2005**



**Dan Vlamis**

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**Vlamis Software Solutions, Inc.**

**816-781-2880**

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

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# **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**



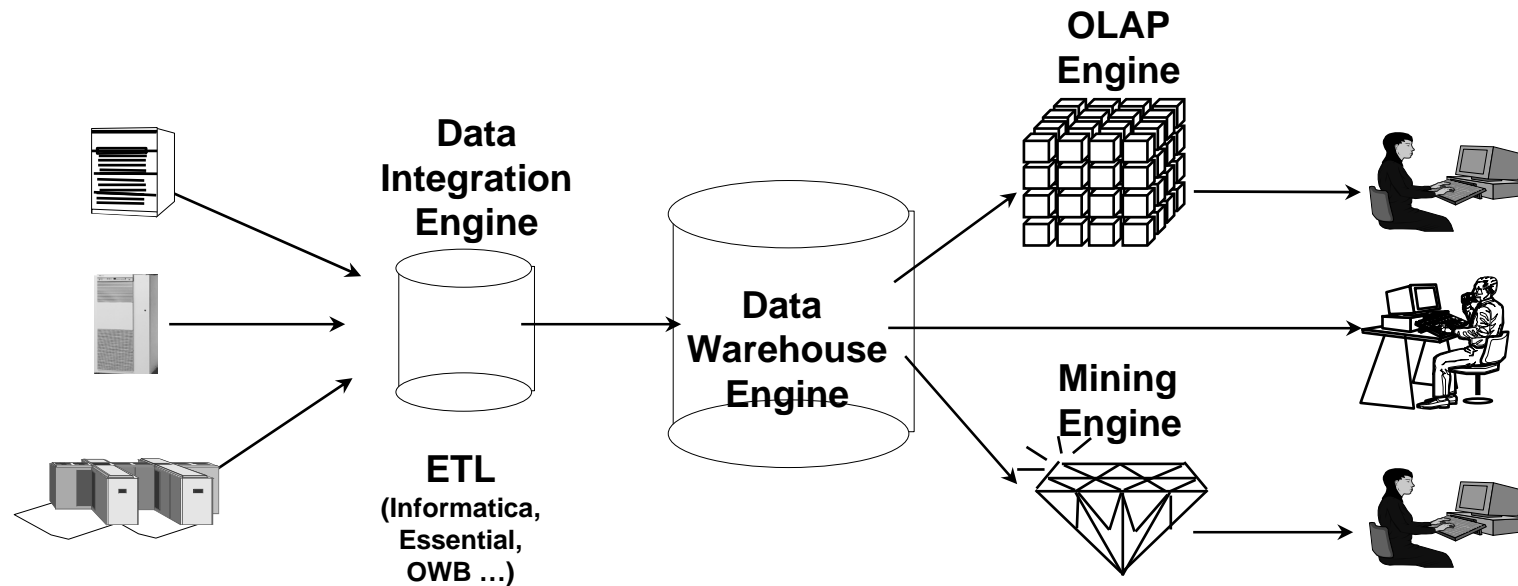
# Outline

---

- **Introduction - History**
- **Overview of OLAP, BI Beans and Discoverer fit together**
- **Discoverer OLAP Specifics**
  - ☐ **General Features of Discoverer OLAP**
  - ☐ **Plus or Viewer**
  - ☐ **Demo**
- **BI Beans Specifics**
  - ☐ **General Features of BI Beans Applications**
  - ☐ **Features Unique to BI Beans**
  - ☐ **Demo**
- **Spreadsheet Add-in Specifics**
  - ☐ **Demo**
- **Which is Right for you?**



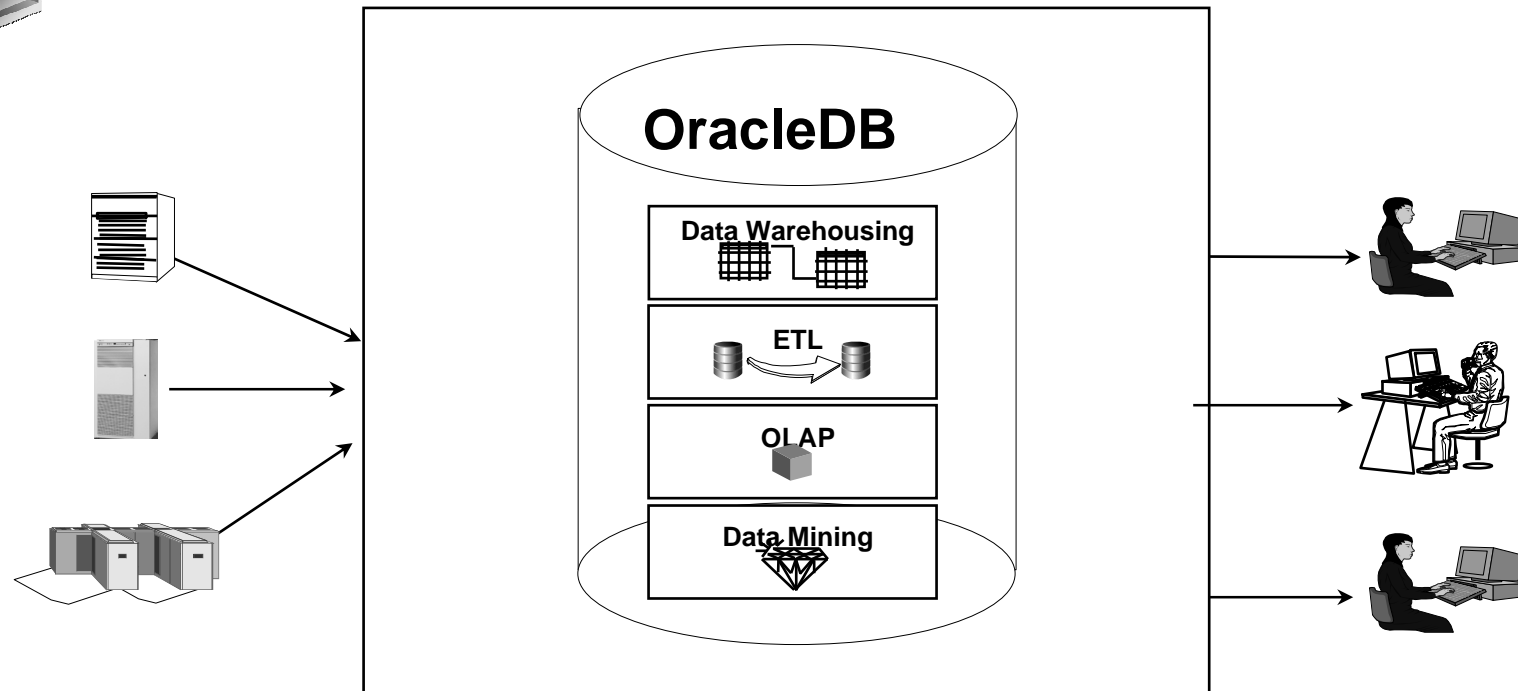
# Business Intelligence the Old Way



- 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



# **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?**

---

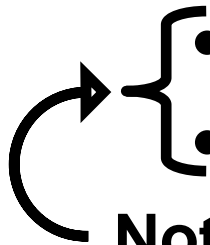
- **Multidimensional user view of data**
- **Users create own reports**
- **Users create own measures**
- **Easy drill-down, rotate**
- **Iterative discovery process (not just reports)**
- **Ad-hoc analysis**
- **Easy selection of data with business terms**

# 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**





# **What Makes a DW OLAP-Ready?**

---

- **Star schema design**
- **Simple dimension tables (level-based)**
- **All tables dimension or fact  
(no "auxiliary tables for dimension tables)**
- **Each child has single parent (no many-to-many)**
- **Total level at top of each dimension**
- **End\_date and Timespan attributes for TIME**
- **Unique descriptions across all levels**
- **Fact tables with additive measures**



