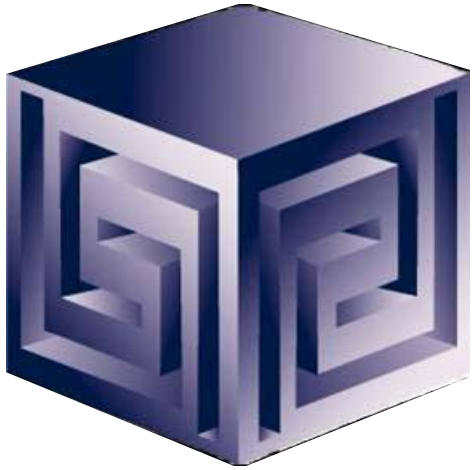
Discoverer 10g or Bi Beans – Which Is Right for You?

IOUG Live! 2004

Session #418



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Vlamis 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**

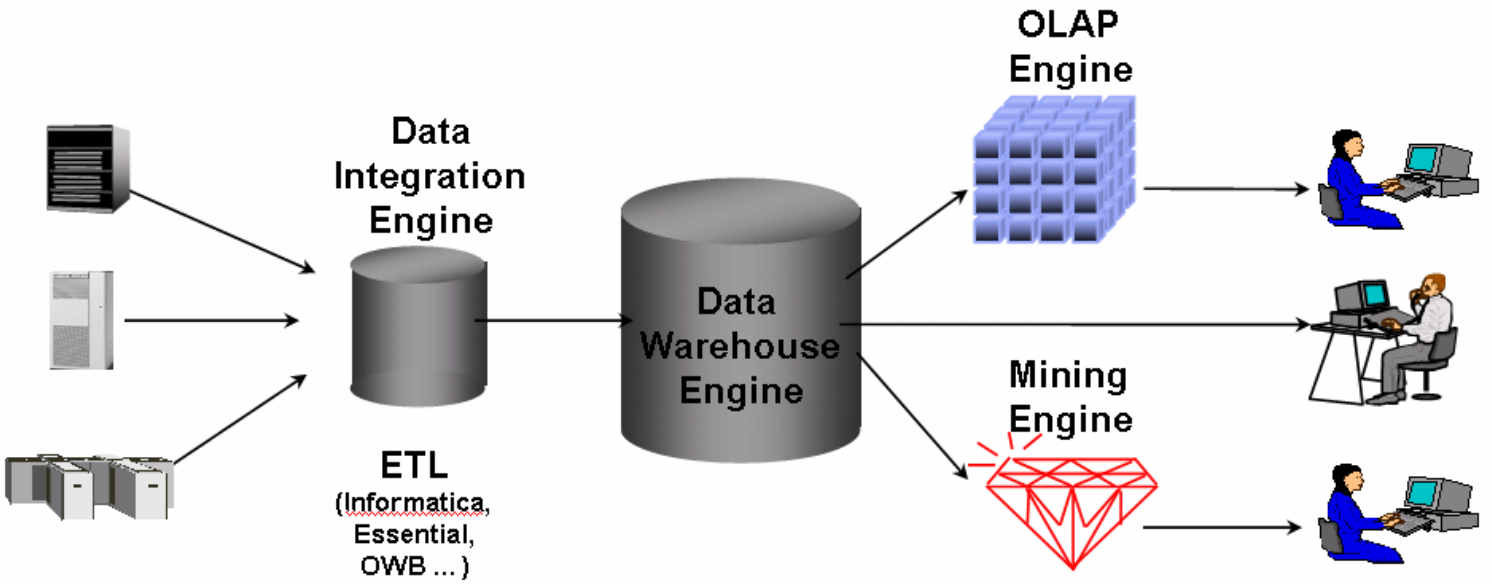
Outline

- Introduction - History
- Overview of OLAP, BI Beans and Discoverer fit together
- BI Beans Specifics
  - General Features of BI Beans Applications
  - Features Unique to BI Beans
  - Demo
- Discoverer OLAP Specifics
  - General Features of Discoverer OLAP
  - Plus or Viewer
  - Demo (hopefully)
- Which is Right for you?

In the Past

- **Previous development of BI and OLAP Applications required proprietary development environment**
- **Each deployment model required a different tool**
- **Development effort very labor intensive**
- **Concept to Deployment takes long time**
- **Requires specialized skills**

Business Intelligence the Old Way



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

Thin Client Demo

BI the New Way: Oracle 9iDB

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

Thin Client Demo

Key Developments for Oracle OLAP

- **Integrating Express Server team into Oracle Server team**
- **RDBMS gets OLAP functionality in SQL**
- **Data Warehouse features in Oracle 8i:**
  - **Bitmap and bitmap join indexes**
  - **Materialized views**
  - **Query rewrite**
  - **“N-pass” functions**
- **Increasing use of very sparse data**
- **Oracle focus on integration**

History of Oracle OLAP

- Express language goes back to 1970's
- Applications written in Express (CUI)
- Early 1990's Express Objects introduced
- 1995 Oracle purchased Express from IRI
- Oracle Express Objects based on Visual Basic
- 1999 OEO on web "Walden" dropped to focus on Java-based BI Beans
- 2001 Oracle9i released with Express engine
- 2001 BI Beans released under JDeveloper

History of Oracle OLAP (cont.)

- 2002 VSS released VSSBA, the first ad-hoc tool to access Oracle OLAP using BI Beans
- 2002 9iR2 integrated Express engine and AWs
- 2002 BI Beans accesses Analytic Workspaces
- 2003 AWM provided tools to build AWs from ROLAP cubes
- 2003 Oracle saw need for ad-hoc tool and began Discoverer OLAP development
- 2004 Oracle extends Discoverer to use BI Beans

Oracle OLAP Ad-Hoc Analysis

Situation in 2003:

- **Discoverer for Ad-hoc analysis**
- **Bridge for developing views for Disco**
- **3rd Party tools (e.g. VSSBA) limited adoption**
- **BI Beans / JDeveloper for "build your own"**
- **Few companies building their own**
- **Discoverer did not have full power of BI Beans Query Builder / Calc Builder**
- **Companies questioning Oracle's commitment to Oracle OLAP**

Extend Discoverer via BI Beans

Solution:

- **Discoverer Plus OLAP built in BI Beans for ad-hoc application use**
- **Use Crosstab, Graph for visualization**
- **Use Query Builder and Calc Builder**
- **Offer JDeveloper / BI Beans for customers that want to "build their own"**
- **Shows Oracle's commitment to Oracle OLAP**

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 9i 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 9i OLAP Add to a DW?

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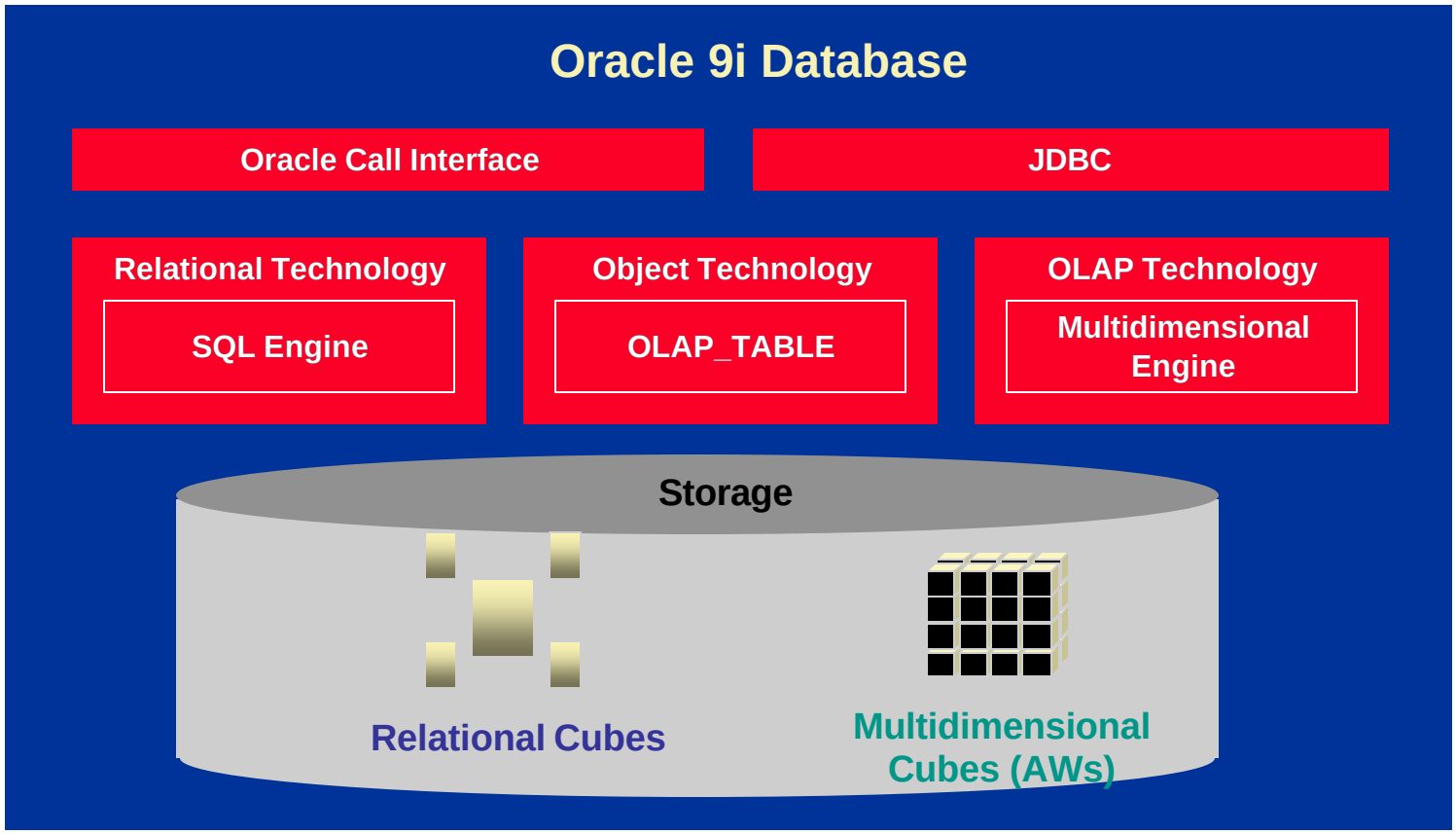
- Iterative discovery process (not just reports)
- Ad-hoc analysis
- Easy selection of data with business terms
- OLAP DML with what-if, forecasting
- Platform for extensions

