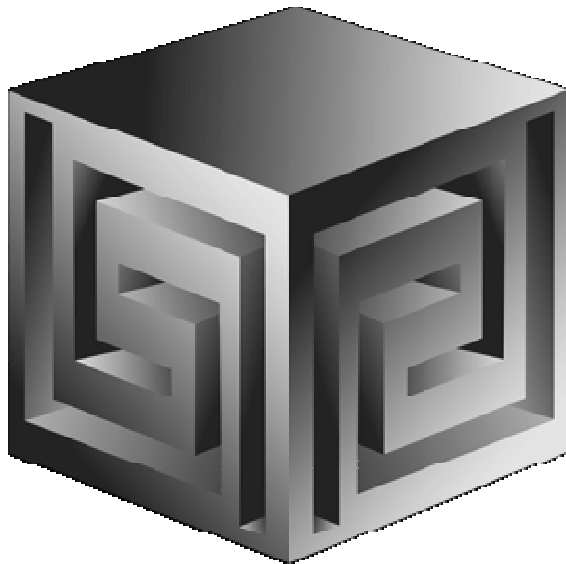


Business Intelligence for Everybody

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?

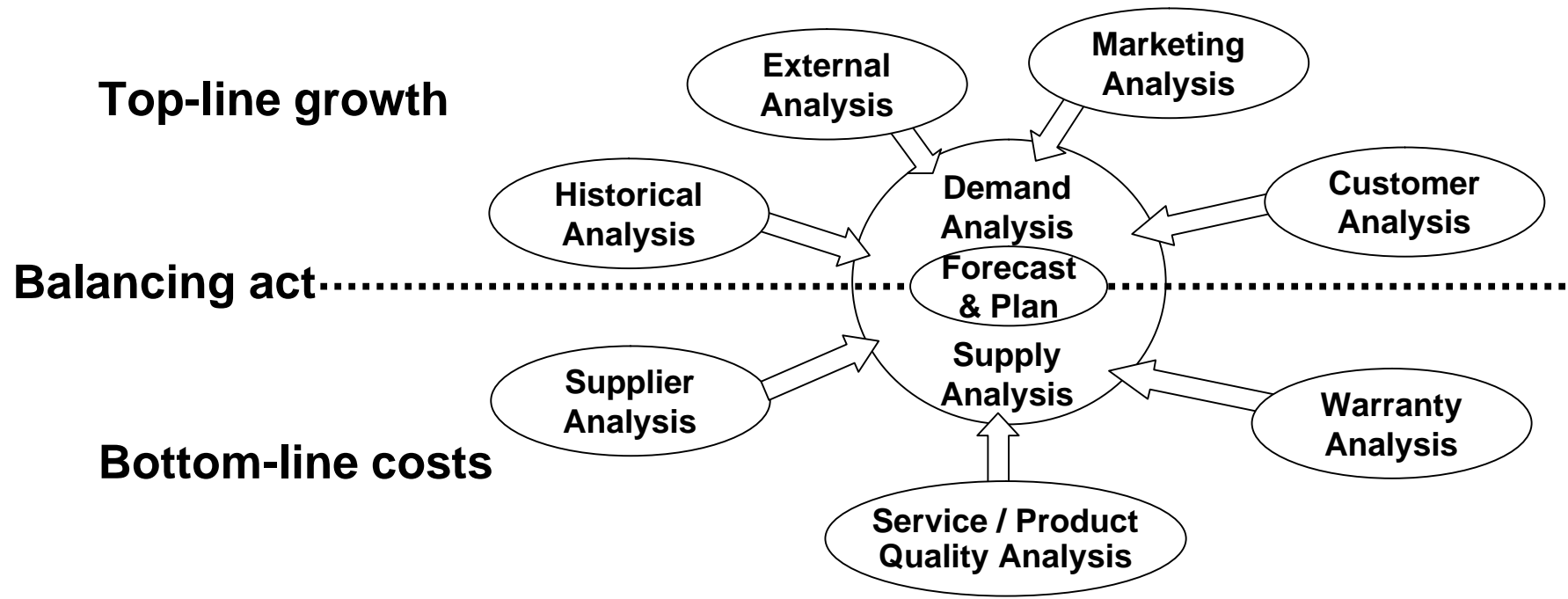
- **Dan Vlamis, President of Vlamis Software**
 - ☐ **Developer for IRI (former owners of Express)**
 - ☐ **Founded Vlamis Software in 1992**
 - ☐ **Beta tester and early adopter of Oracle OLAP**
 - ☐ **Expert speaker and author**
 - ☐ **“Techie” on OLAP DML**
 - ☐ **Recognized expert in Express and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



Agenda

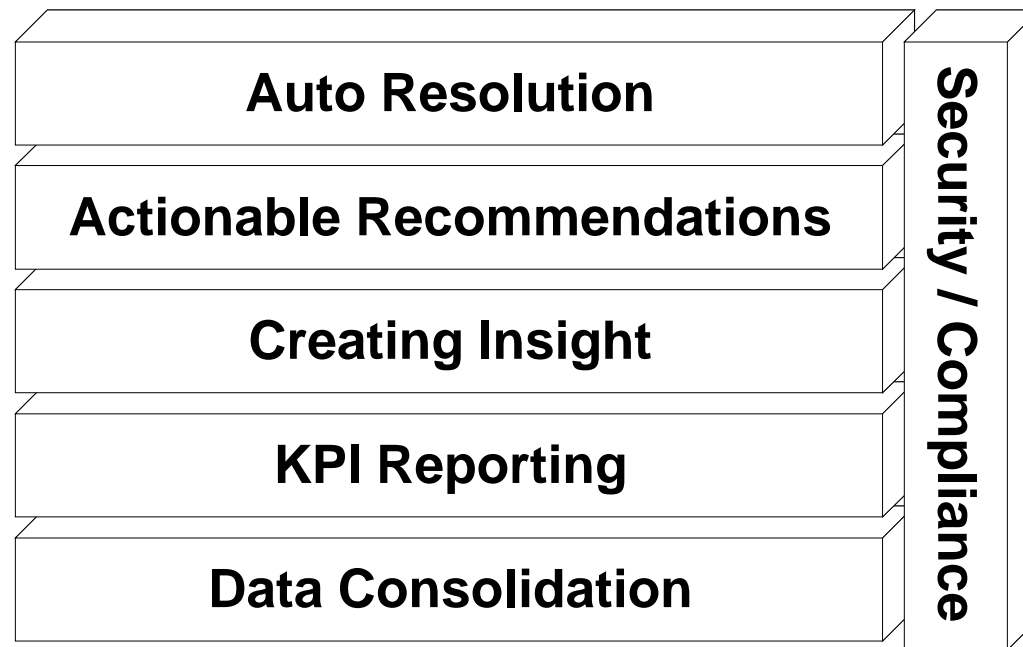
- **Background on BI – Why important?**
- **What are the parts of Oracle BI?**
- **How does Oracle OLAP fit in?**
- **OLAP Cubes and Analytic Workspaces**
- **Front-end options**
- **Case studies of Oracle OLAP in the "real world"**