# 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

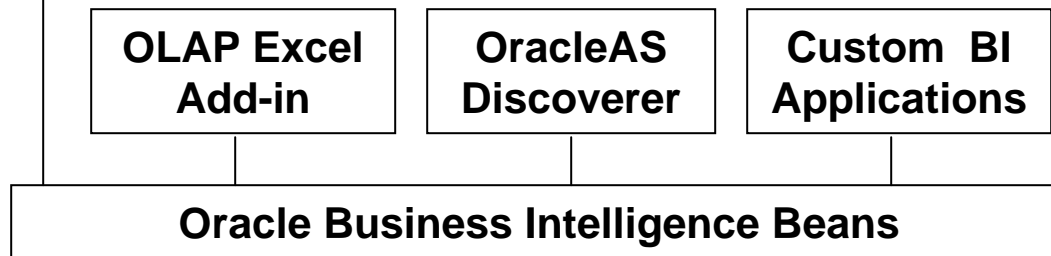


# Getting the Data Out

---

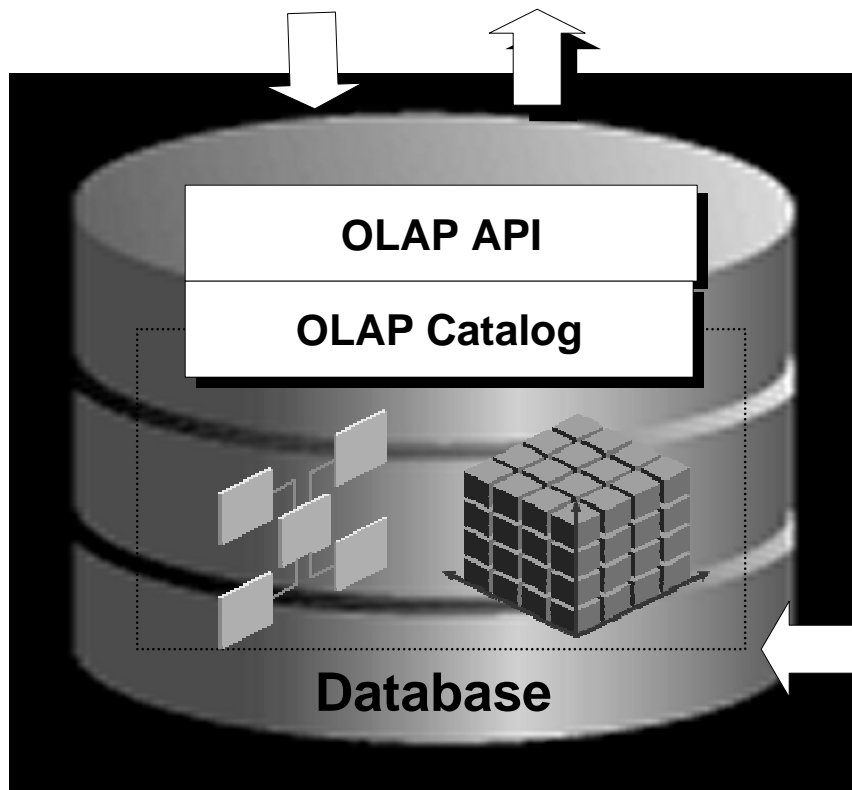
- **Once the Data is in OLAP how do we get the data out?**
- **Alternatives**
  - ☐ **BI Beans applications (Custom or pre-built)**
  - ☐ **Discoverer**
  - ☐ **Oracle Reports**
  - ☐ **SQL Access from any SQL tool**
  - ☐ **Spreadsheet Add-in**
  - ☐ **Any except Spreadsheet add-in can be in a portal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