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 9i RDBMS - MDDS



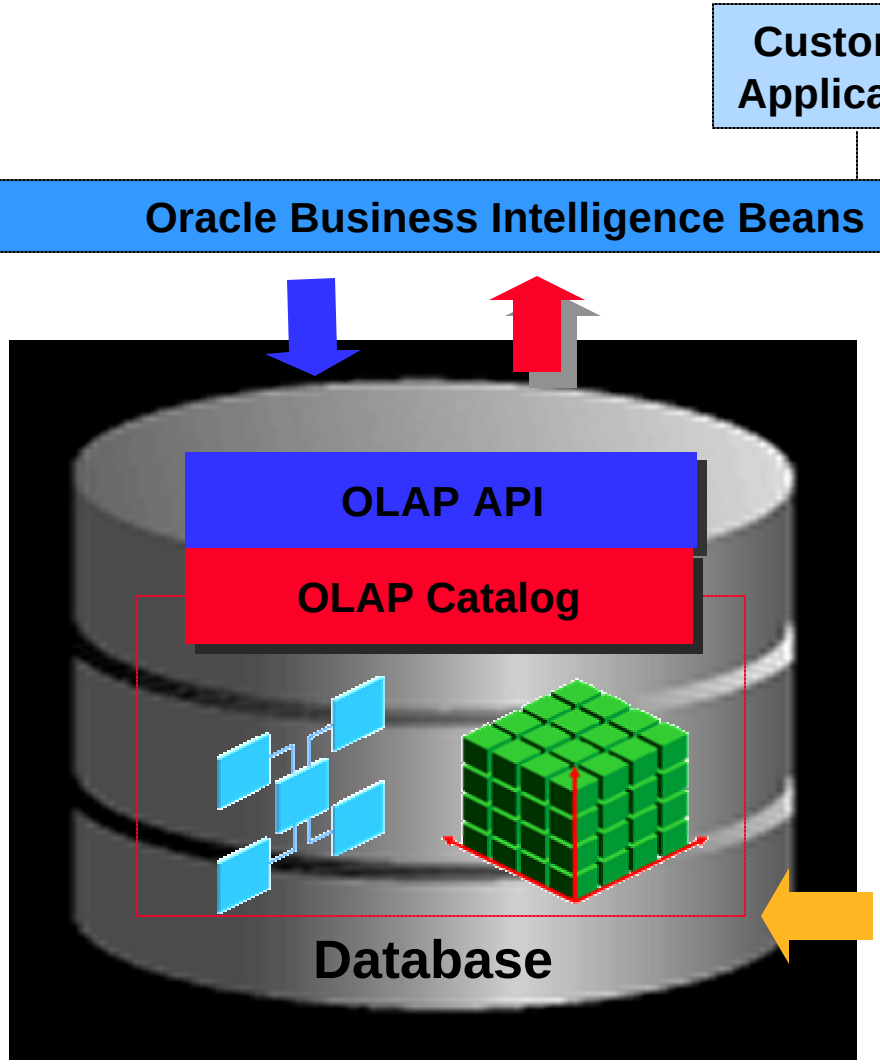
Oracle BI – Getting the Data In

- **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 (part of OEM)**

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**

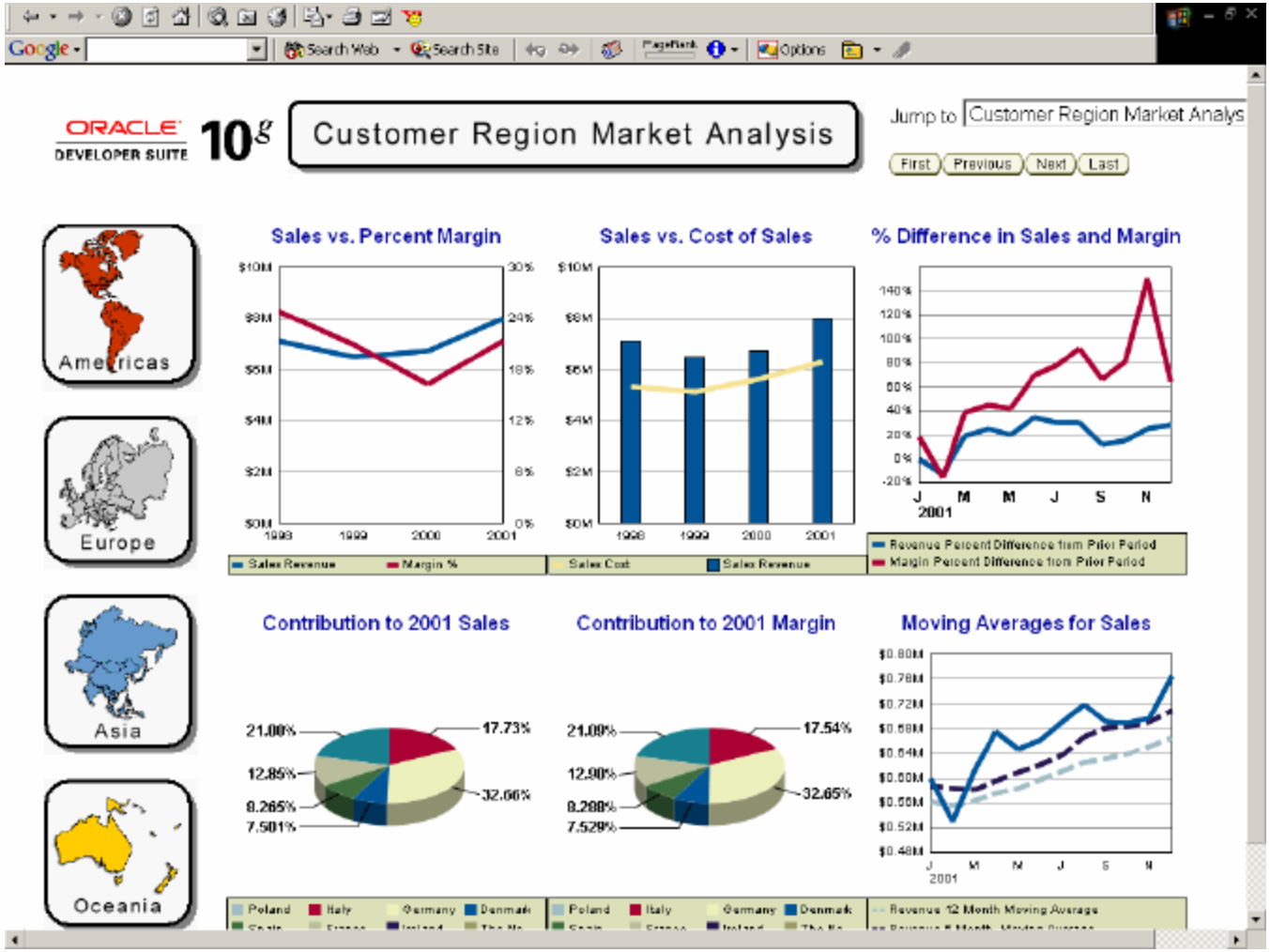
Custom Development via BI Beans



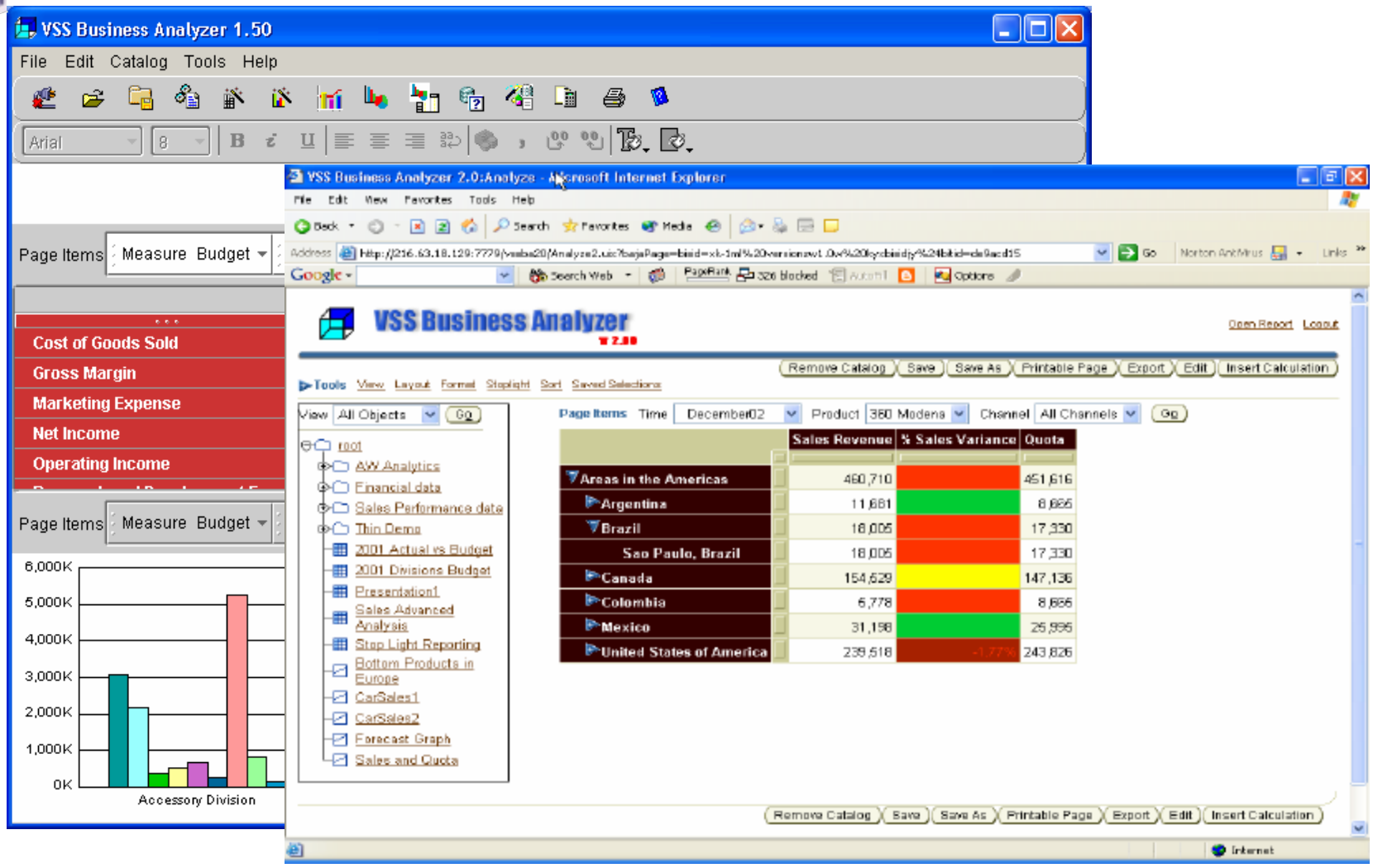
Custom BI Applications

- 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

Custom BI Application



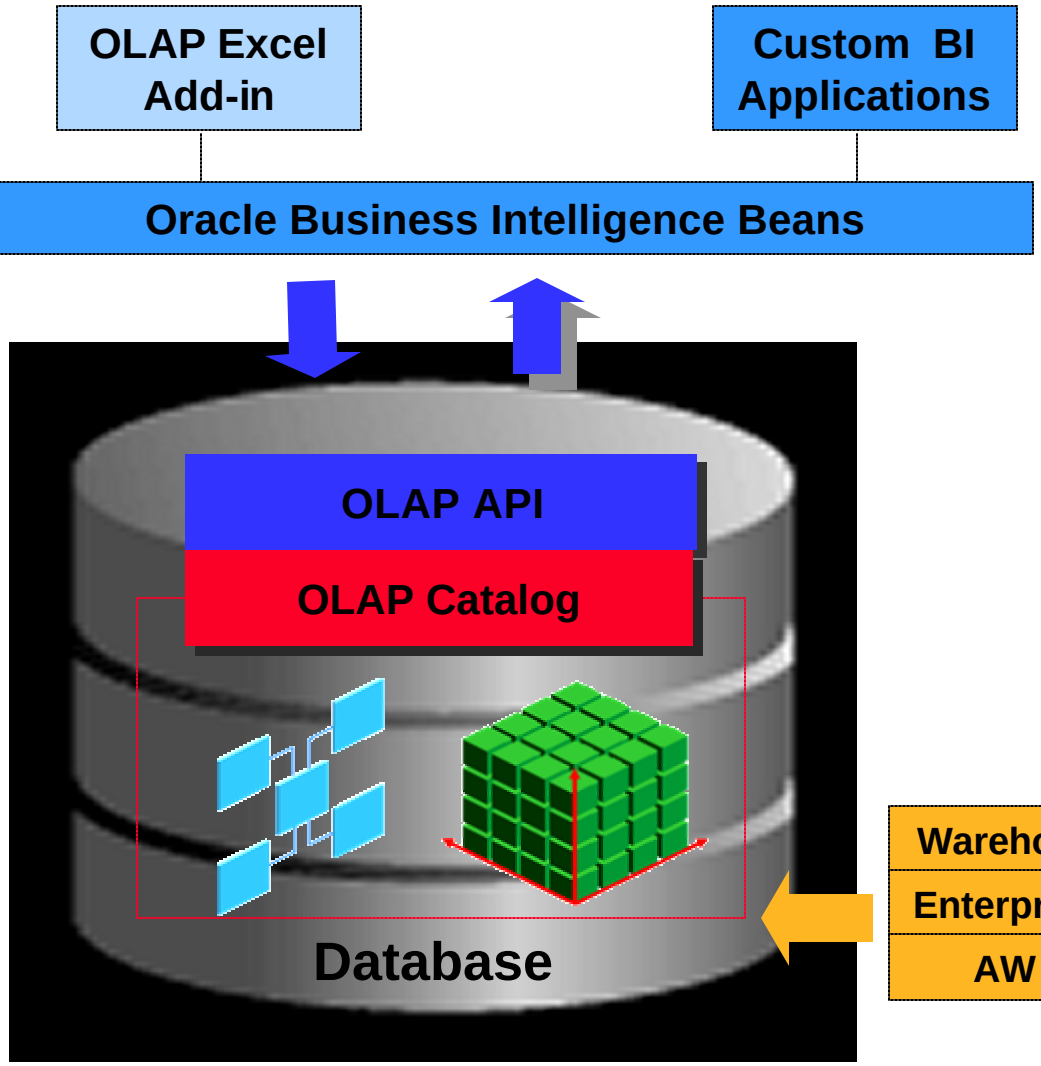
BI Beans Applications



Thick Client

Thin Client

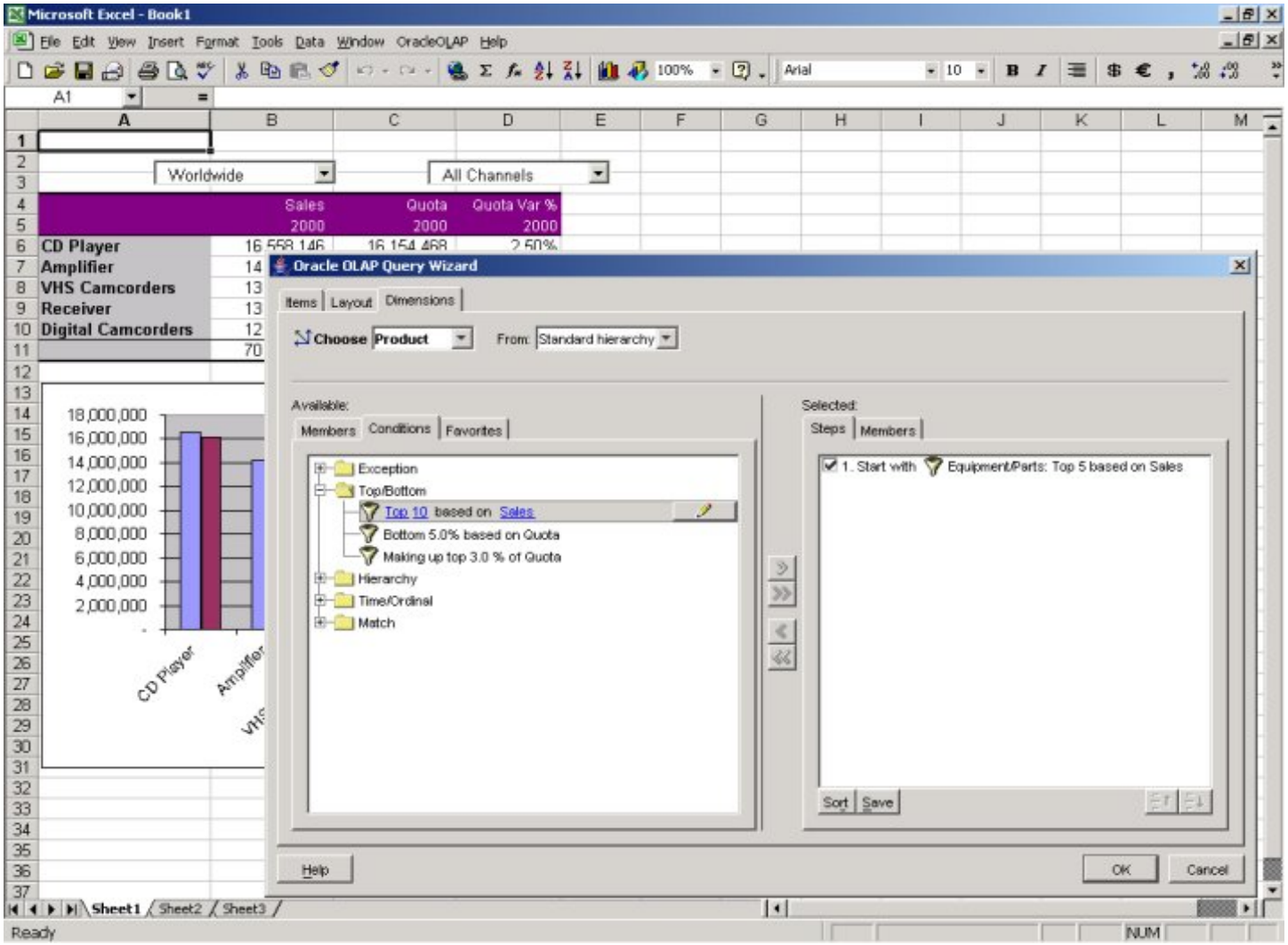
Access to All OLAP Data from Excel



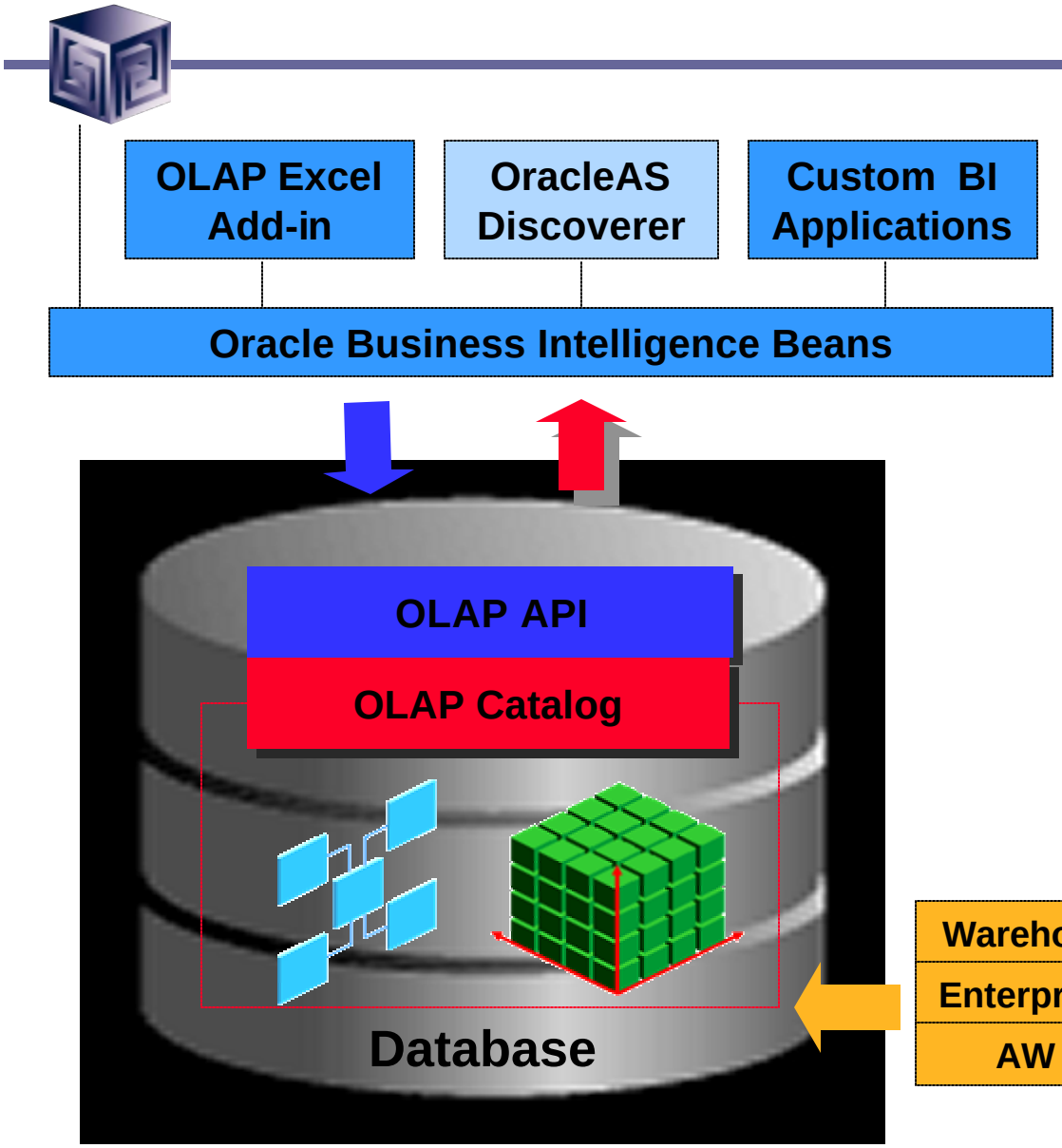
OLAP Excel Add-in

- Query Oracle OLAP directly from Excel
- Leverages BI Beans Query Builder and Calc Builder

Spreadsheet Add-In



Ad-hoc Access OLAP via Discoverer

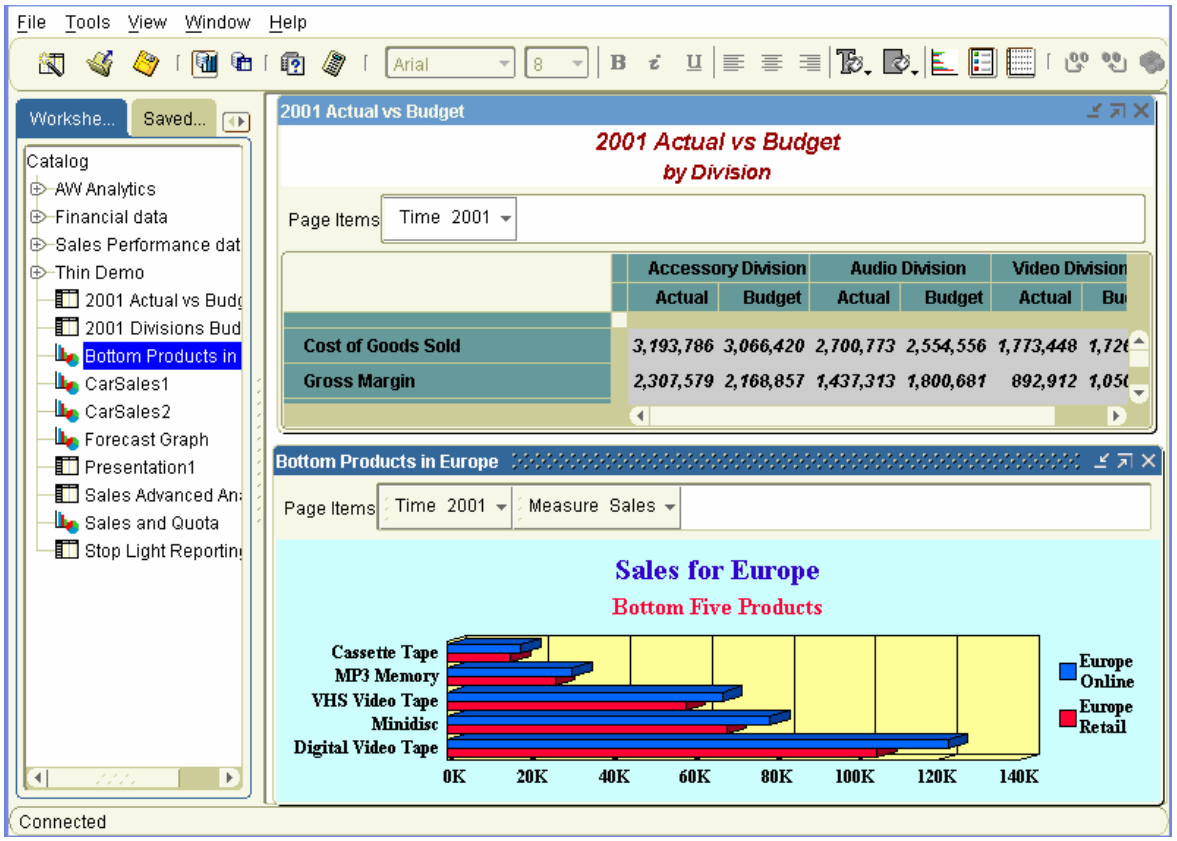


OracleAS Discoverer

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

Discoverer 10g – Discoverer OLAP

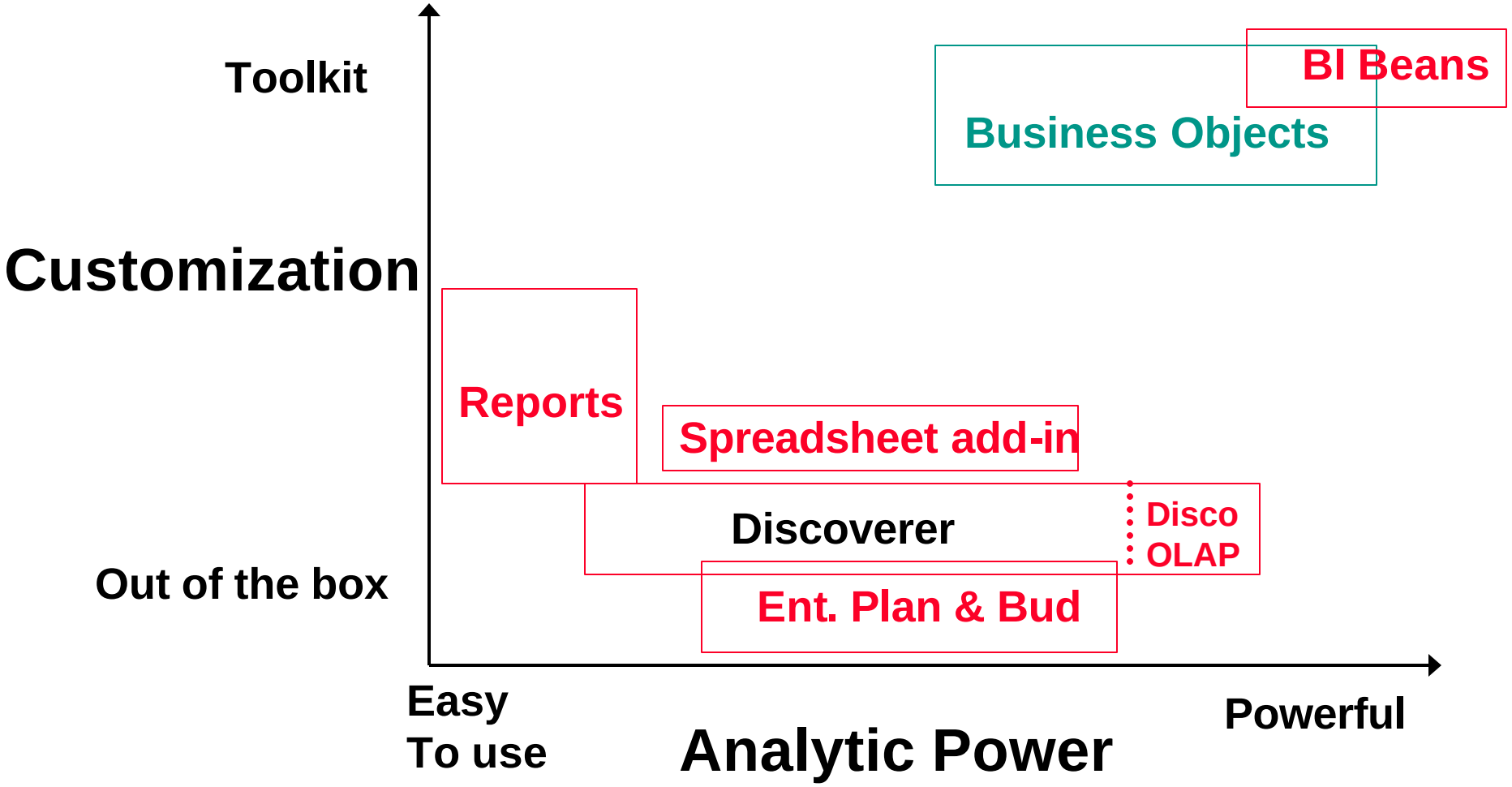
- **Currently AWM creates EUL for SQL Access**