Why is Business Intelligence Important



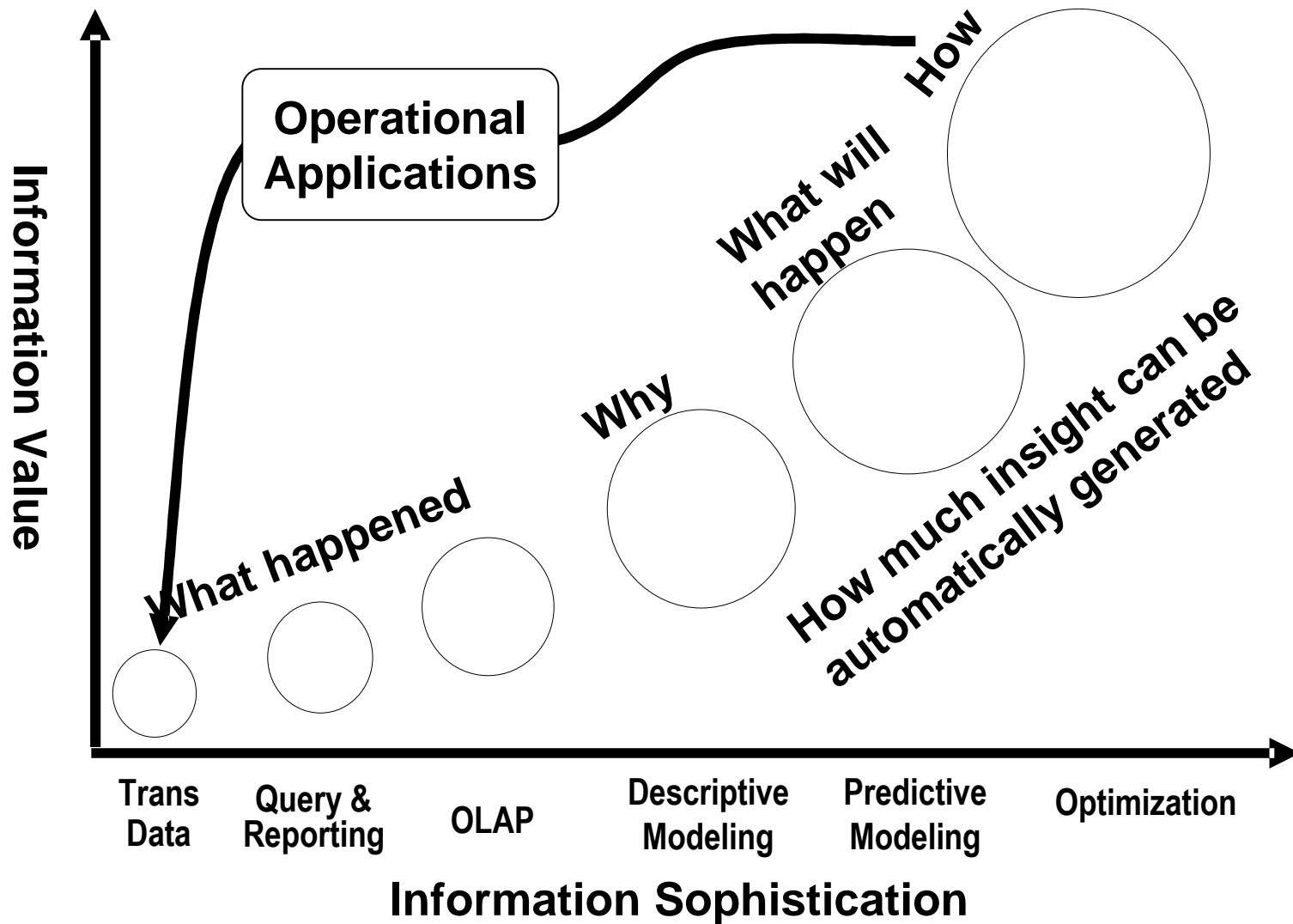
- The **ideal goal** of Planning and Forecasting in any organization is to balance the Demand-side with the Supply-side
- Business Intelligence is an **integral part** of Planning and Forecasting
- Gain **sustainable competitive advantage** with BI
- Oracle **delivers** this capability via its integrated BI Stack