# 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

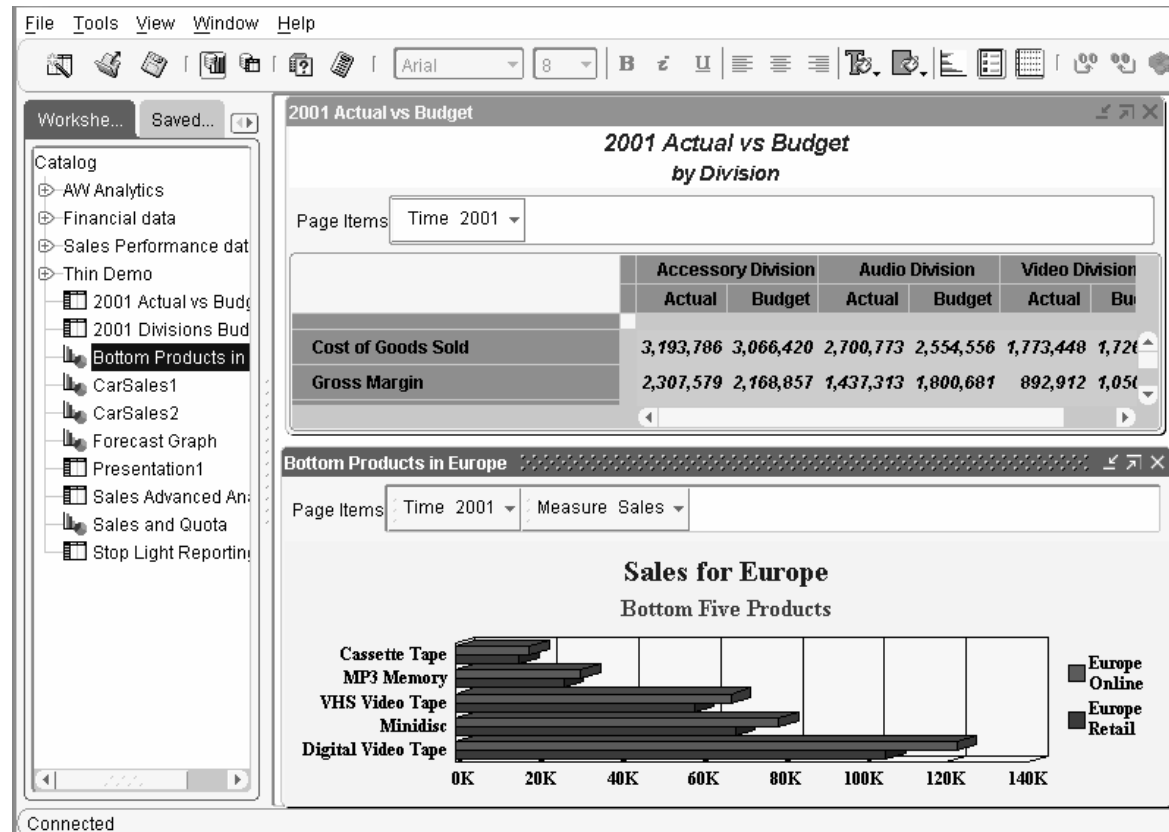
Enterprise Manager

AW Manager



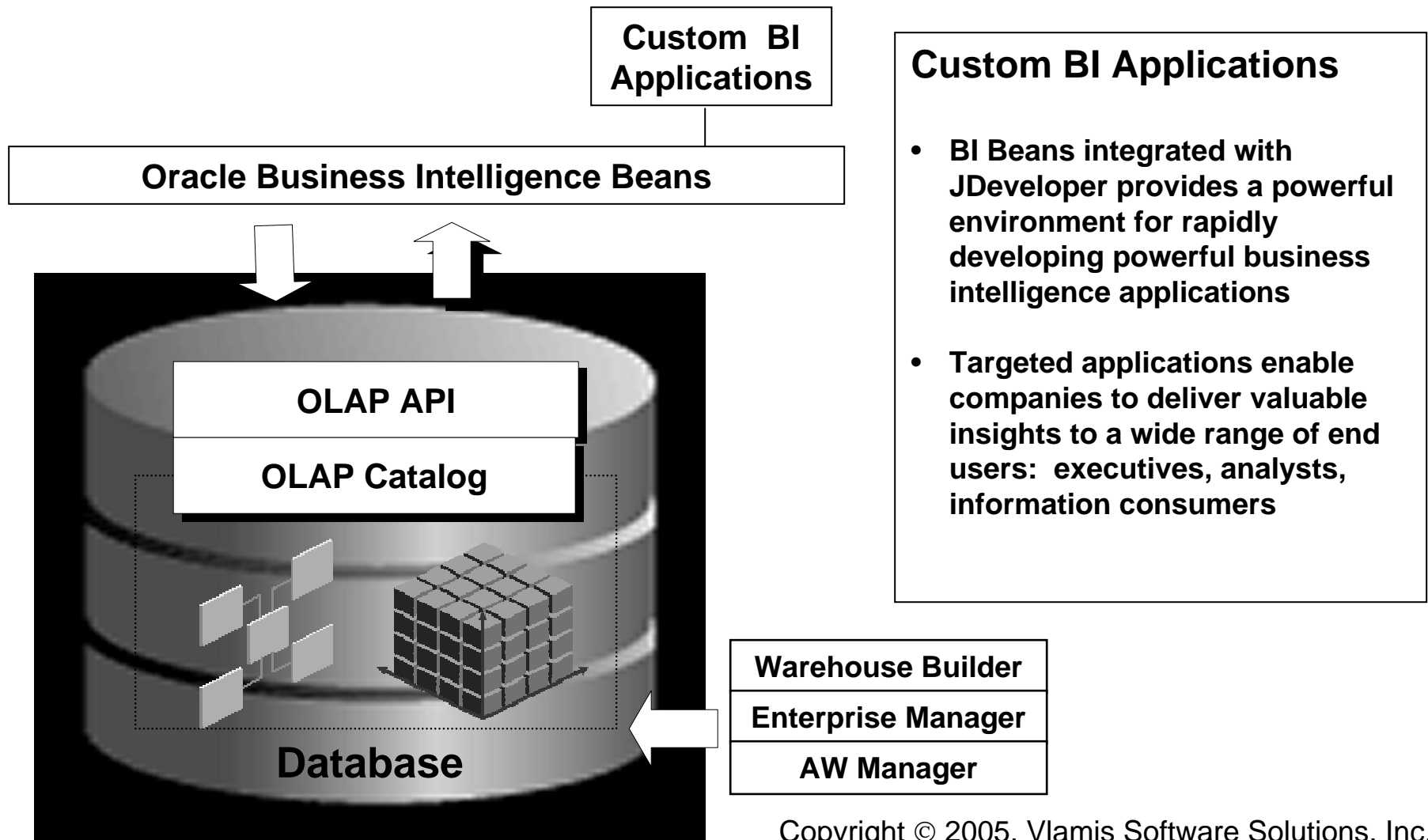
# Discoverer 10g – Discoverer OLAP

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



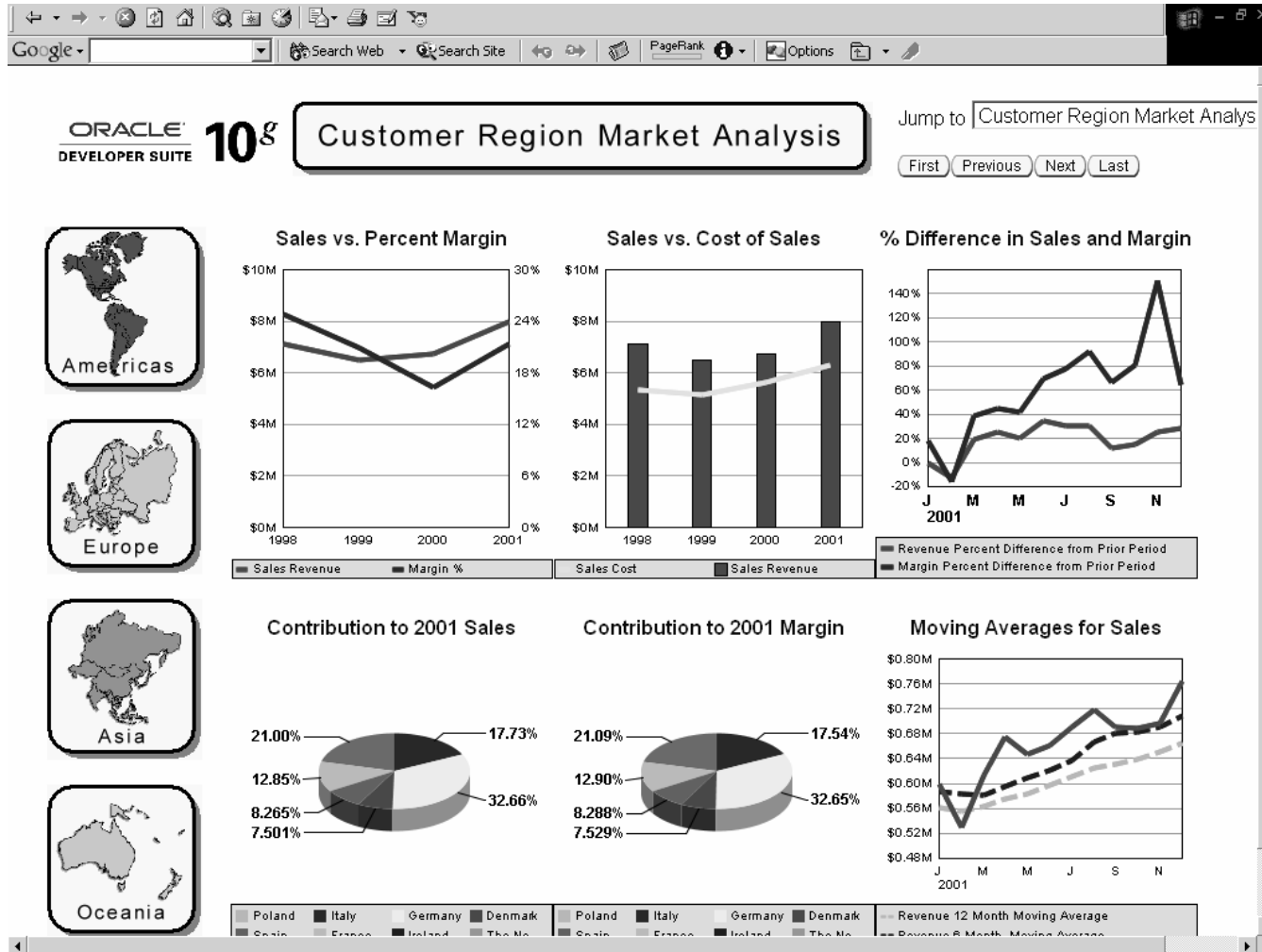


# Custom Development via BI Beans





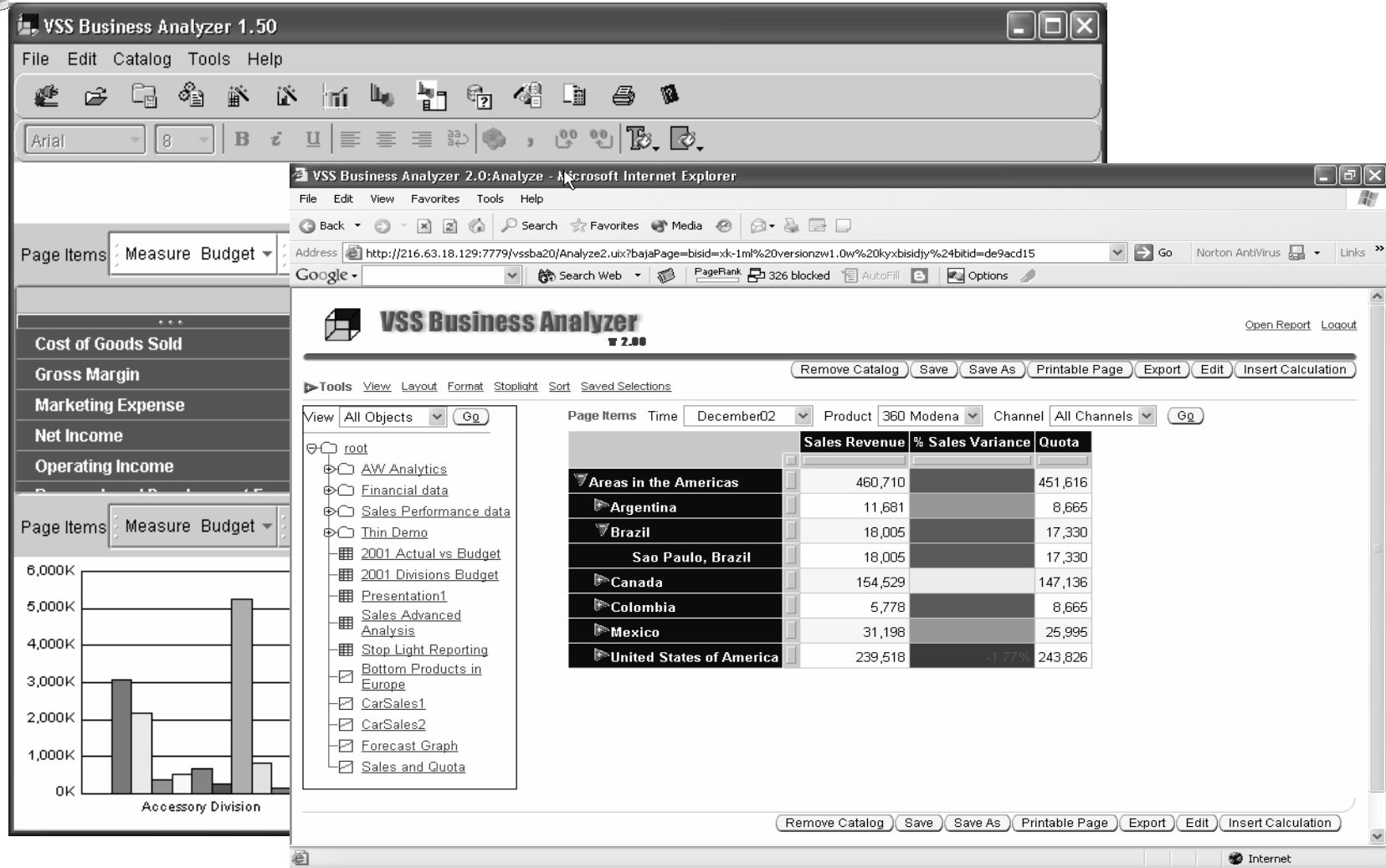
# Custom BI Application



# BI Beans Applications



Thick Client

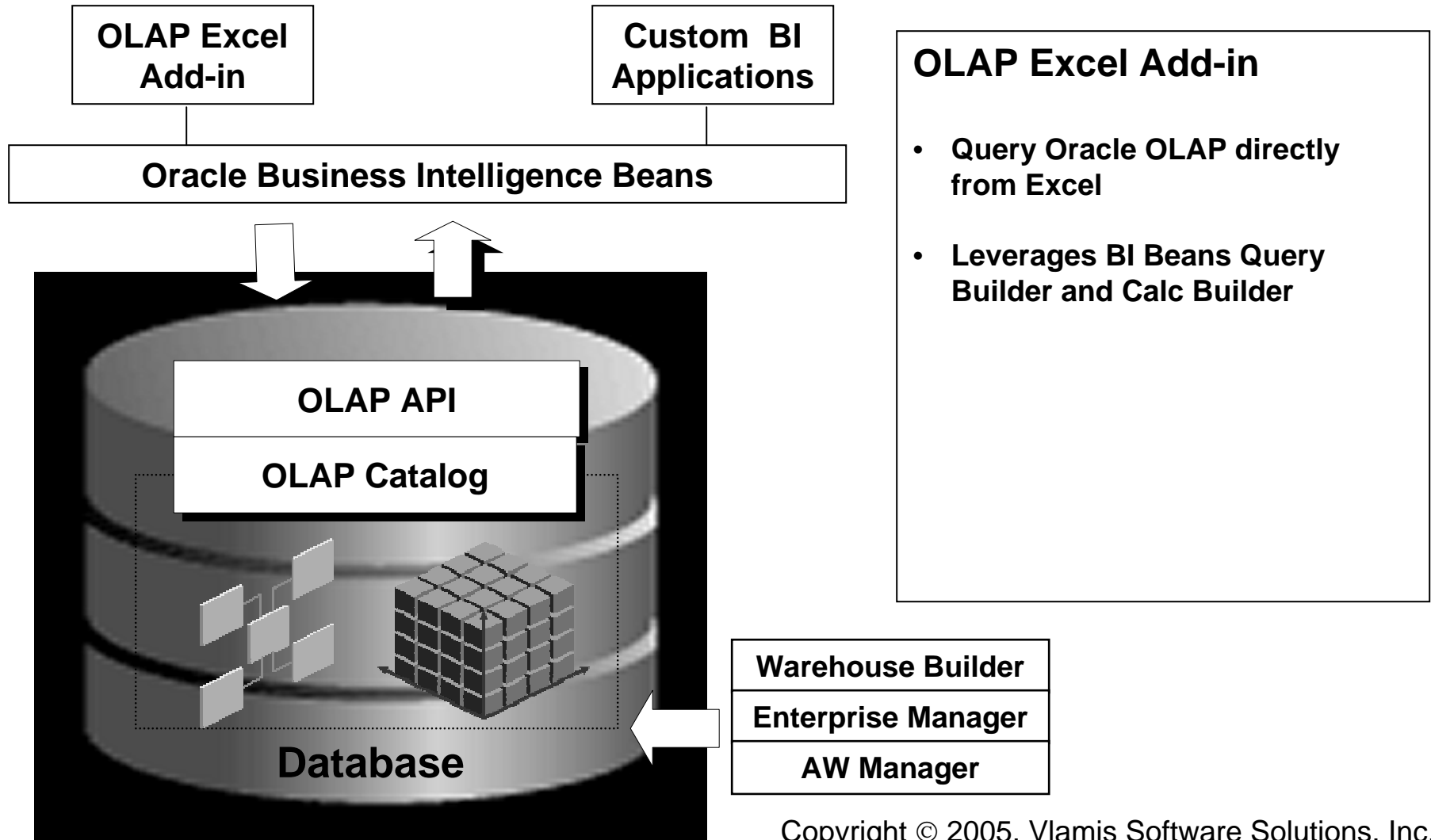


Thin Client

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# 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	> 50%
Amplifier	14		
VHS Camcorders	13		
Receiver	13		
Digital Camcorders	12		
	70		