- **Disco 10g adds Direct Access to OLAP**



What Access Tool?

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

Choices for Viewing Data



Java OLAP API

- Object-oriented
- Mathematically consistent
- Java (industry standard)
- Compatible with JOLAP standard
- Declaratively (not procedure) based
- Data in relational or analytic workspace
- Multidimensional cursors
- Really designed for low-level access
- Most developers will use BI Beans instead

OLAP API Calculation Capabilities

- Multidimensional object model
- Totals broken out by multiple attributes
- Row and column calculations
- Union dimensions
- Measures as dimensions
- Calculated dimension members
  (e.g. income 0-20K, 20-50K, 50-75K, >75K)
- Asymmetric queries
- Multiple measures per cell (e.g. color-coding)

Simple Java OLAP API Example

English

Select the products where the dollars measure is greater than 1,000,000 for geography Orlando for time period May2001.

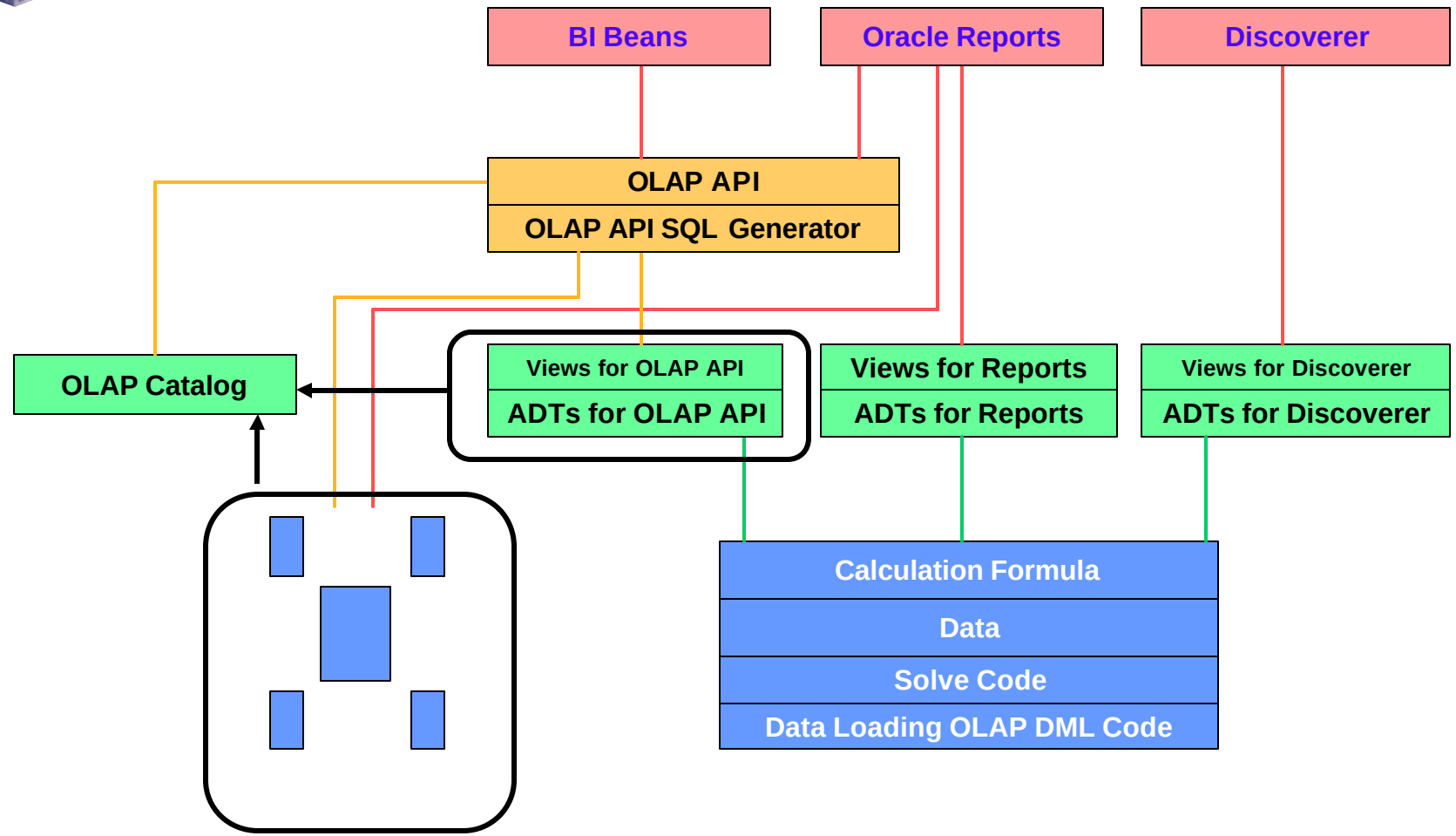
Express

```
limit geography to 'ORLANDO'
limit time to 'MAY2001'
limit product to dollars gt 1000000
```