Information Maturity Model



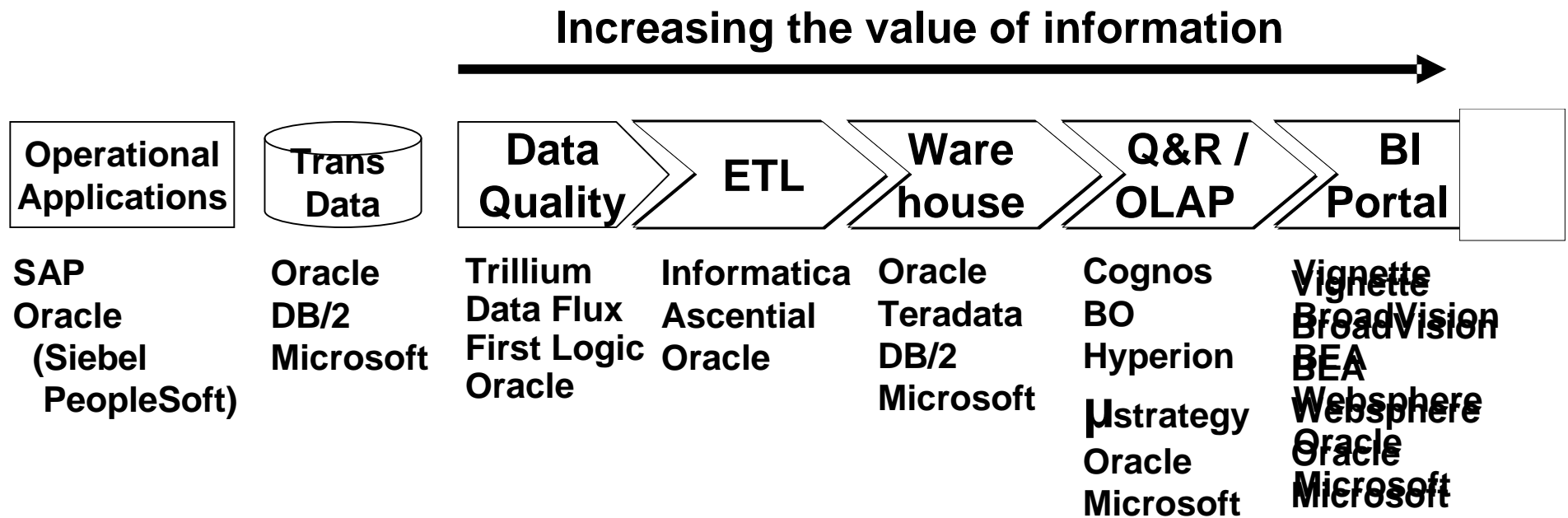
Business Intelligence and Business Integration from Oracle can help your organization securely move up this Information Maturity Model.

Return on Information



BI Today: Typical Organizations

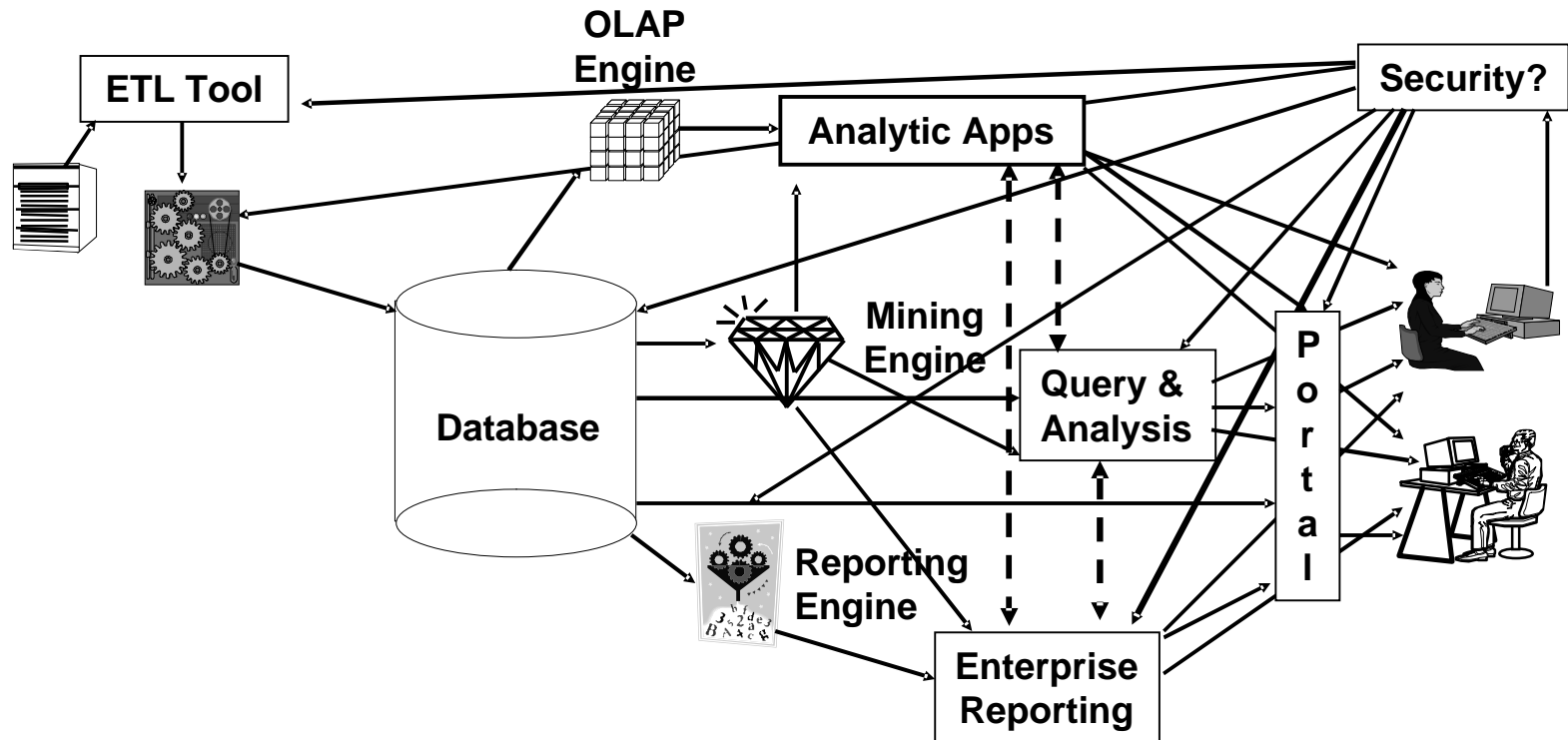
Access and dissemination of Historical Information



Best of Breed or Non-integrated Silos?