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:

Steps Members

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

Sort Save

Help OK Cancel

Sheet1 Sheet2 Sheet3

Ready

Product	Sales
CD Player	16,558,146
Amplifier	14,000,000



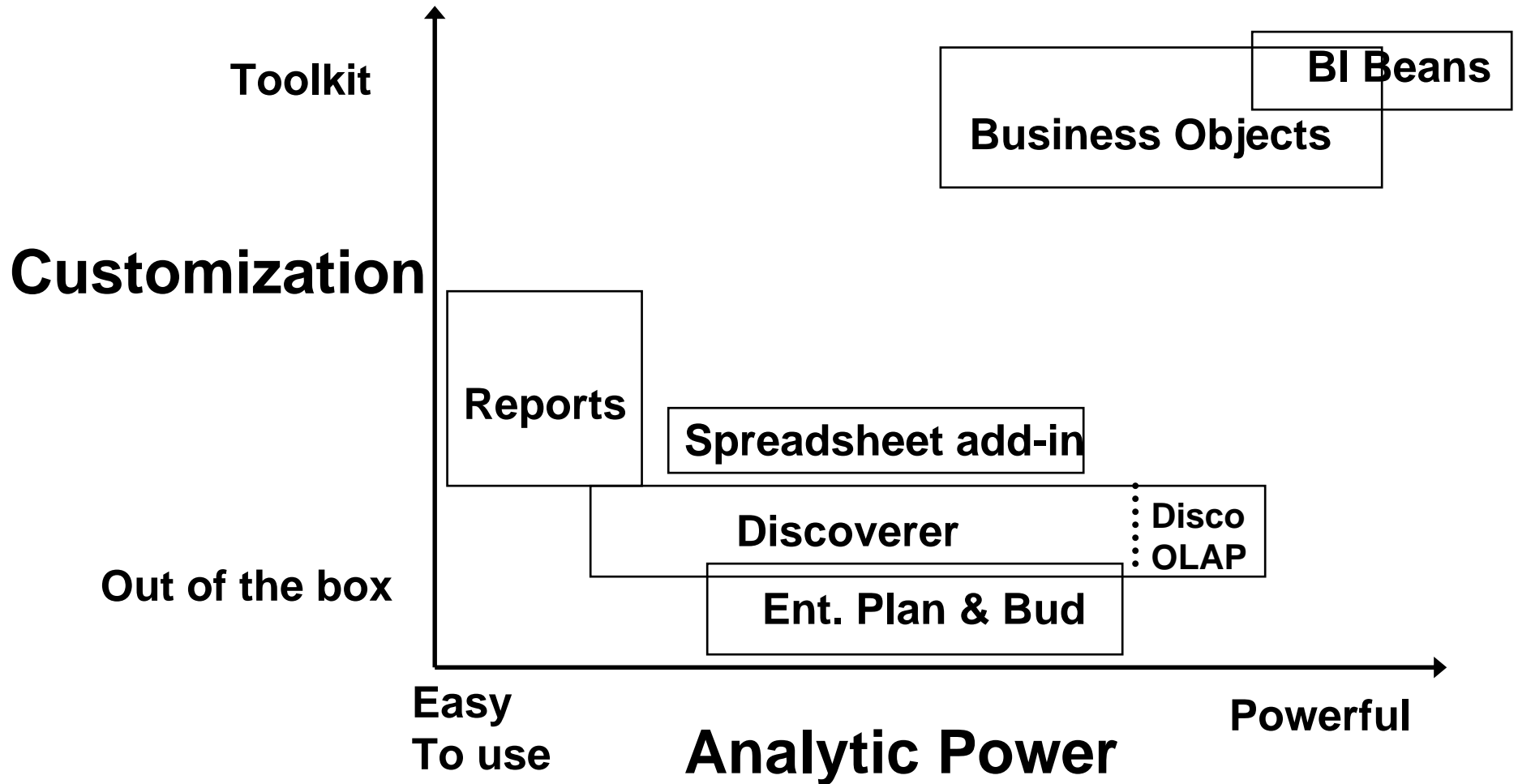
# What Access Tool?

---

- **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





# Discoverer Specifics

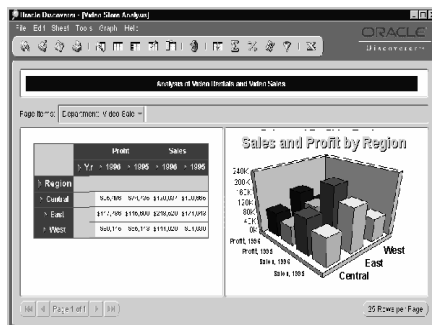
---

- **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

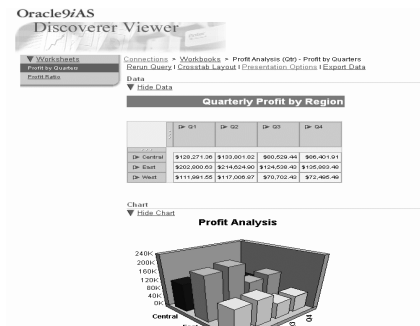


## Discoverer Plus



**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

**Worksheet Wizard**

Items Dimensions Hidden Dimensions

To add items to your query, select them from the Available list and move them to the Selected list.

Available:

- Comparison Measures
- Financial data
- Profitability Measures
- Sales Performance data
  - Costs
  - Promotion
  - Quota
  - Sales
  - Units
  - Channel
  - Geography
  - Product
  - Time

Selected:

- Sales
- Sales Year Ago
- % Change Sales
- Channel
- Standard
- Geography
- Standard
- Product
- Standard
- Time
- Standard

☒ Automatically add/remove dimensions

Comparison Measures

Help

**Worksheet Wizard**

Items Dimensions Hidden Dimensions

Choose Product From: 'Standard' hierarchy

Available:

Members Conditions Saved Selections

- Exception
- Top/Bottom
  - Top 3 based on Sales
  - Bottom 5.0% based on Sales Year Ago
  - Making up top 3.0 % of Sales Year Ago
- Hierarchy
- Time/Ordinal
- Match

Selected:

Steps Members

- 1. Start with Video Division
- 2. Add Equipment/Parts: Top 3 based
  - Then Add
  - Then Keep
  - Then Remove

Sort Save

Help Apply OK Cancel

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 Item Product All Products Time March 2001

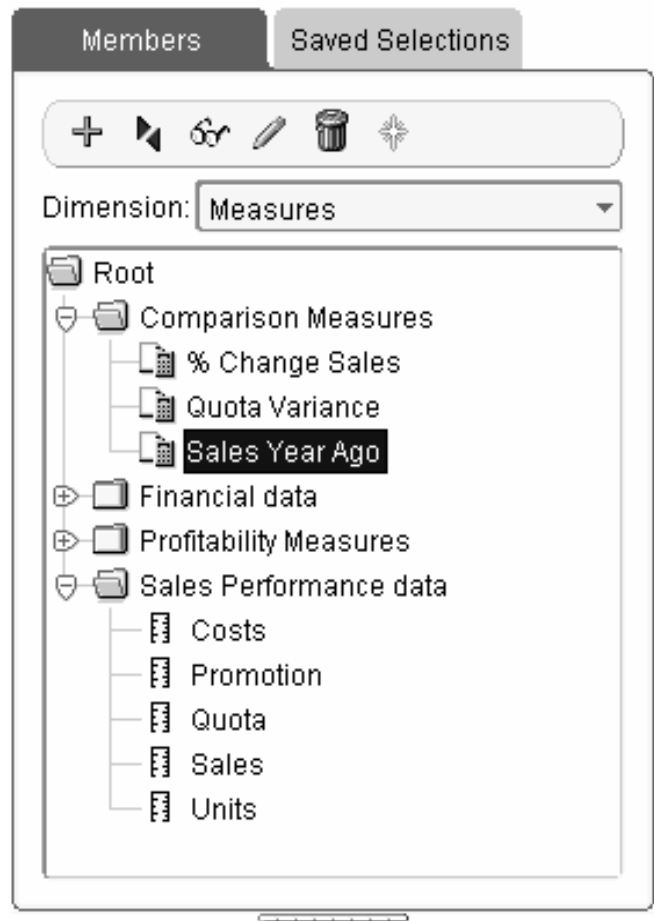
Page Item	Product	Time
Worldwide		9.2
Americas		3.5
Asia		2.5
Australia		1.5
Europe		2.5