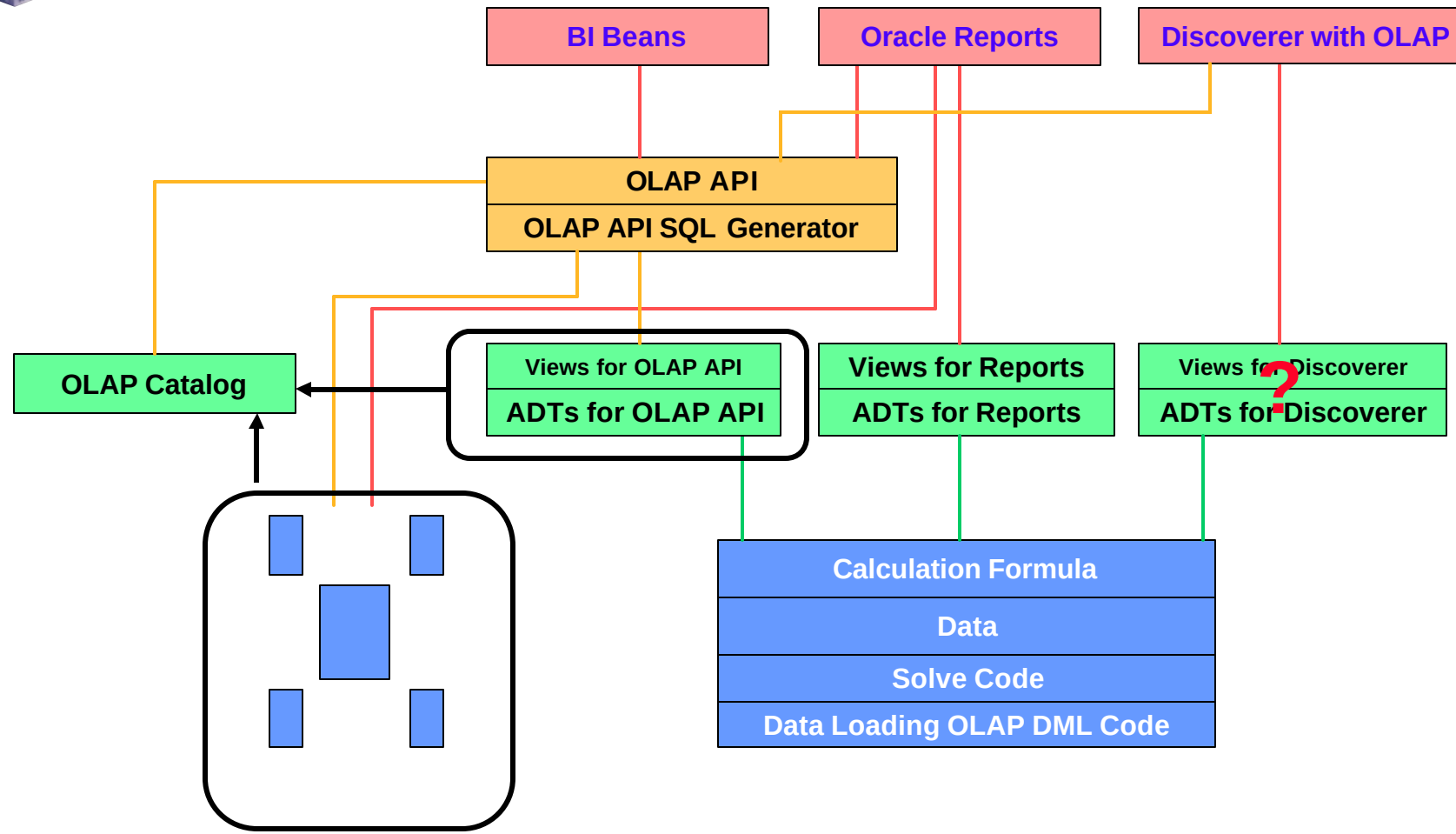
Java OLAP API

```
Source geogSel = geography.selectValue("ORLANDO");
Source timeSel = time.selectValue("MAY2001");
Source dolByProd = dolSrc.join(geogSel).join(timeSel);
Source prodSel = product.select(dolByProd.gt(1000000));
Source dolGT1Mill =
     dolSrc.join(geogSel).join(timeSel).join(prodSel);
```

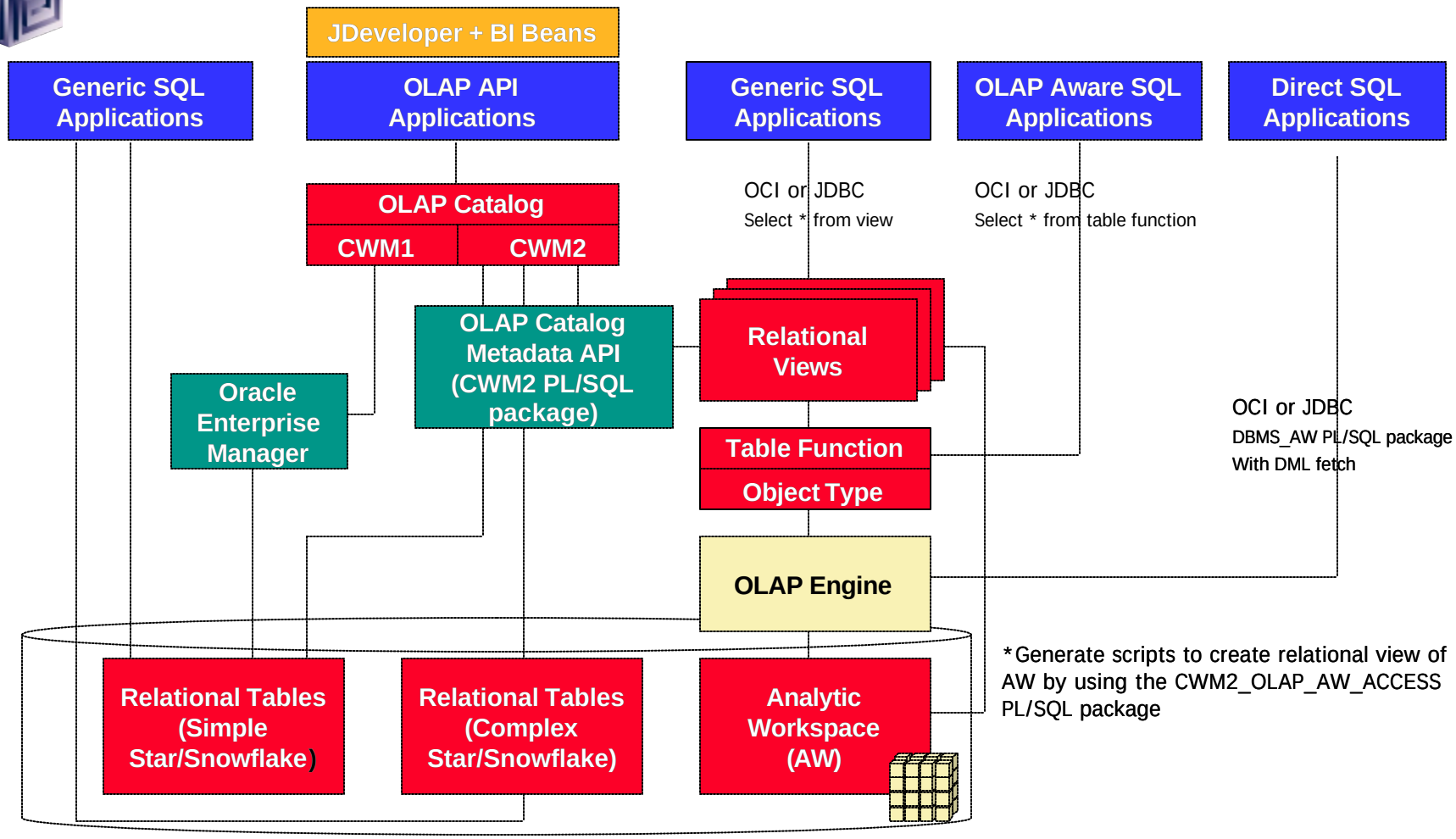
Overview of Access Methods 2003



Overview of Access Methods 2004



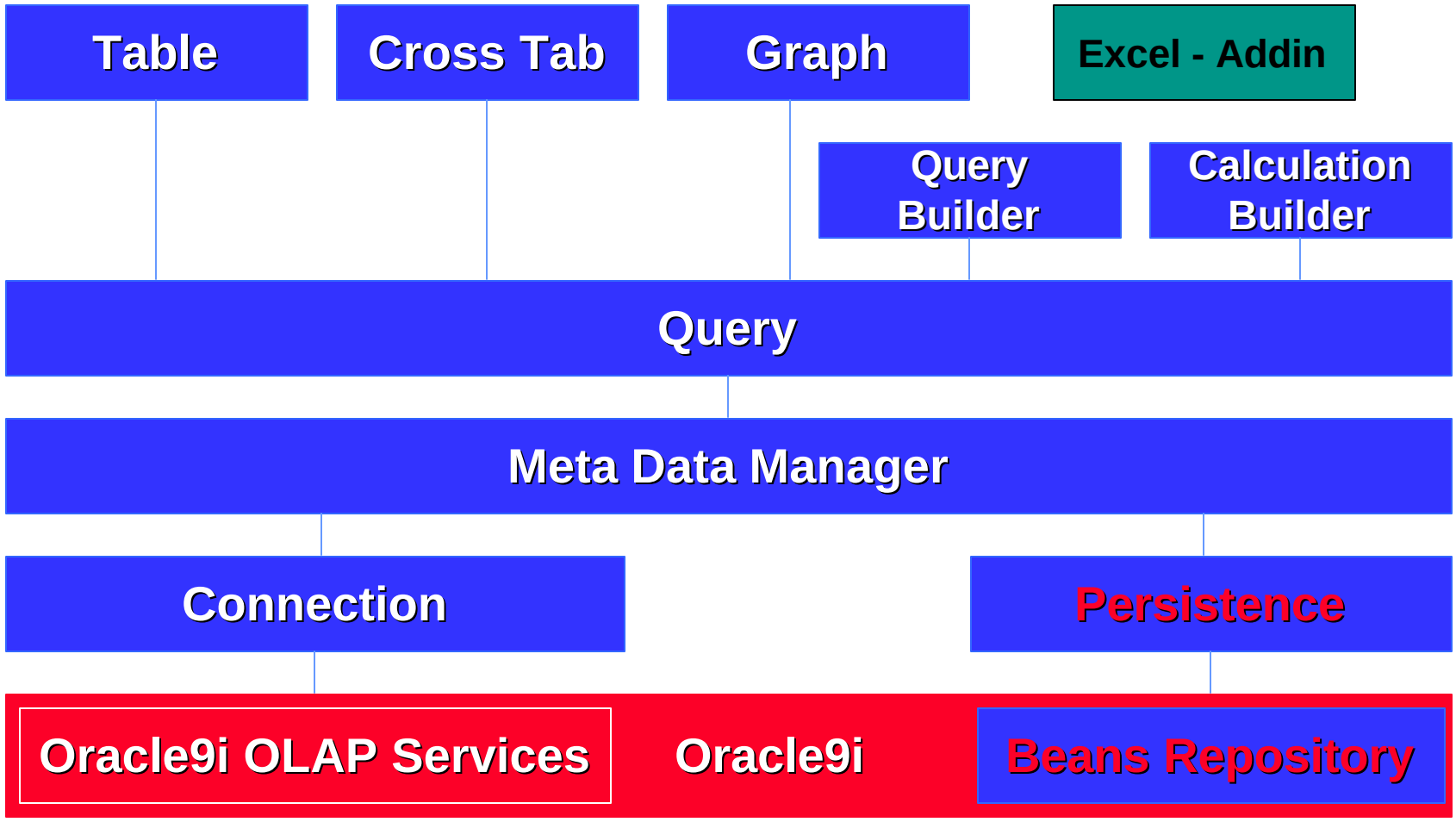
OLAP Access Methods



BI Beans Specifics

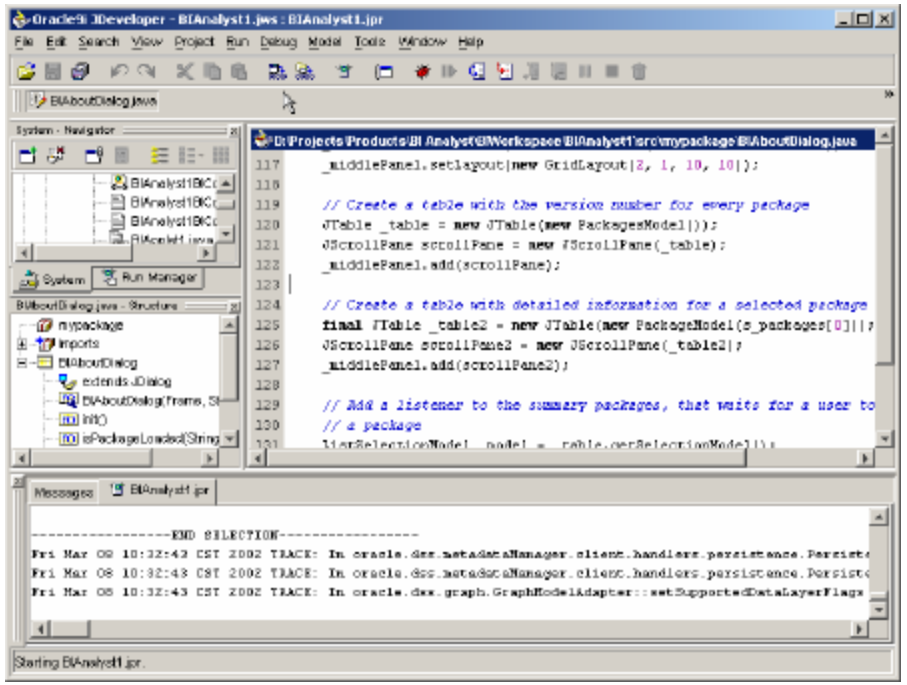
- Can look like anything
- Since custom coded, can do anything
- Generally, use Cross-tab and Graph bean to present data
- Can integrate other data easily
- JDeveloper not required, but helpful
- No deployment license necessary
- Requires Oracle OLAP to run