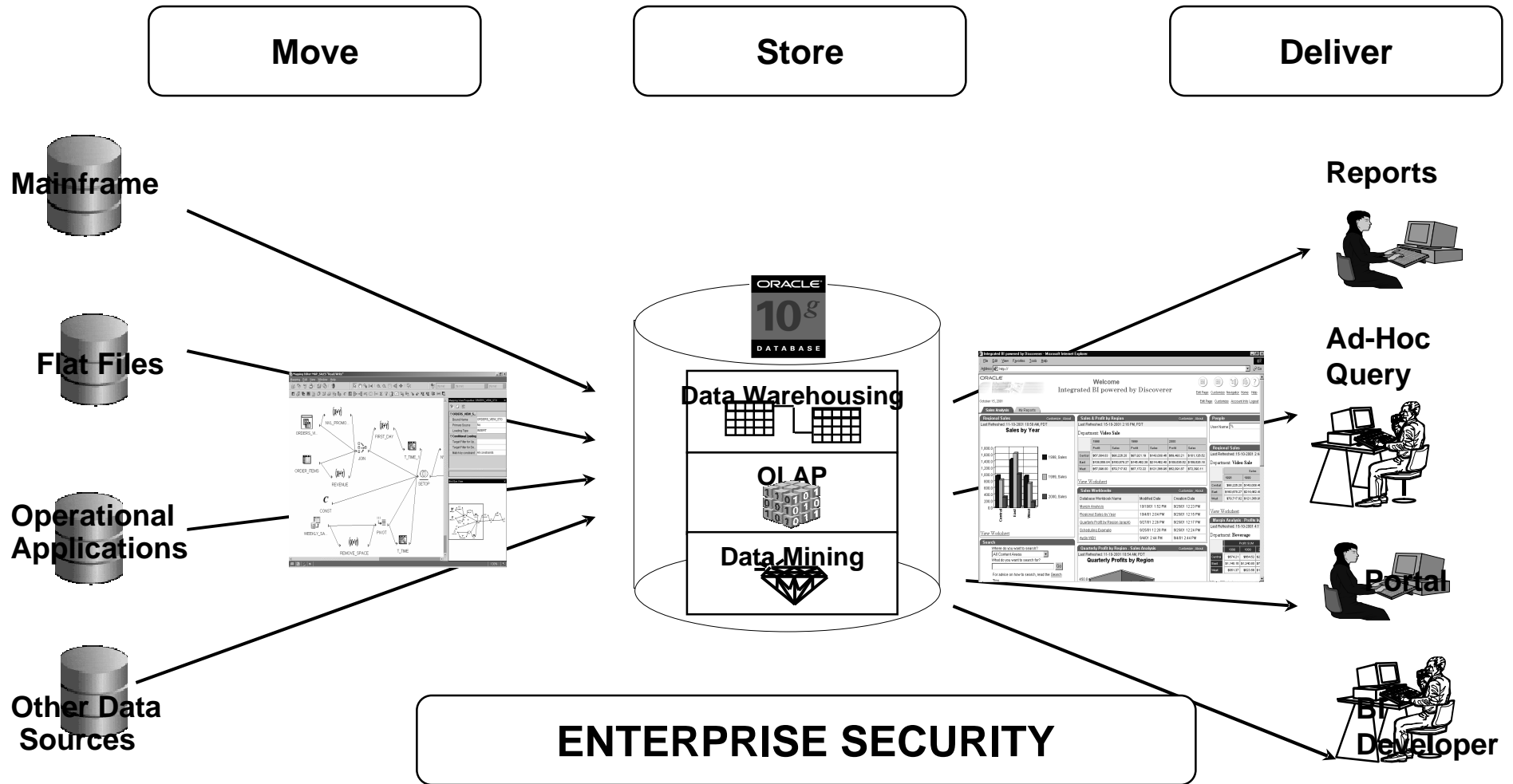
How did we get here?

Multi-component, Non-integrated



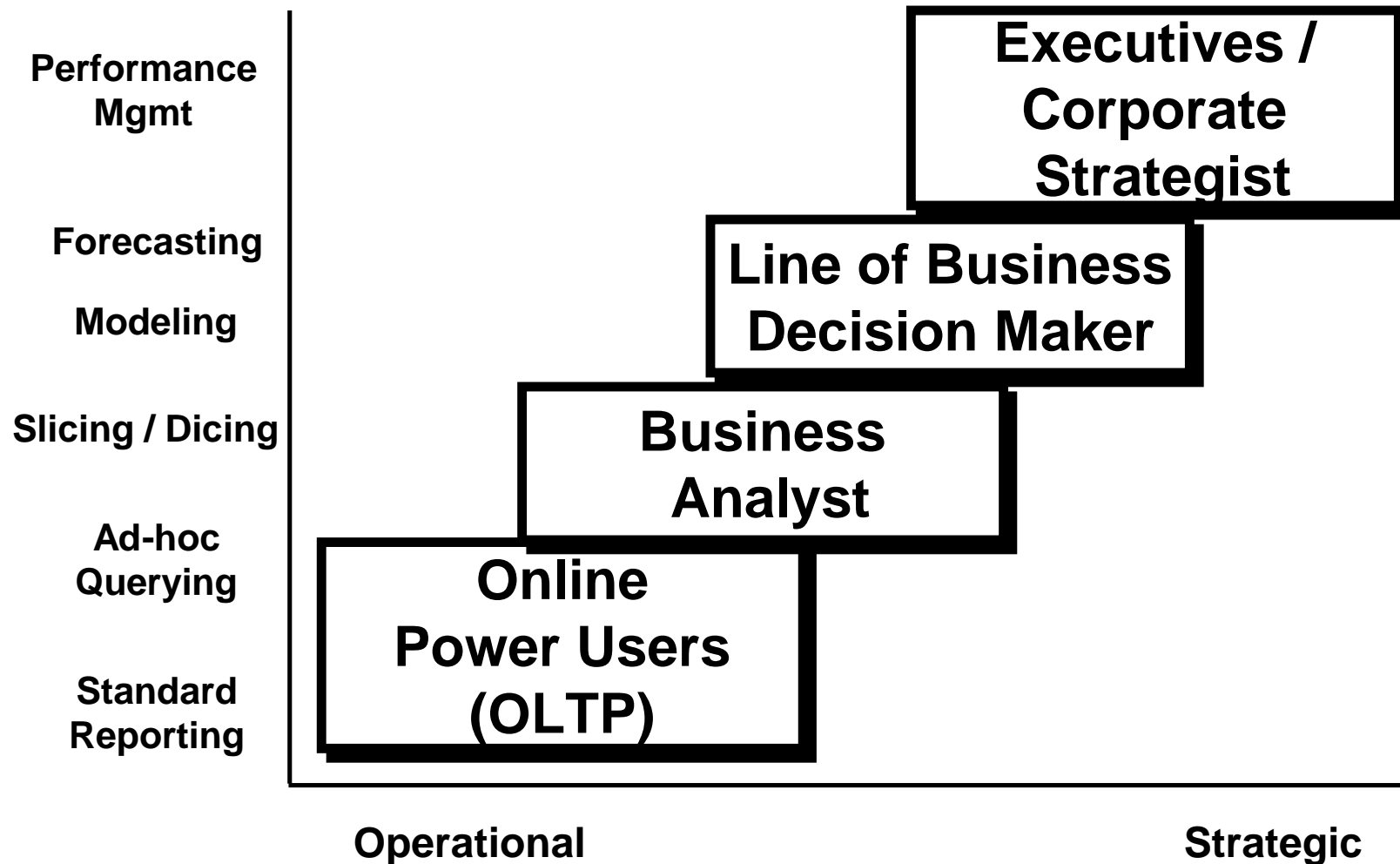
- Decreasing ROI
- Maintenance complexity/costs
- Hurdles to next step