Negative sales growth highlighted red

Sales vs. Year Ago Product Performance by Region Sales Trends



# Navigator – Member Selection

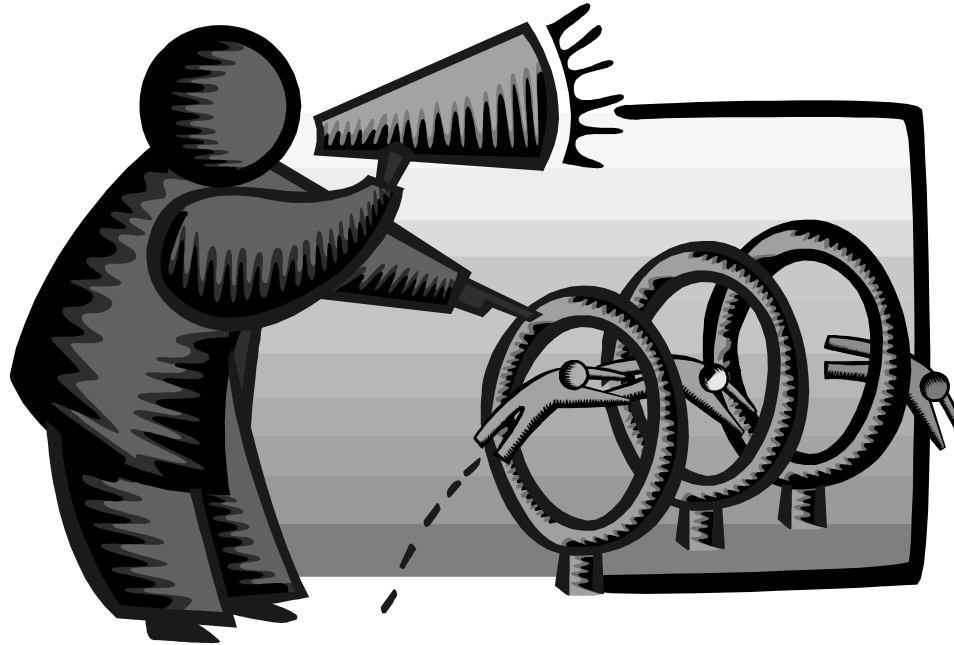


- **Dimension members and measures can be selected and applied to the worksheet**



# 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**



# **BI Beans Specifics**

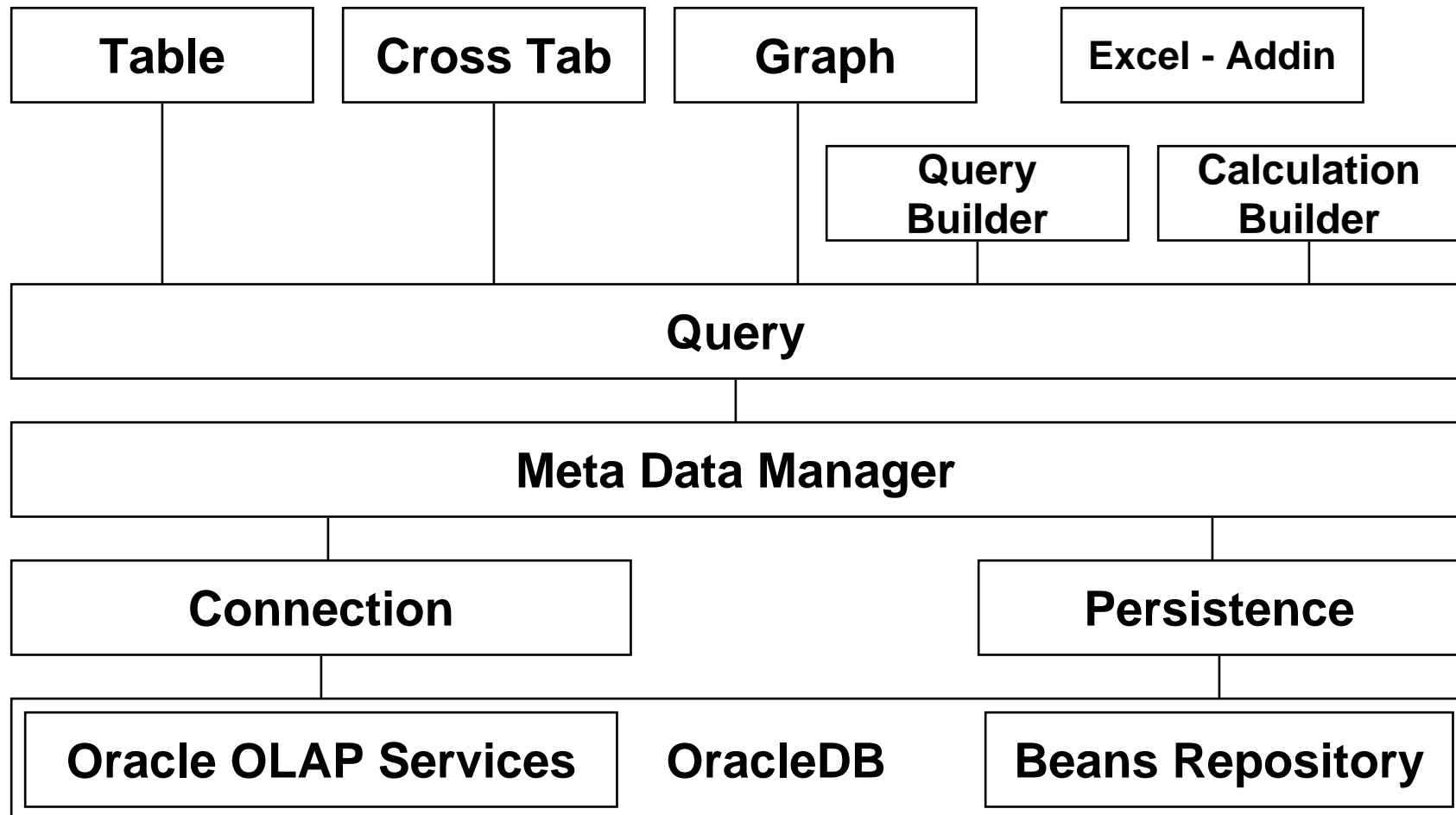
---

- **Can look like anything**
- **Since custom coded, can do anything**
- **Generally, use Cross-tab and Graph bean to present data**
- **Can integrate other data easily**
- **JDeveloper not required, but helpful**
- **No deployment license necessary**
- **Requires Oracle OLAP to run**



# Business Intelligence Beans

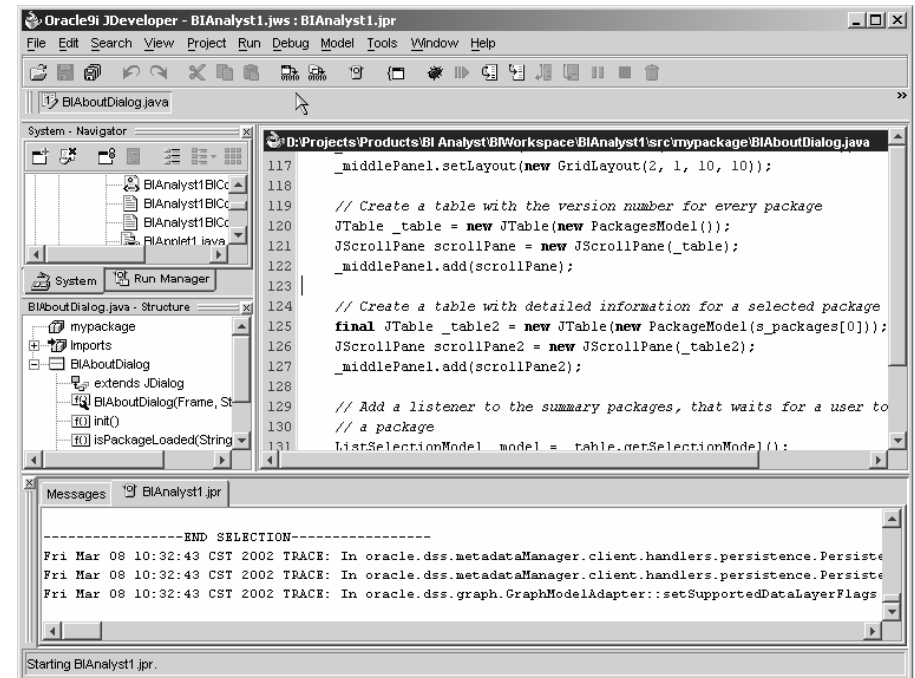
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# JDeveloper Integration