Business Intelligence Beans

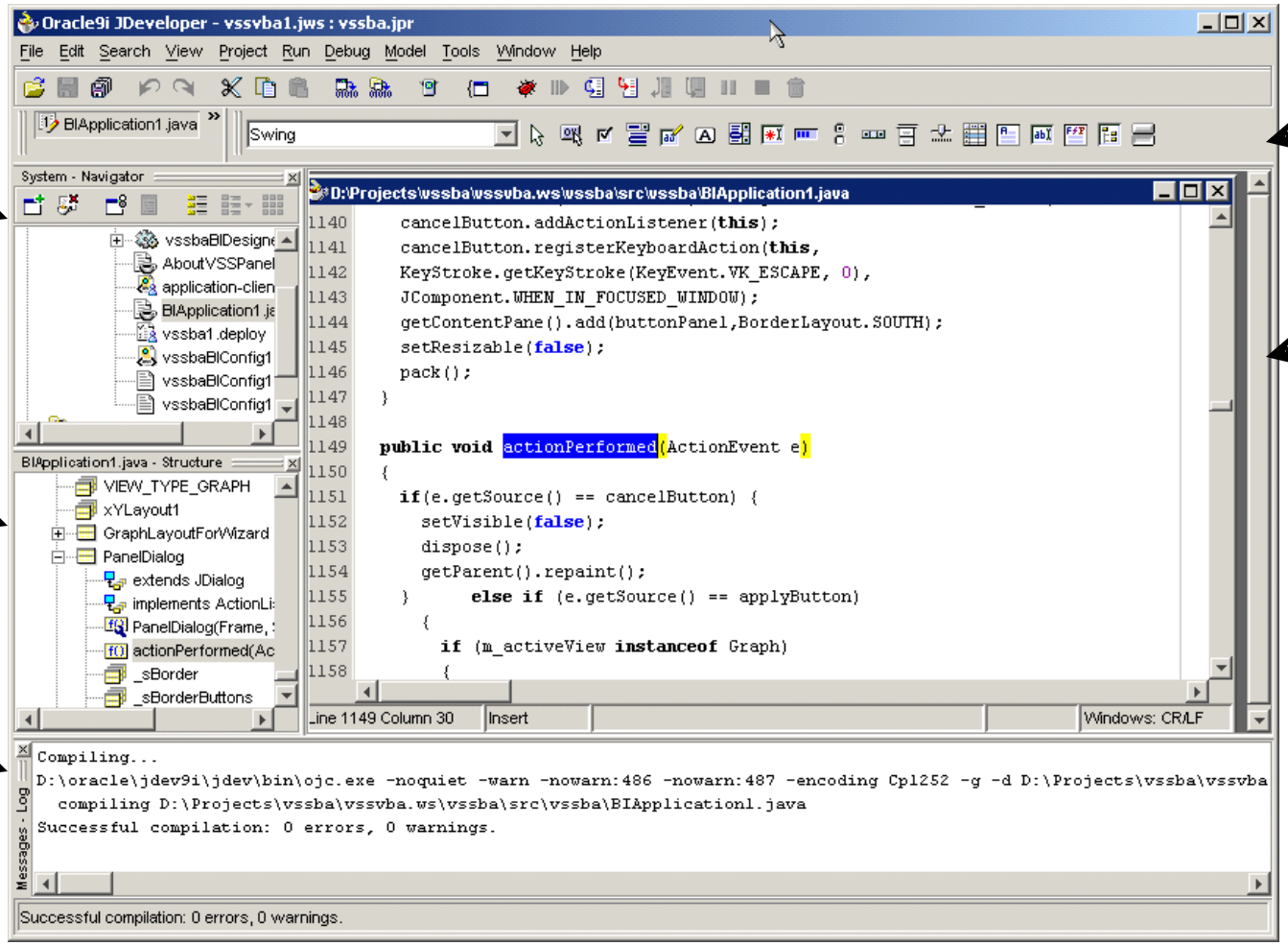


JDeveloper Integration

- **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 9i Environment



System Navigator

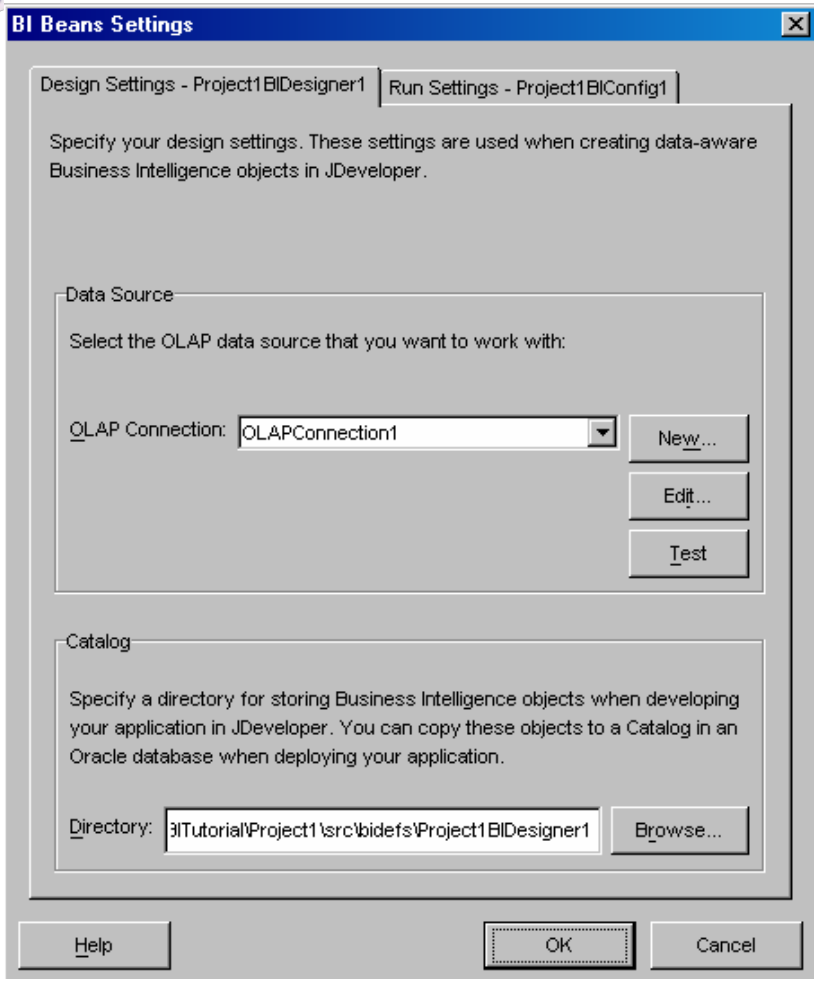
Structure Window

Log Window

Component Toolbar

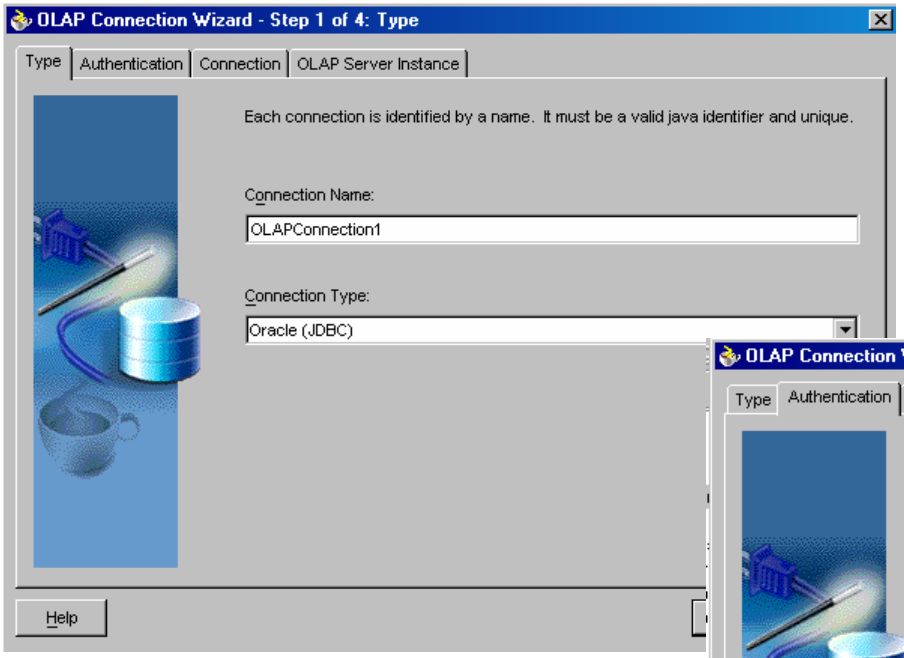
Code Window

BI Beans Designer Settings

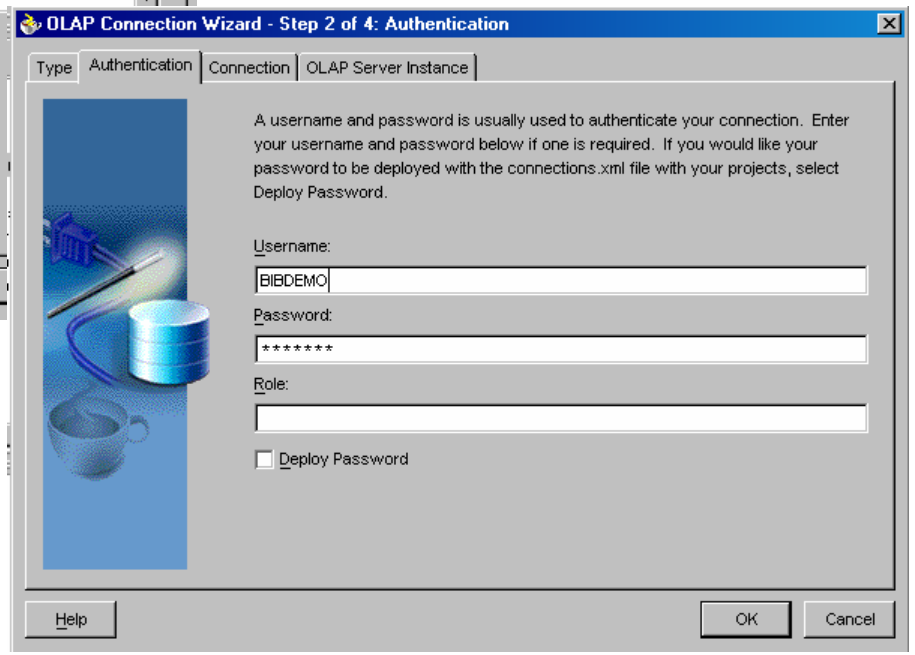


- **Container for Business Intelligence Objects**
- **References information needed to connect:**
  - ❑ **to Oracle 9i OLAP**
  - ❑ **and the BI Beans Catalog.**
- **<u>Design Settings</u> - Lets you view and edit settings in your BI Designer object**
- **<u>Run Settings</u> - Lets you view and edit settings in your BI Configuration file**