The Complete Oracle Solution



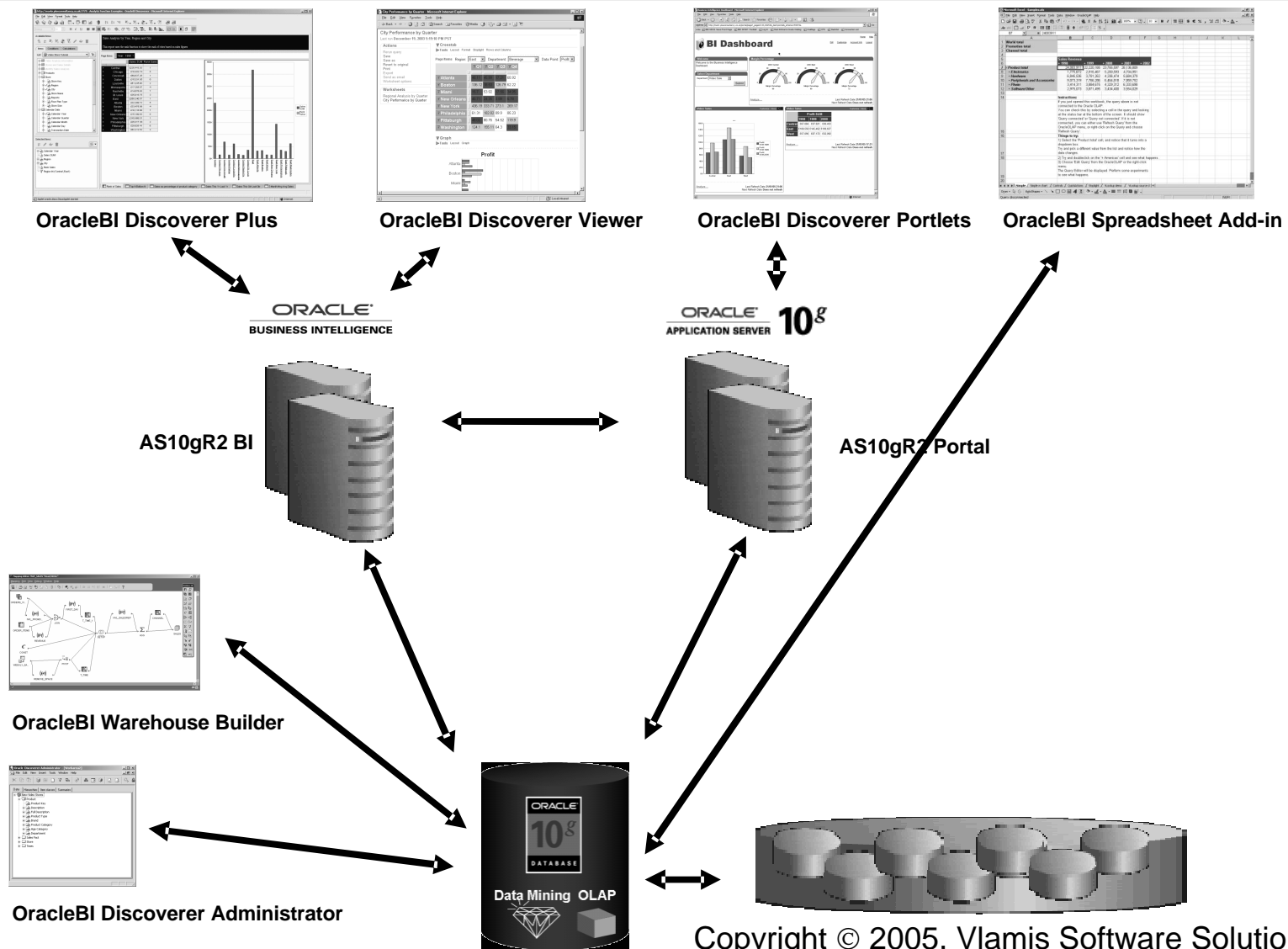
ORACLE®

Enterprise BI Solution for Everyone





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 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**