- 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





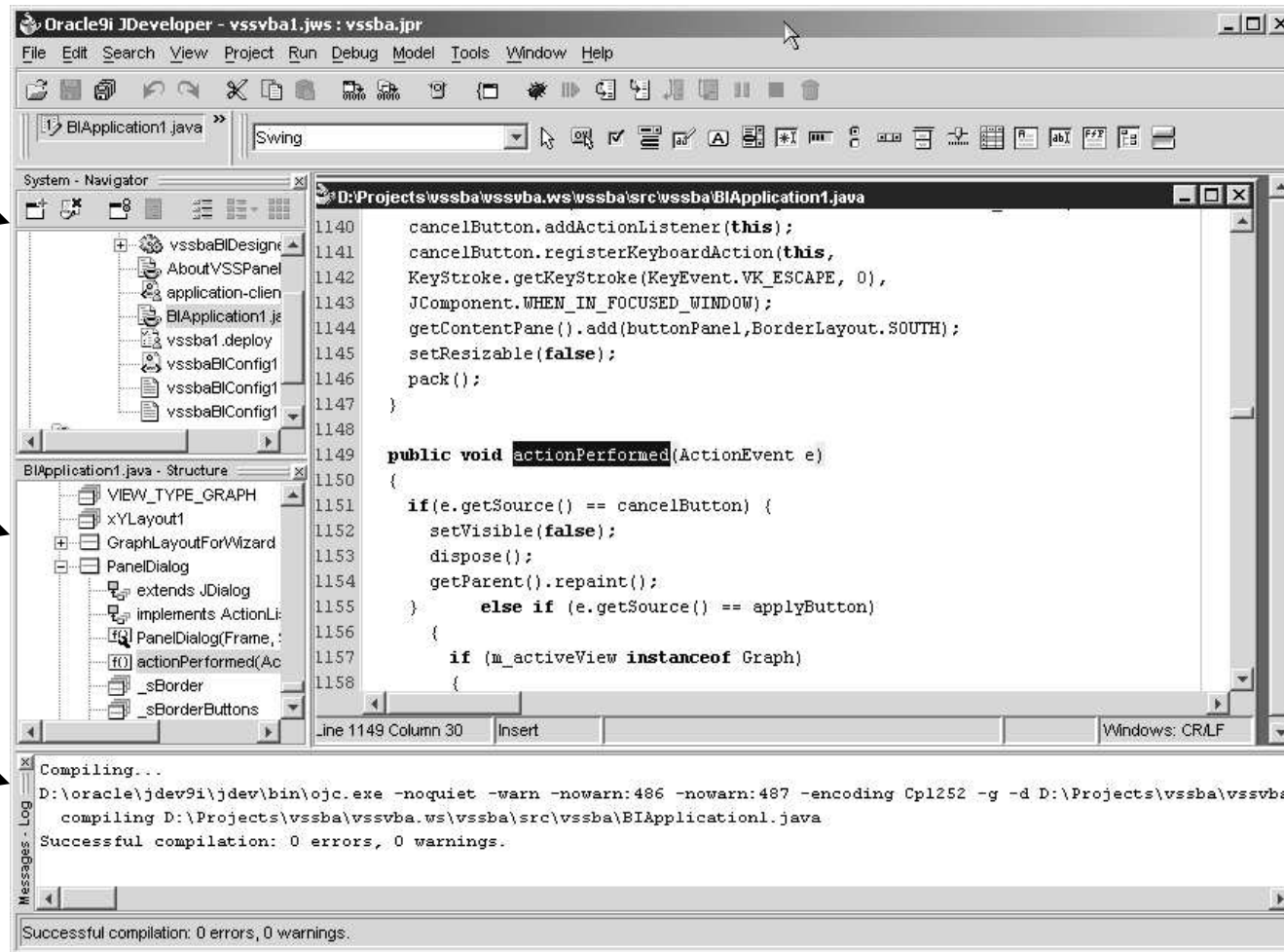


# JDeveloper Environment

**System  
Navigator**

**Structure  
Window**

**Log  
Window**

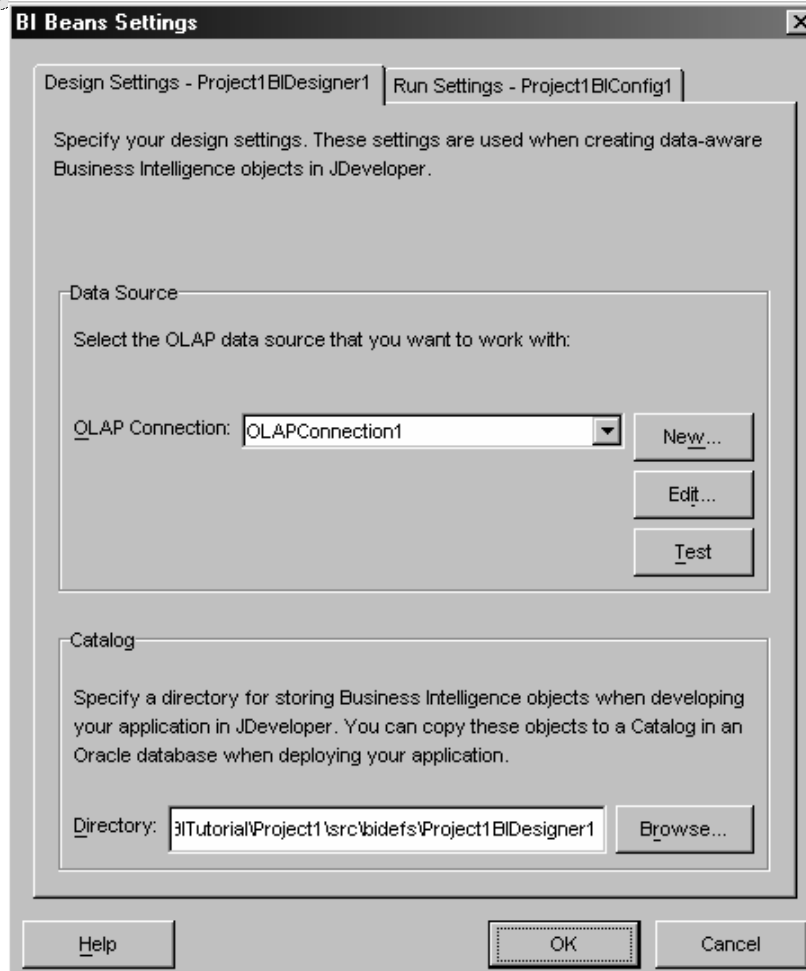


**Component  
Toolbar**

**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:  
\*\*\*\*\*

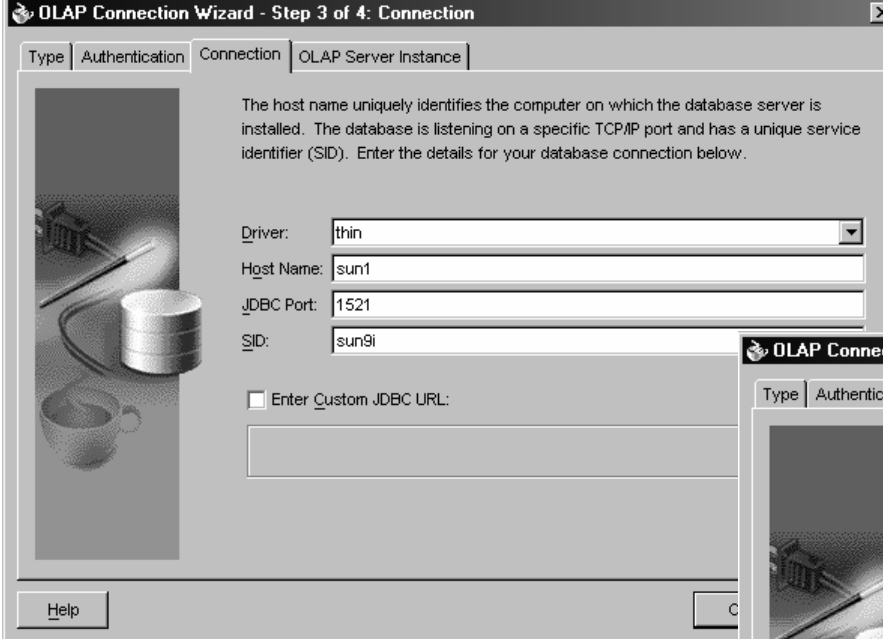
Role:

☐ 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

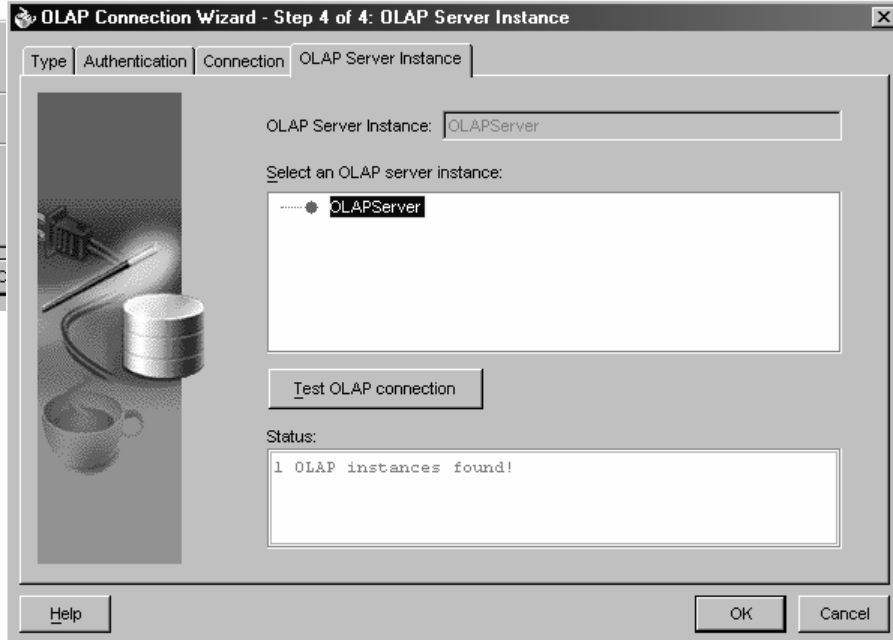
SID: sun9i

☐ 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:

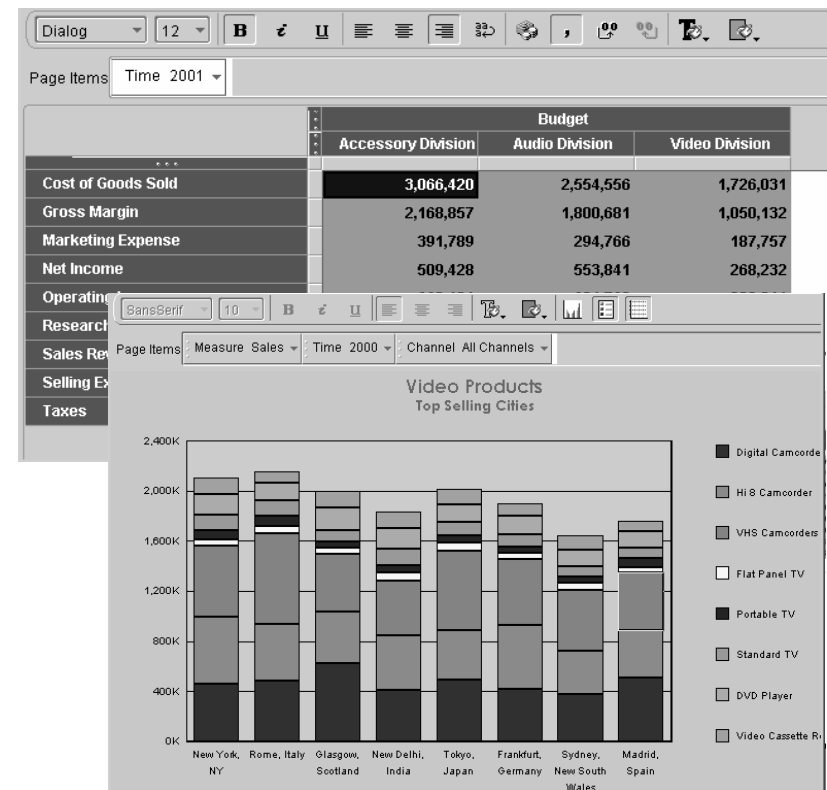
1 OLAP instances found!