Connection Wizard

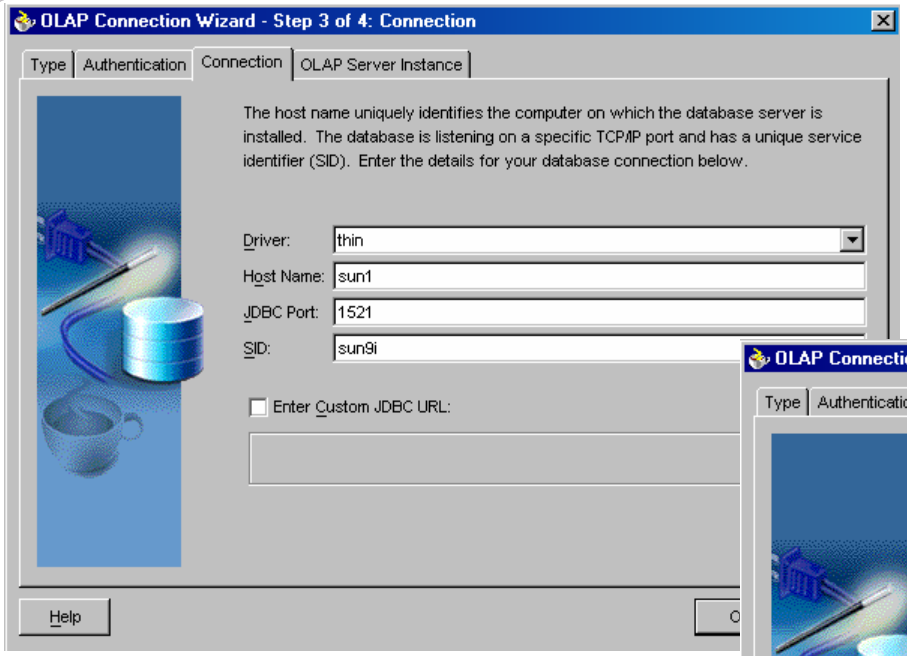


Walks you through creating an Catalog Connection

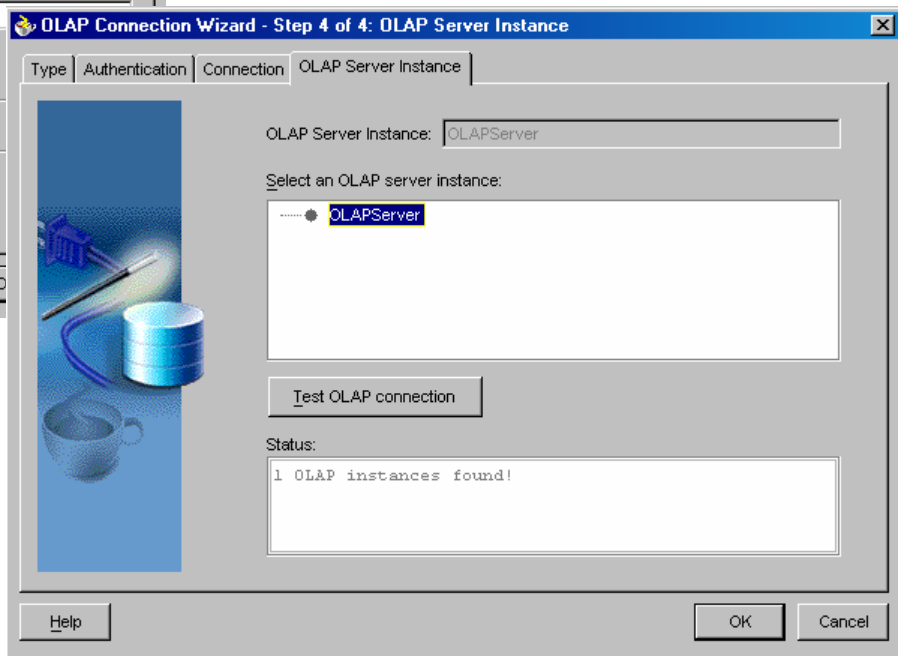


- **Define Connection Name and Type**
- **Login and Password**

Connection Wizard



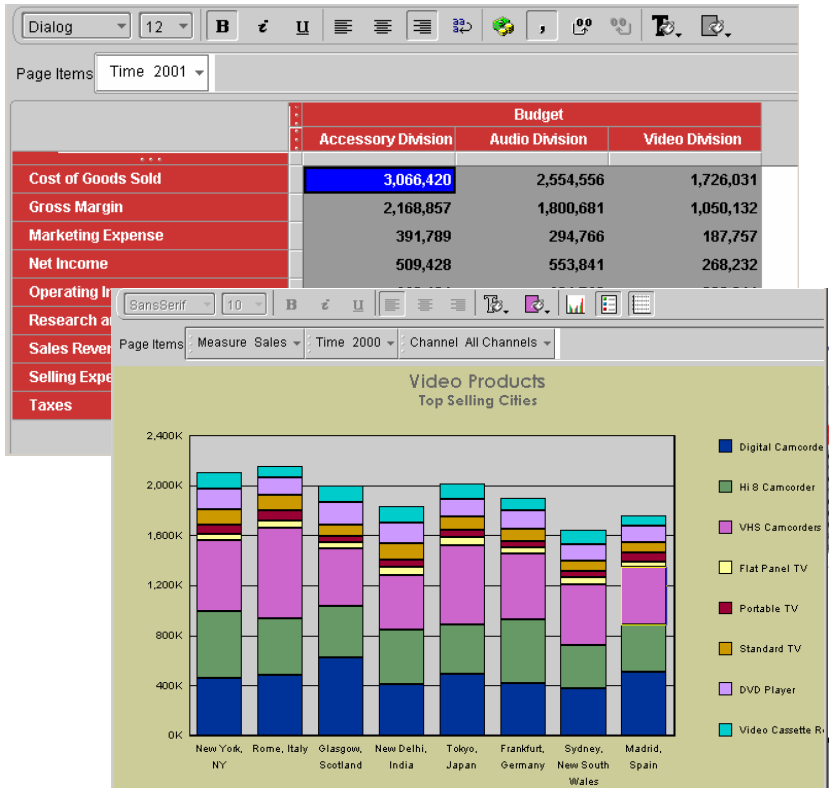
- **Specify data source.**



- **Select and Test OLAP Connection**

Presentation Beans

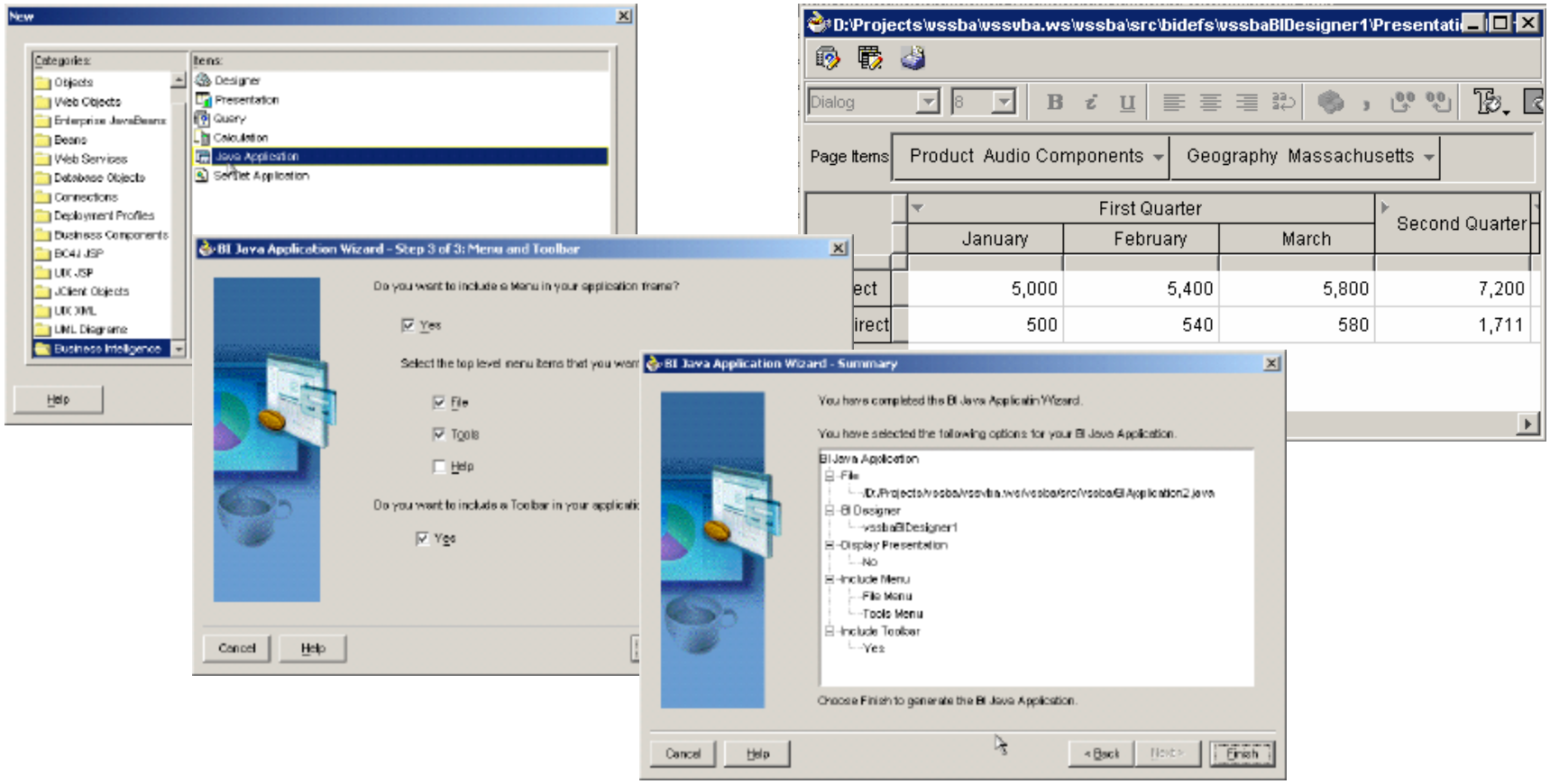
- Provides common user interface across Oracle BI products
- Translate UI gestures into OLAP events
- Graph
  - Over 50 graph types
  - Can modify appearance
- Crosstab/Table
  - Cell level formatting
- View toolbar enables simple access to formatting capabilities
- Customers: Discoverer, Reports, Portal,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



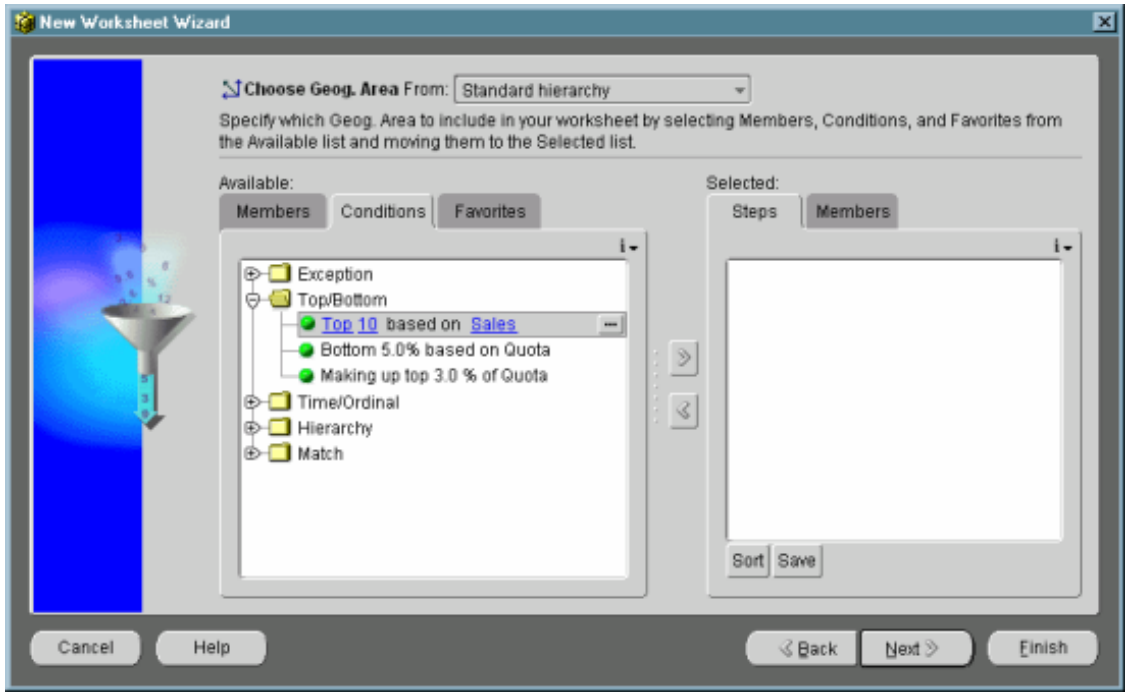
Business Intelligence Wizards

- **Specialized Wizards Built into JDeveloper 9i**
  - **Connection Wizard**
  - **Calculation Wizard**
  - **Query Wizard**
  - **Presentation Wizard**
  - **Java Client Application Wizard**
  - **Servlet (JSP) Application Wizard**