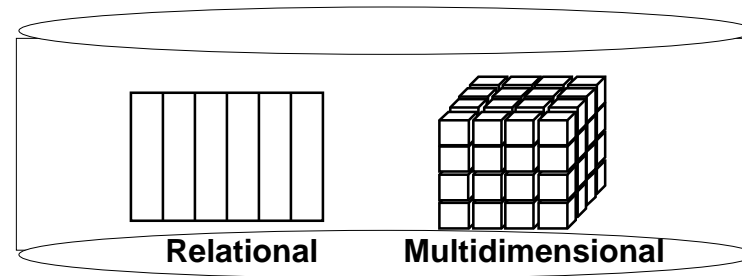
OLAP Option – High-level View

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

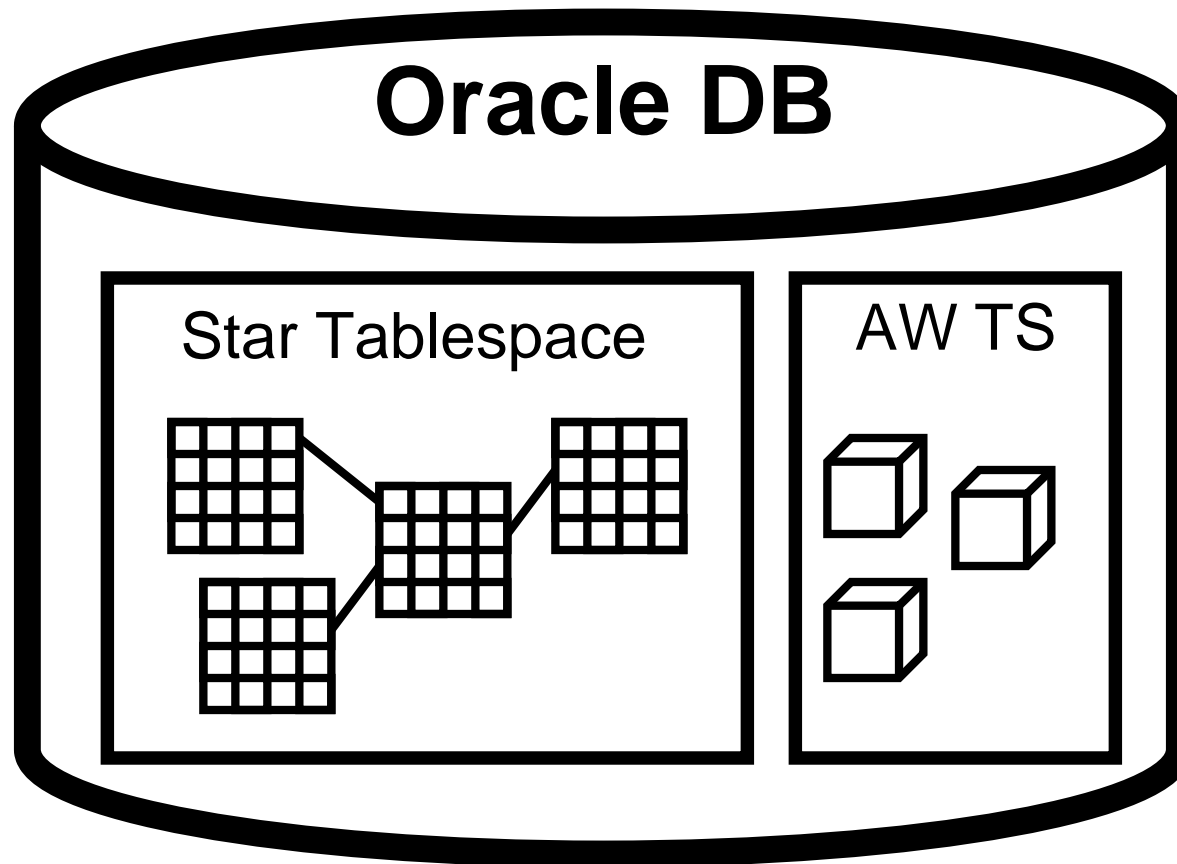


ROLAP vs. MOLAP

- 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?

Oracle Enterprise Manager Console

File Navigator Object Tools Configuration Help

ORACLE Enterprise Manager

GLOBAL

GLOBAL_AW

Tables

AW\$GLOBAL

Indexes

Materialized View

Partitions

Triggers

DATE_TAB

Indexes

Views

Synonyms

Sequences

Clusters

Source Types

User Types

HR

General Constraints Storage Options LOB Storage Statistics

Name: AW\$GLOBAL

Schema: GLOBAL_AW

Tablespace: GLOBAL_AW

Table: ☒ Standard ☐ Organized Using Index (IOT)

Columns

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:

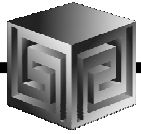
Name	Cube
SALES	SALES_CUBE
UNITS	SALES_CUBE
BASE_COST	SALES_CUBE
COST	SALES_CUBE
BASE_PRICE	SALES_CUBE


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

$$\underline{2} + \underline{1} * (3) + \underline{1} * (3 * 3) = 14$$

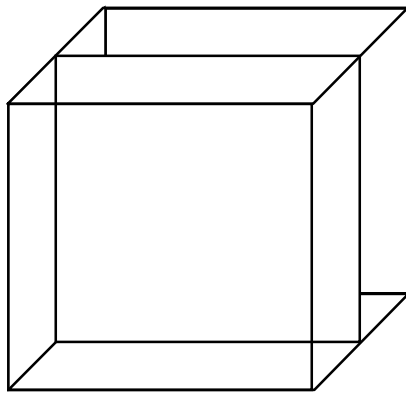

Diagram illustrating a 28-element array (indices 0 to 27). The element at index 14 is highlighted with a red underline. Curved arrows indicate a wrap-around from index 7 to 8, 15 to 16, and 27 to 24.

"How Does Express Really Work Anyway" for details.

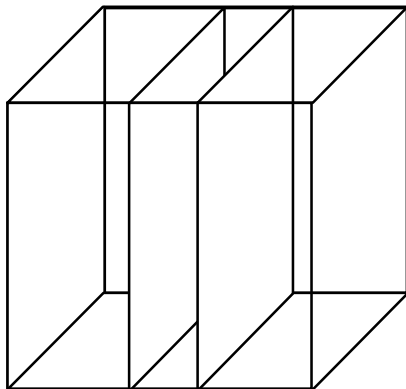


OLAP AW Stores Data in Cubes

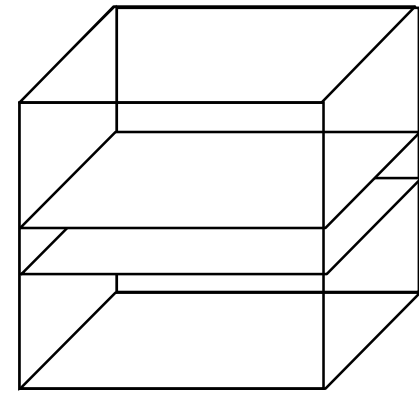
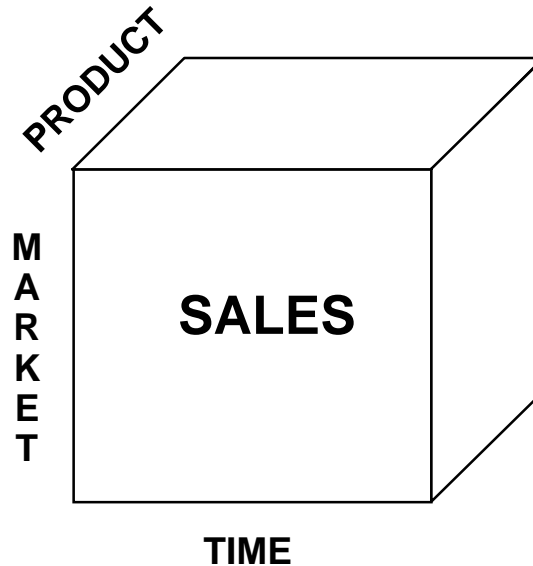
Fast Flexible Access to Summarized Data