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

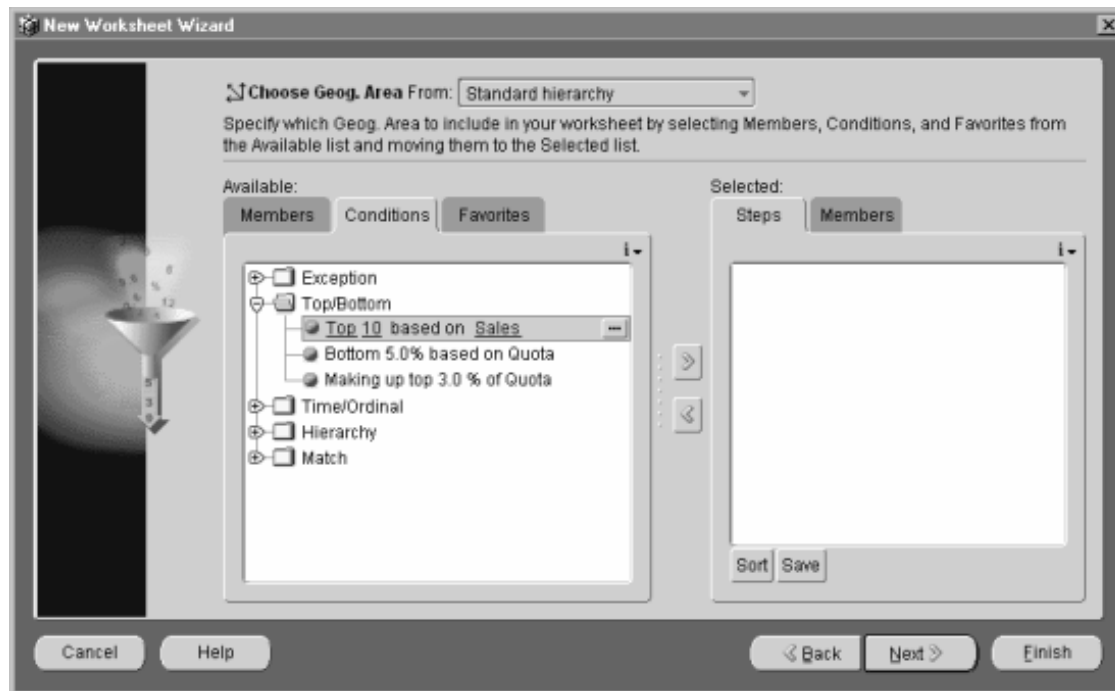
Choose Finish to generate the BI Java Application.

**Table Data:**

	First Quarter			Second Quarter
	January	February	March	
ect	5,000	5,400	5,800	7,200
irect	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


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

**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

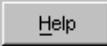

Row header style:

☒ Inline

☐ Outline

Sample:



	Quarter 1	Quarter 2	Quarter 3	Quarter 4
Product A	100	150	200	250
Product B	120	180	220	280
Product C	110	160	210	260
Product D	130	190	230	290


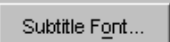
**Crosstab Customizer - Step 2 of 3: Titles**

Options | Titles | Format | Style


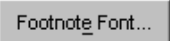
Enter text for your crosstab titles.

☒ Show Title  

Asian Sales Summary

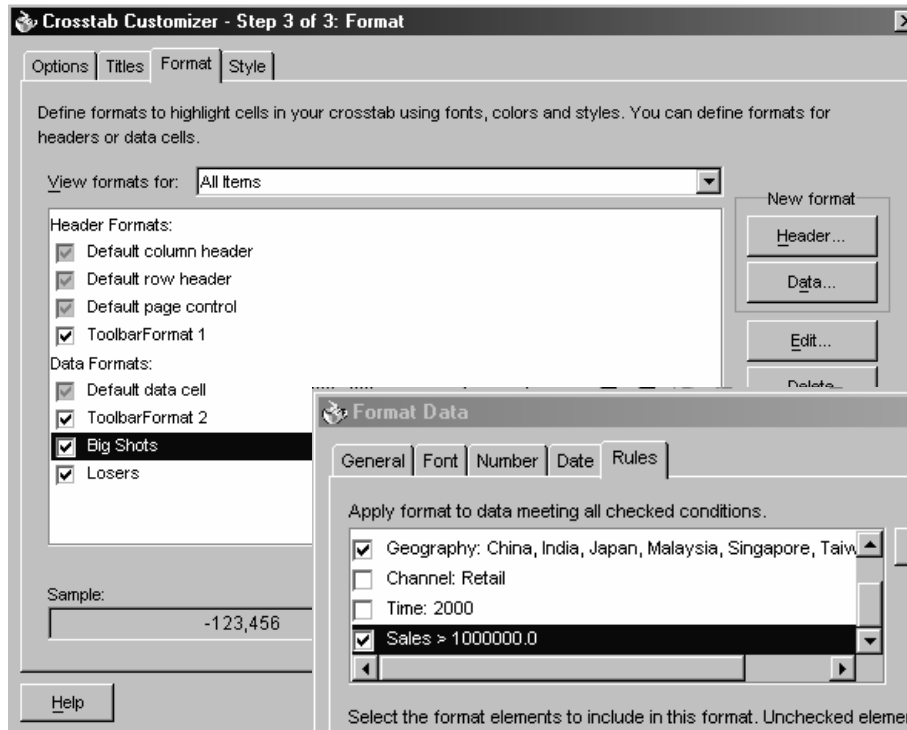
☒ Show Subtitle  

Stoplight Report

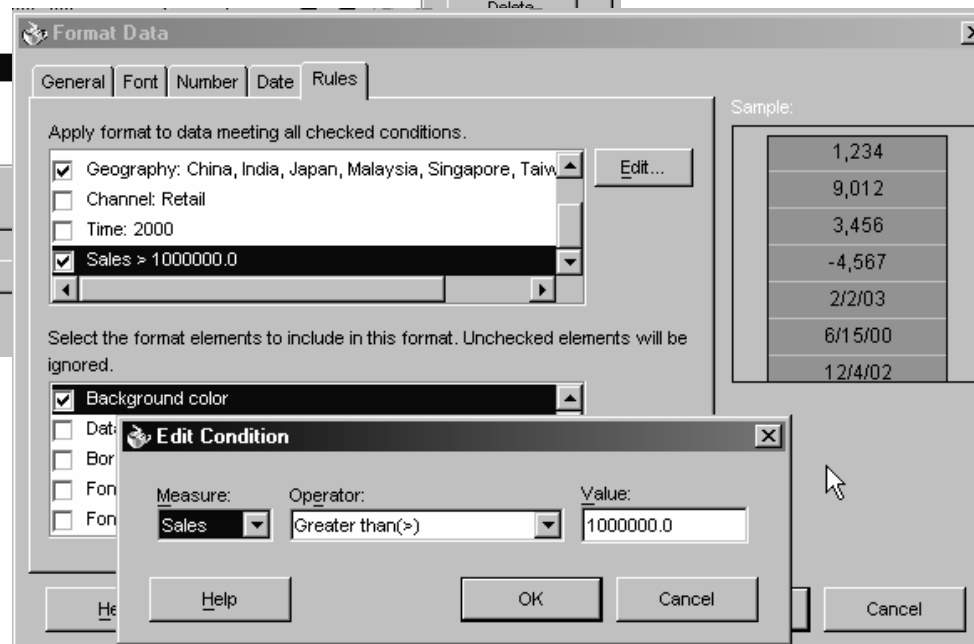
☐ Show Footnote  



# Customizer



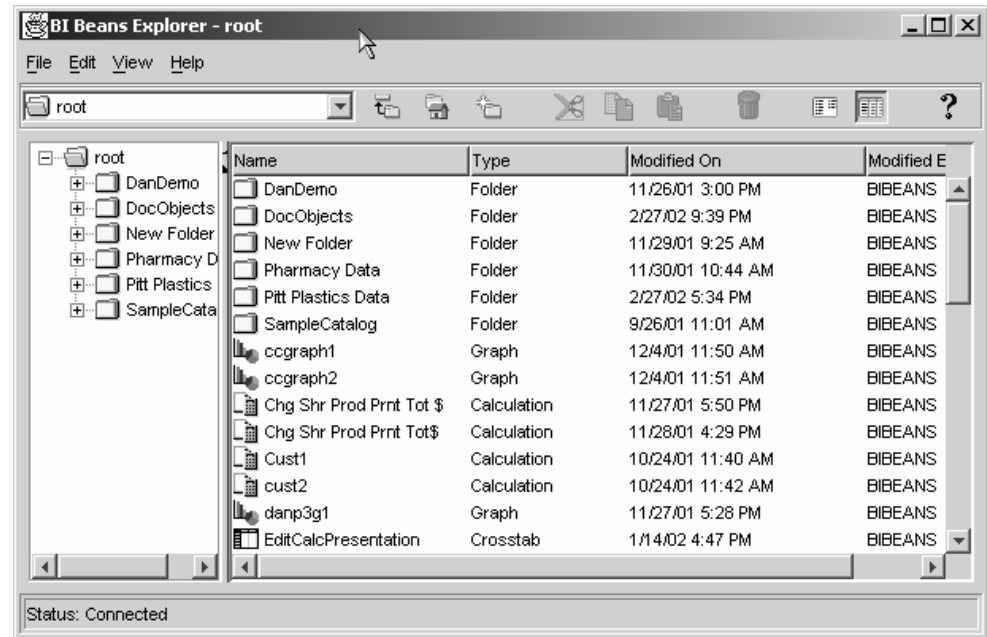
- Add data-driven formatting.