JDeveloper BI Wizards

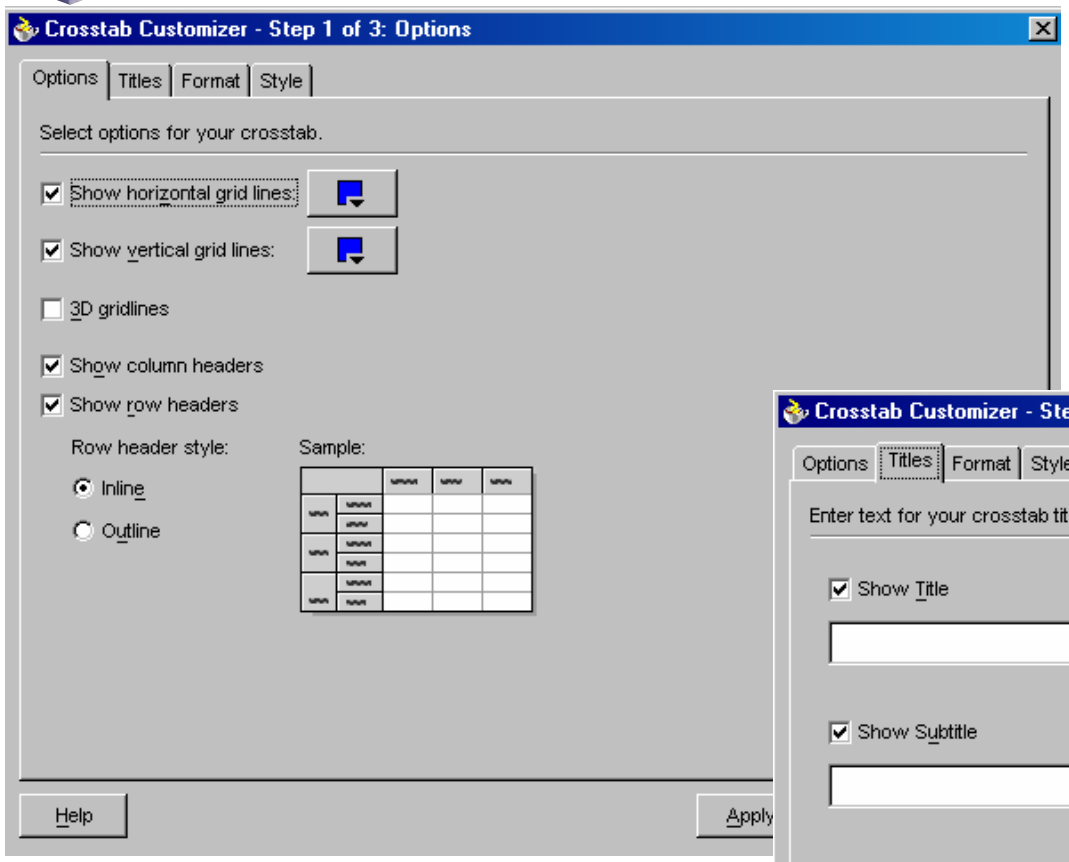


Query Builder



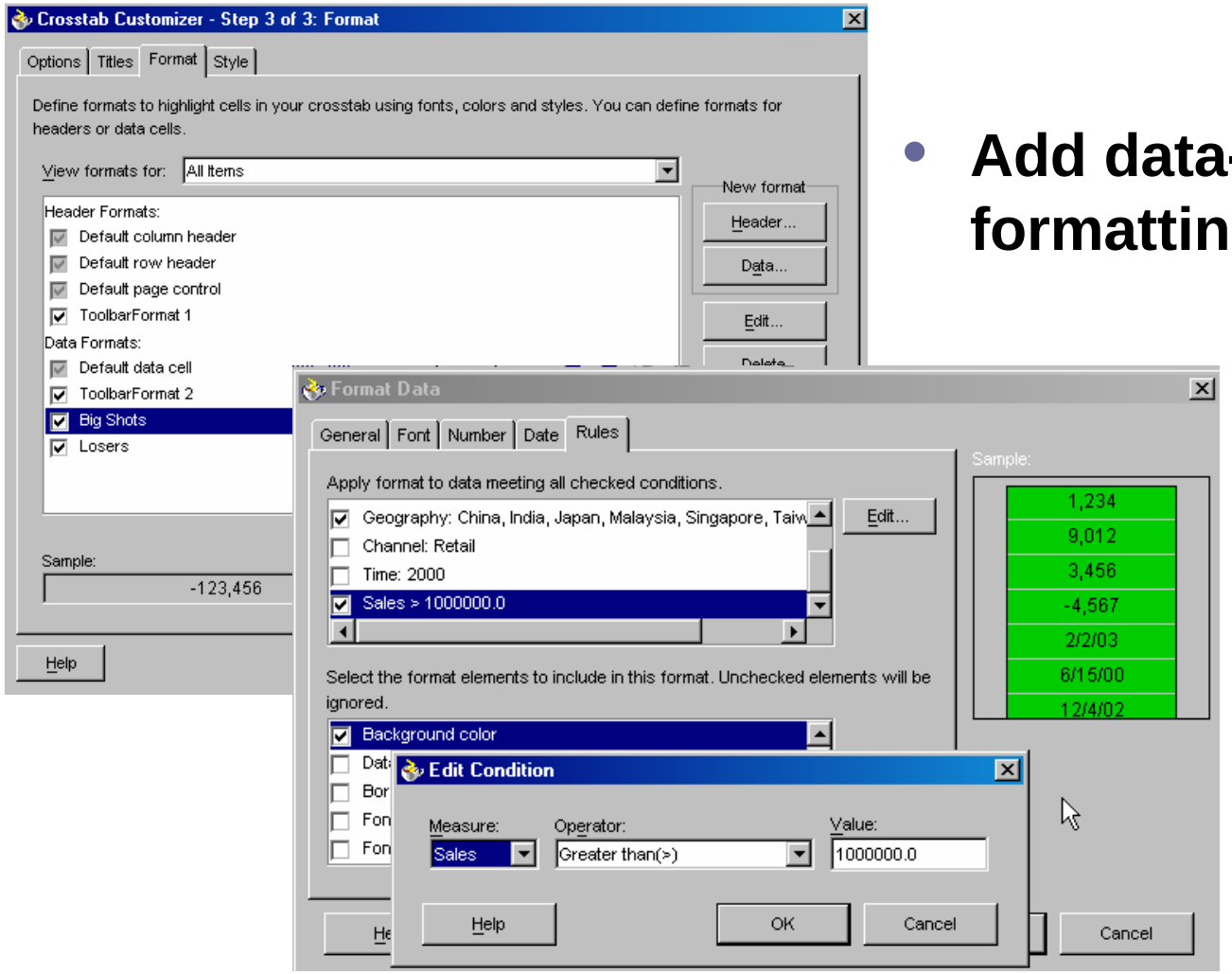
- **"Brains" behind the presentation beans**
  - ❑ **Data provider**
  - ❑ **Data navigation**
  - ❑ **Data selection**
- **QueryBuilder customizer**
  - ❑ **Enables end user to specify advanced queries using business terms - not SQL**
  - ❑ **Save favorite selections**

Customizer



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

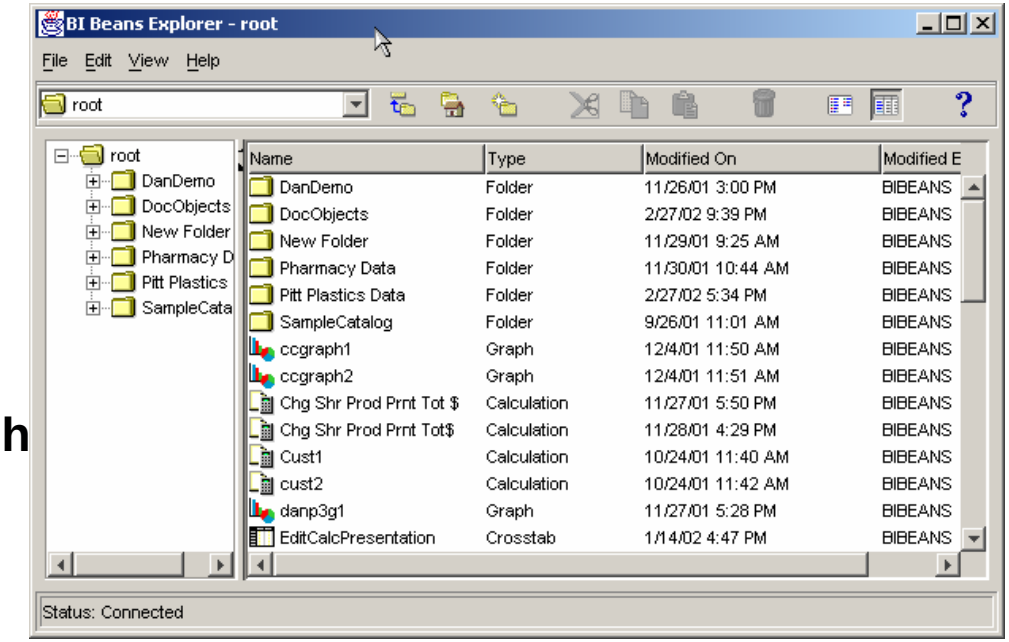
Customizer



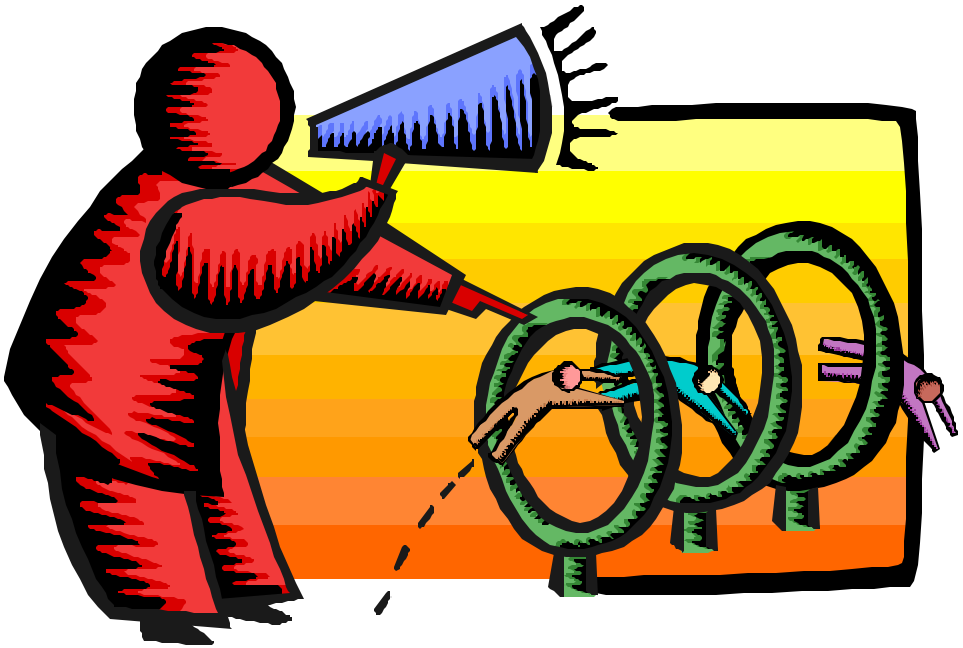
- **Add data-driven formatting.**

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

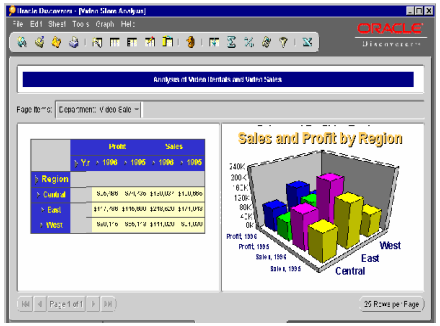


Discoverer Specifics

- **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**

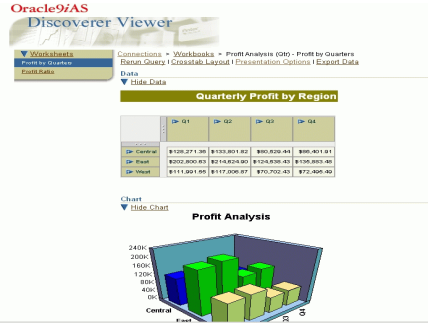
Three Deployments of Discoverer

Discoverer Plus



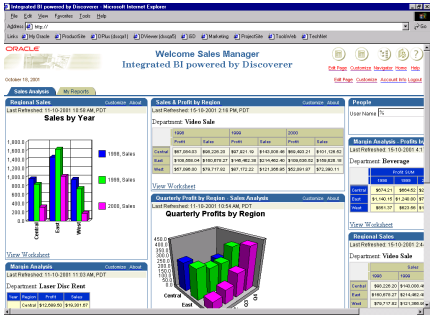
Power user tool
Creates new workbooks
Runs via applet

Discoverer Viewer



Casual user tool
Existing workbooks
Launched from Browser
Zero footprint

Discoverer Portlets

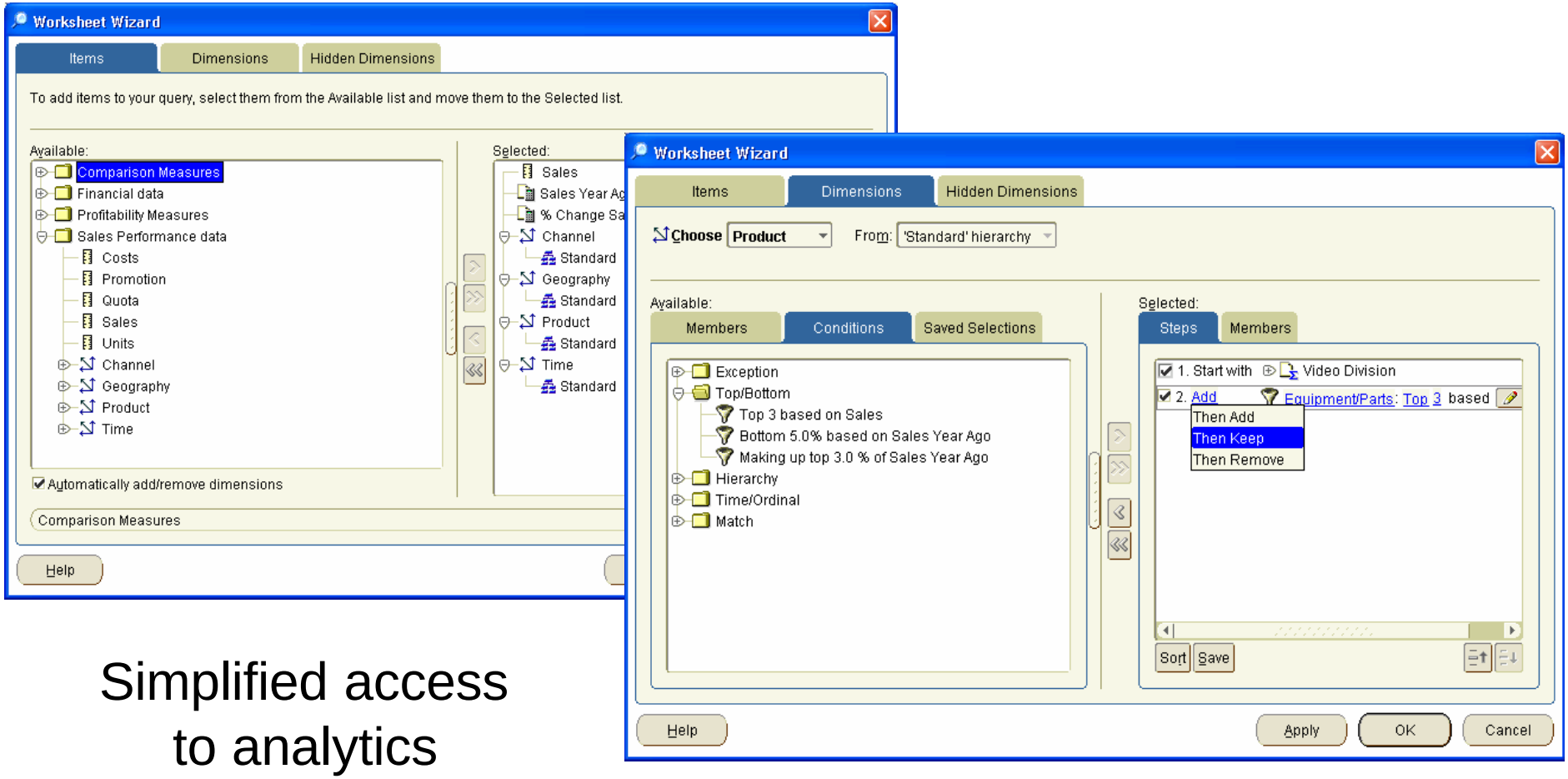


Casual user tool
Existing workbooks
Part of Portal
Launches Viewer
Zero footprint