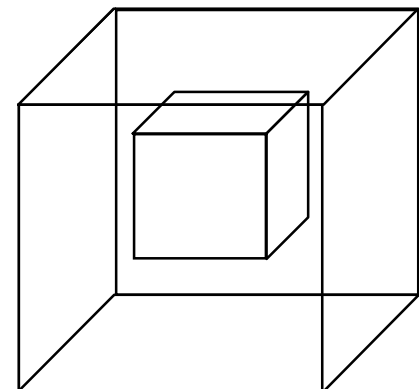
Product Mgr. View



Financial Mgr. View



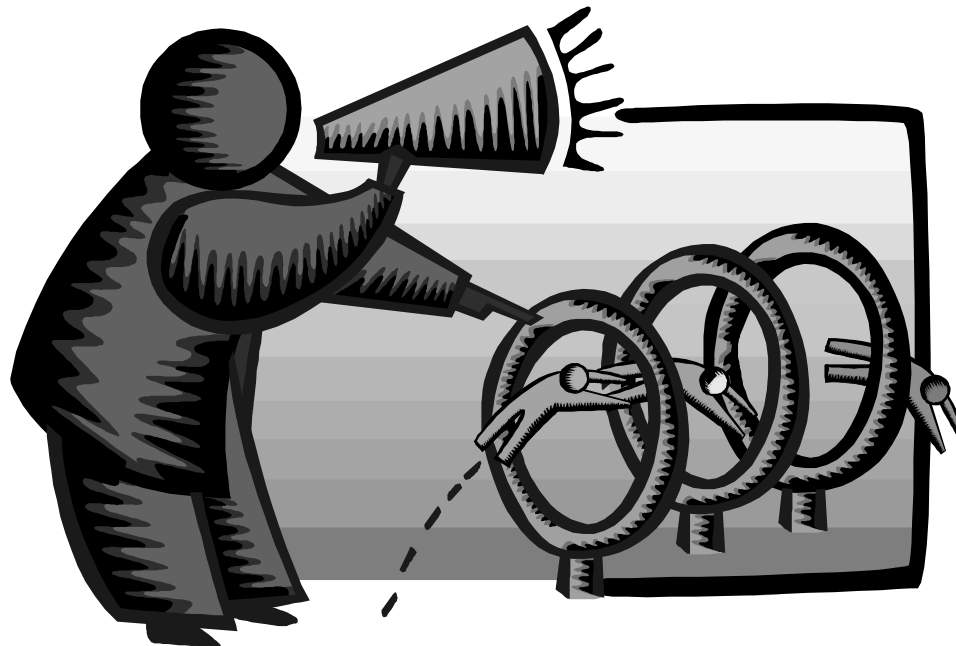
Regional Mgr. View



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**



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

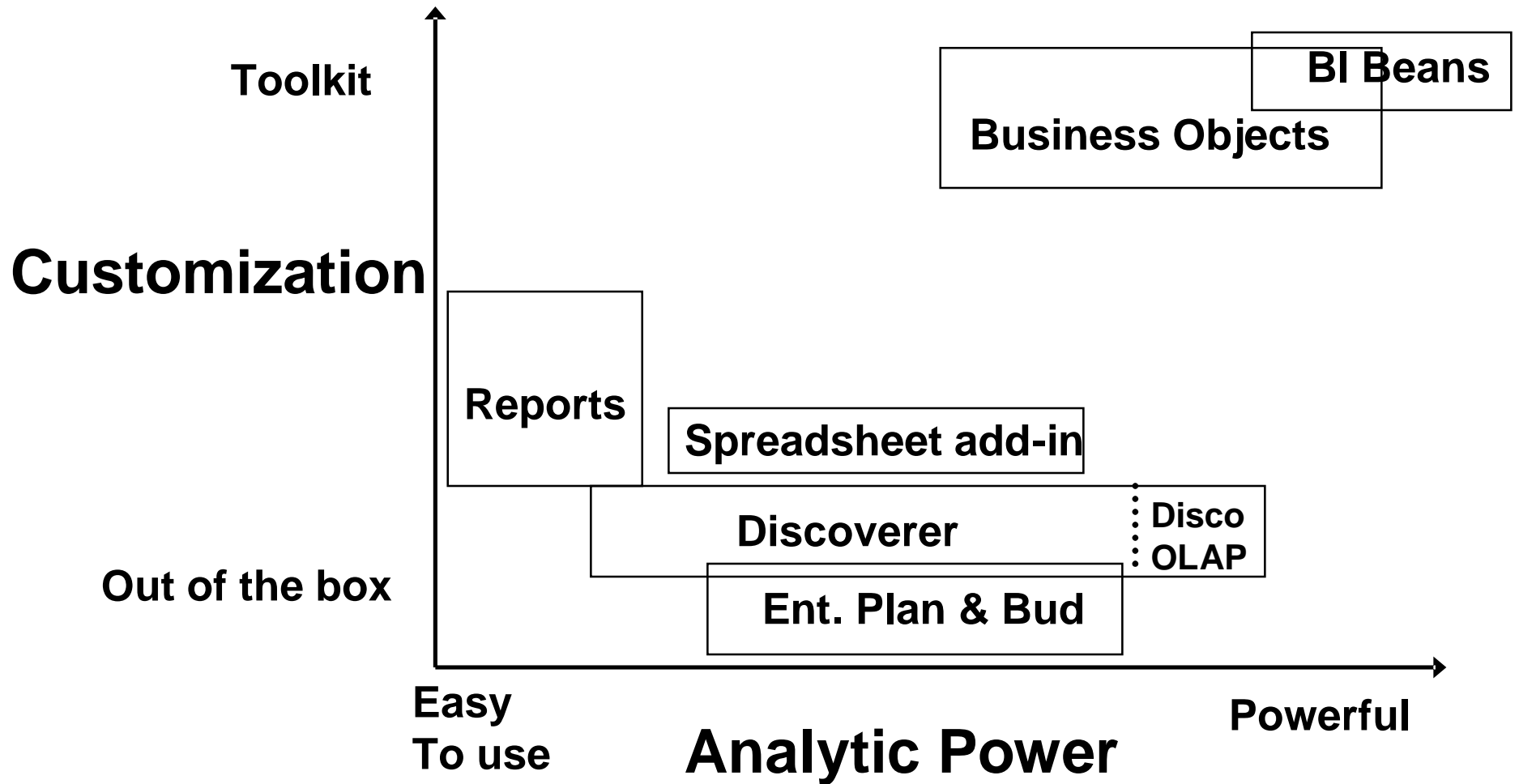


Getting the Data Out

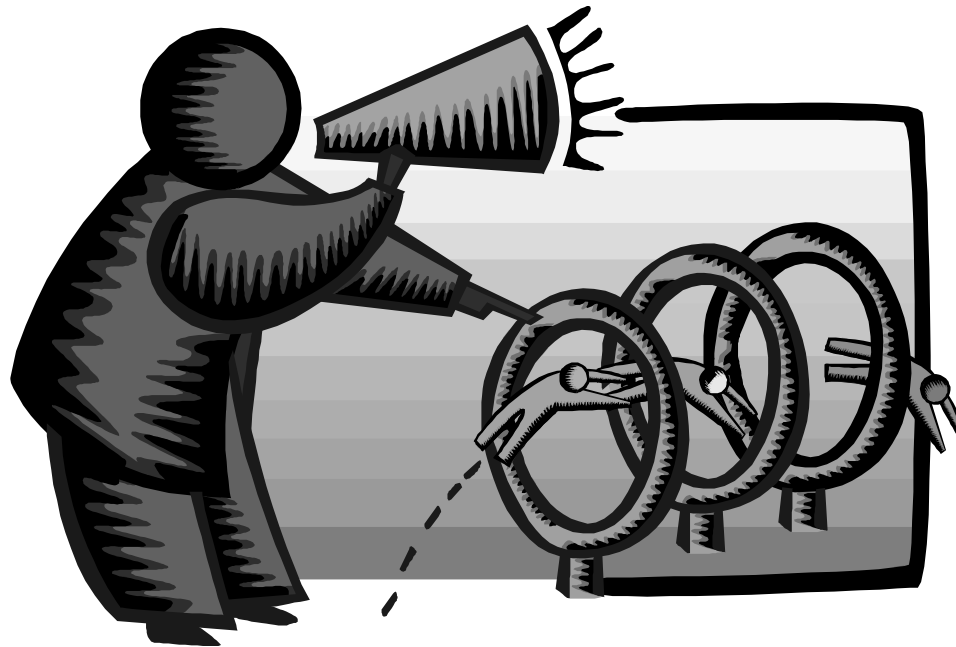
- **Once the Data is in OLAP how do we get the data out?**
- **Alternatives**