# Persistence Services – BI Catalog

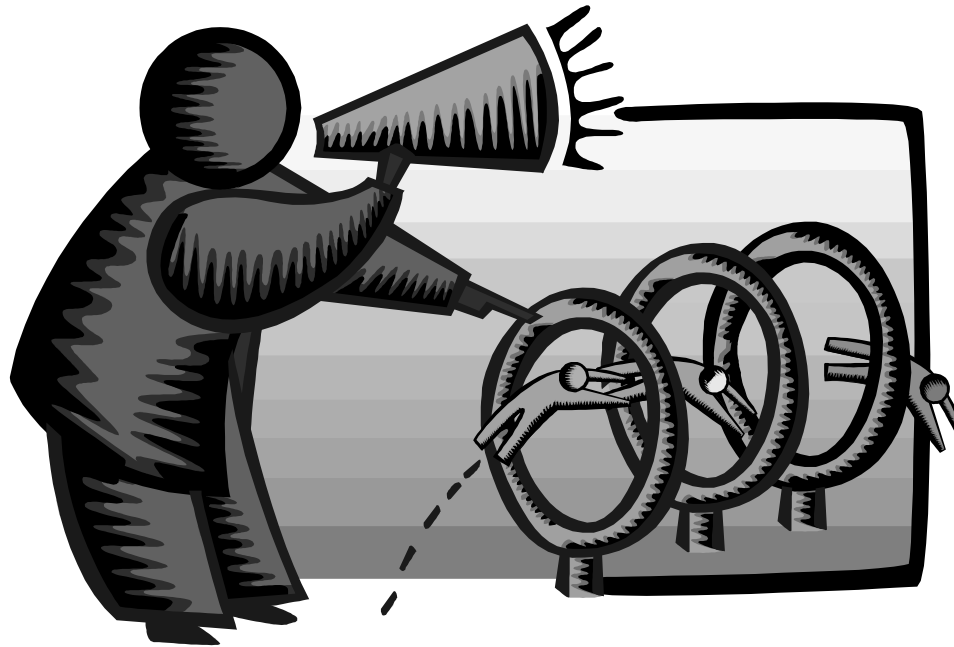
- Enables end users to save personal analyses or share analyses with other users.
- Organizes information in folders
- Persisted objects include:
  - ☐ Crosstab, table and graph formatting
  - ☐ Entire queries or individual selections
  - ☐ Calculations
- Objects persisted in XML format
- Searchable





# Demonstration of BI Beans Application

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# **Spreadsheet Add-in Specifics**

---

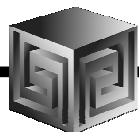
- **Use instead of Discoverer as ETL OLAP Tool**
- **Allows access directly from Excel to entire OLAP cube**
- **Allows access to Query Editor**
- **Allows access to Calc Builder**
- **Presents data in familiar Excel interface**
- **Breaks down perception OLAP data "closed"**
- **Users love access from 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
CD Player	16 55R 1dR	16 15d 4RR	> 50%
Amplifier	14		
VHS Camcorders	13		
Receiver	13		
Digital Camcorders	12		
	70		

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

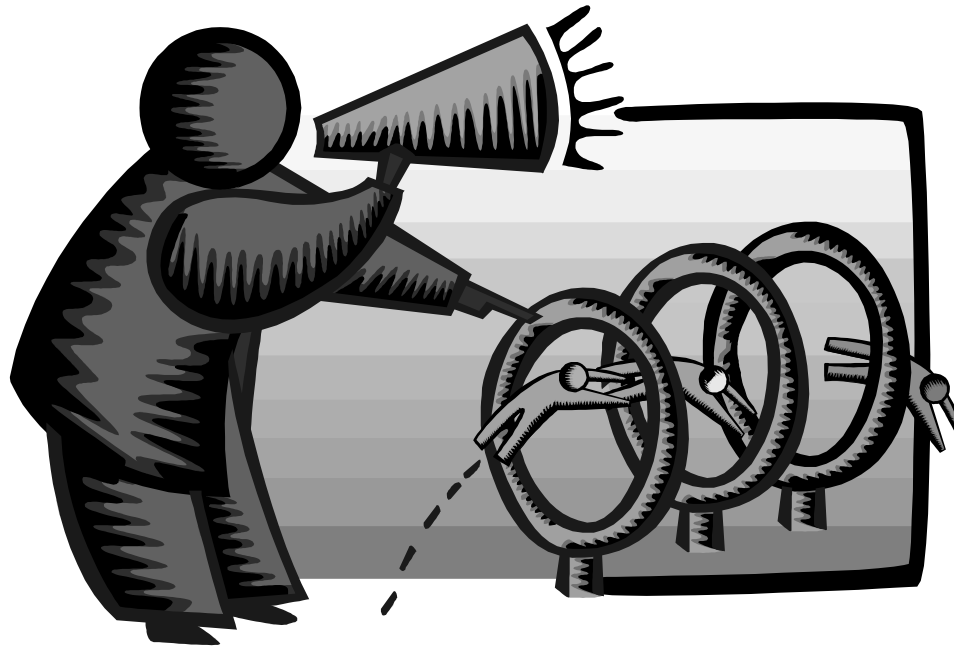
Ready

NUM



# 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

# **Enterprise Planning and Budgeting (EPB)**

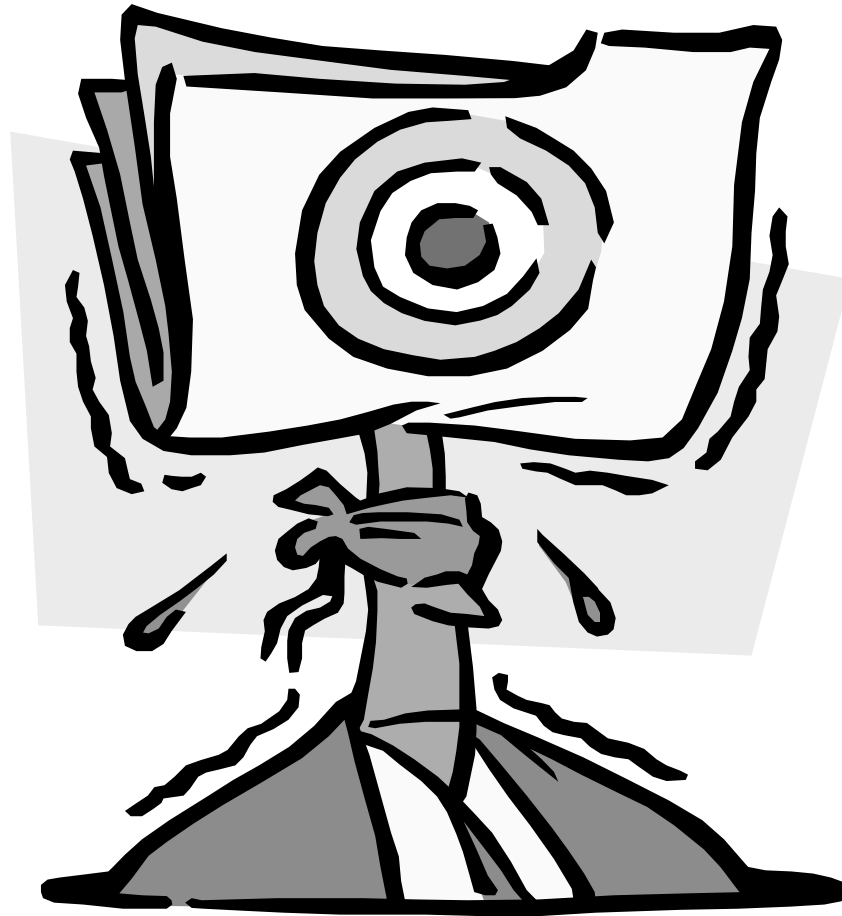
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- **Part of Oracle E-Business Suite (Oracle Apps)**
- **Integrated security**
- **Workflow oriented**
- **Extends calc templates**
- **Includes custom aggregates**
- **Thin BI Beans deployment**
- **Worksheets enable writeback**
- **Migration tools from OFA/OSA eventually**

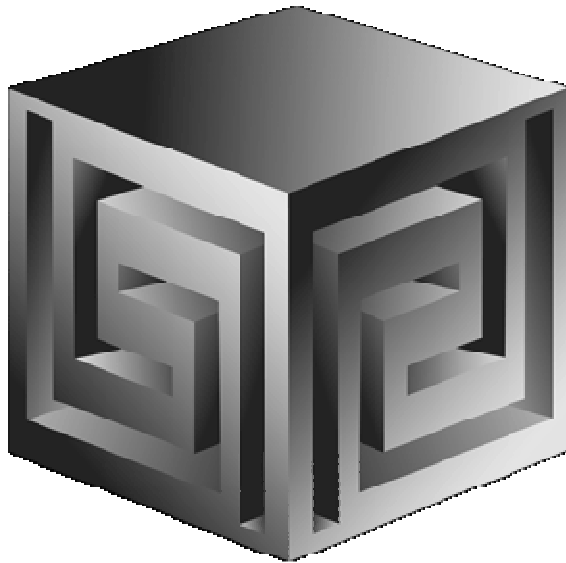
# QUESTIONS?

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# **Front-End Tools to View OLAP Data**

**ODTUG Now! 2005**



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