Discoverer Development Themes

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

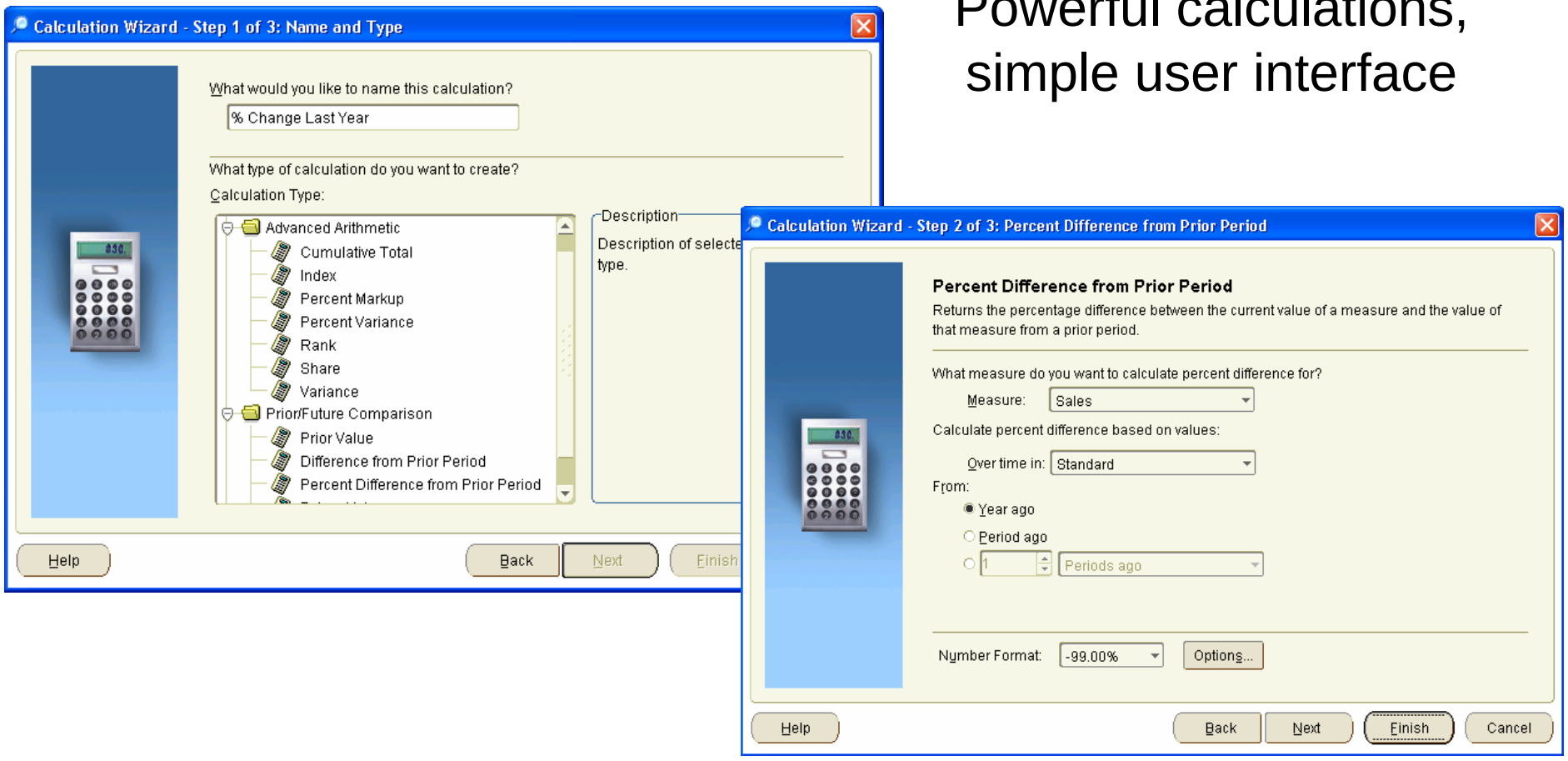
Query Building



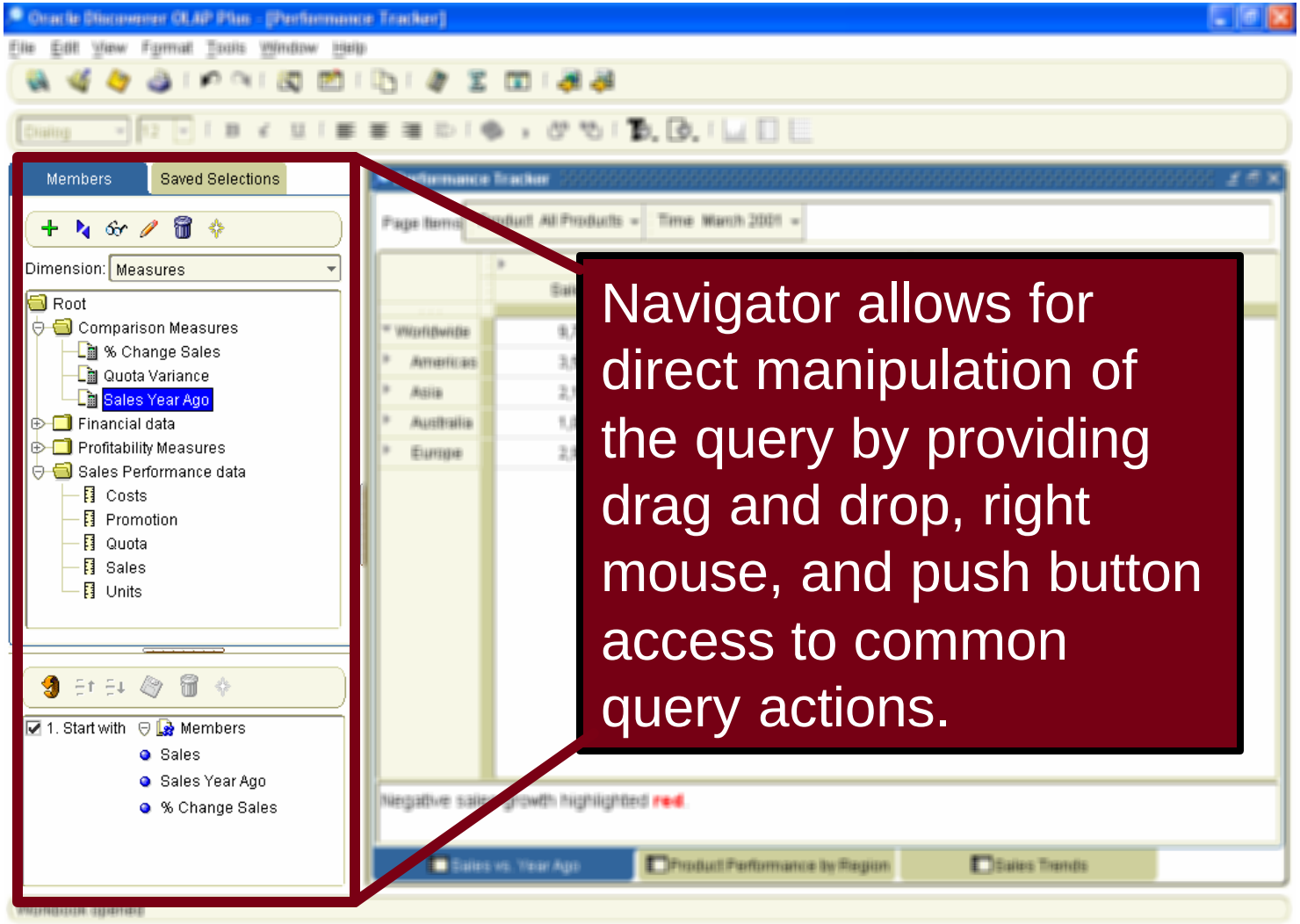
Simplified access to analytics

Custom Calculations

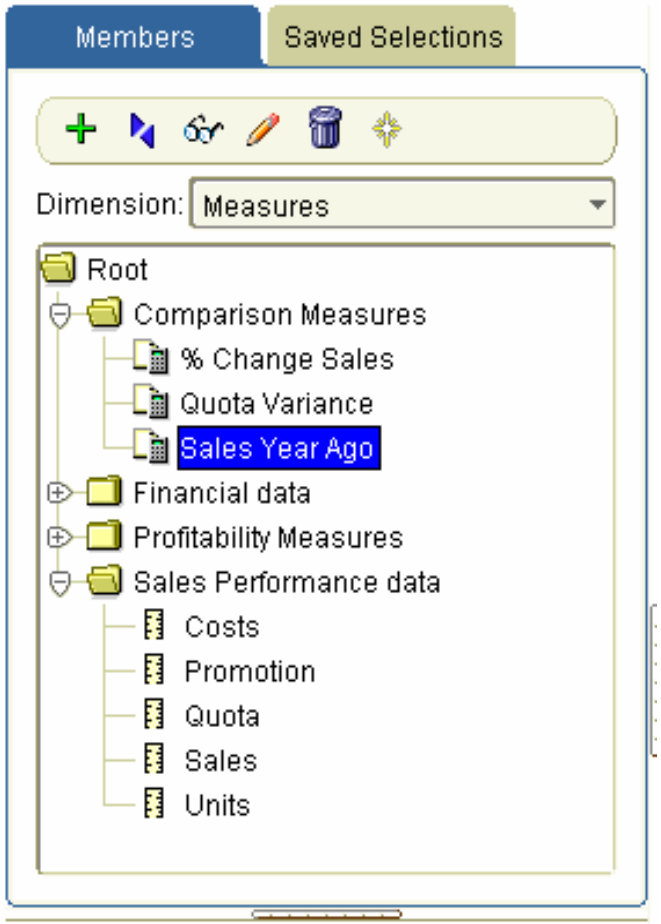
Powerful calculations, simple user interface



Direct Manipulation

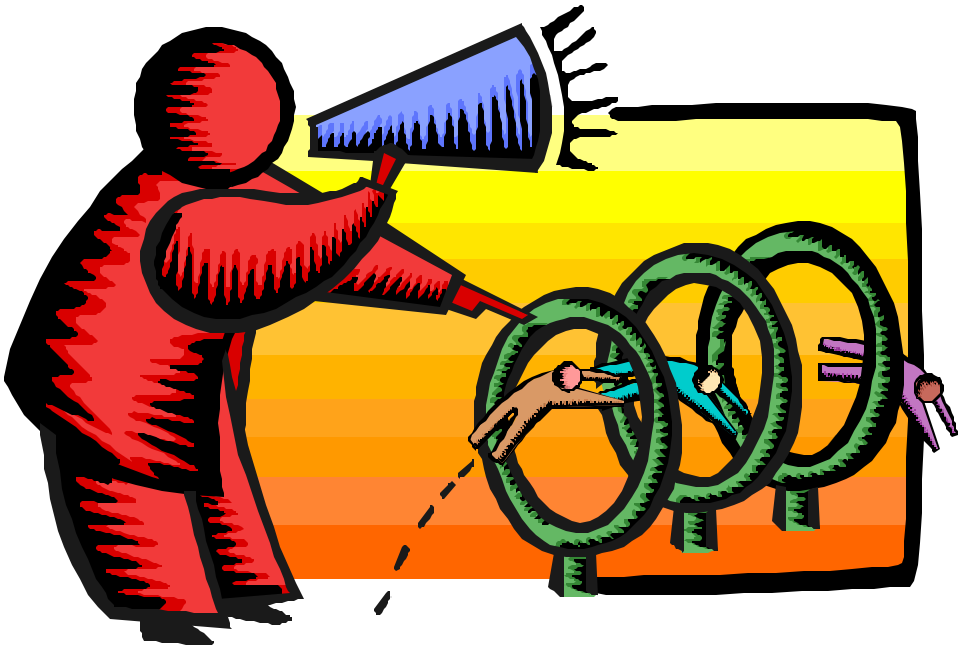


Navigator – Member Selection



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

Demonstration of Discoverer



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**

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

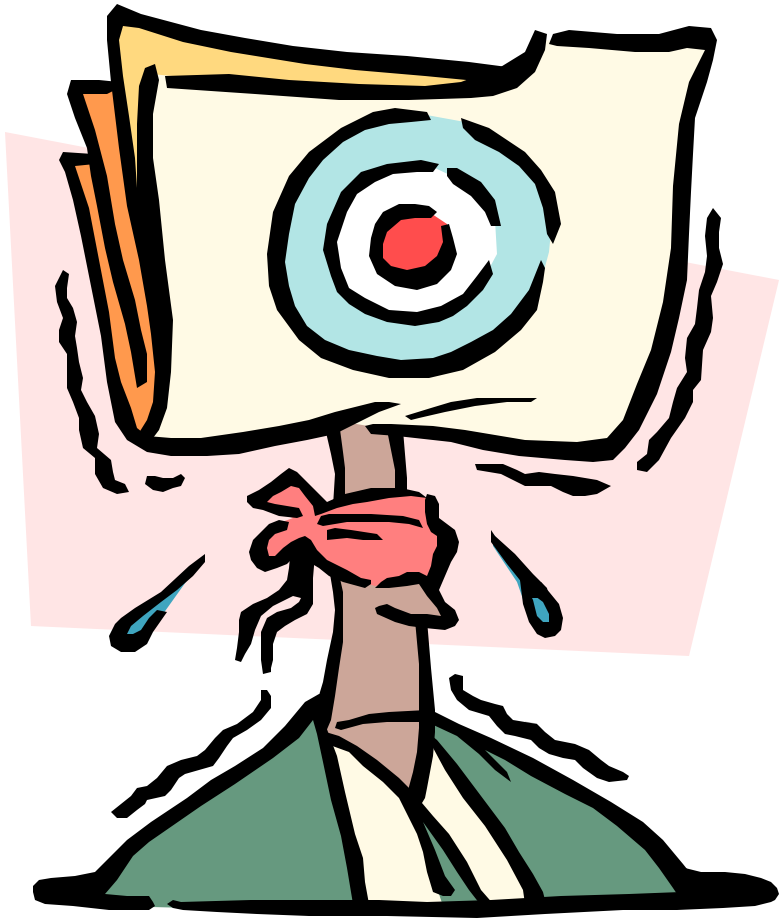
Discoverer

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

Enterprise Planning and Budgeting (EPB)

- **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?



Discoverer 10g or Bi Beans – Which Is Right for You?

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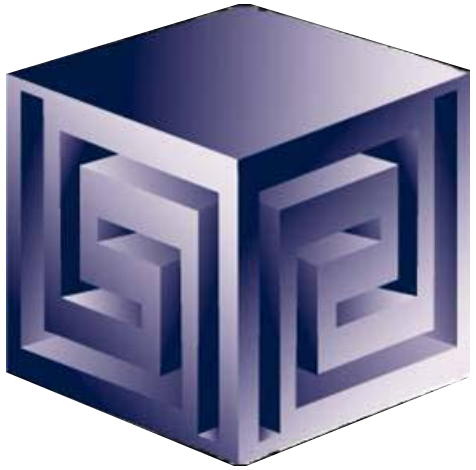

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