 - ☐ **BI Beans applications (Custom or pre-built)**
 - ☐ **Discoverer**
 - ☐ **Oracle Reports**
 - ☐ **SQL Access from any SQL tool**
 - ☐ **Spreadsheet Add-in**
 - ☐ **Any except Spreadsheet add-in can be in a portal and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



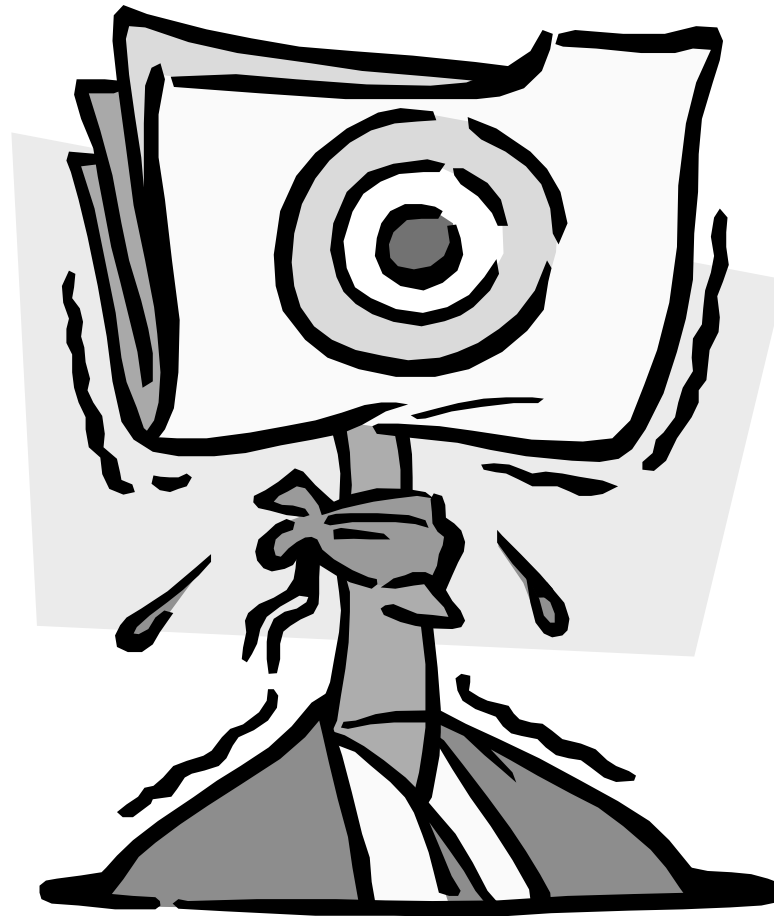
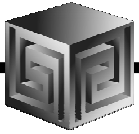
Choices for Viewing Data



Demonstration of BI Application



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**

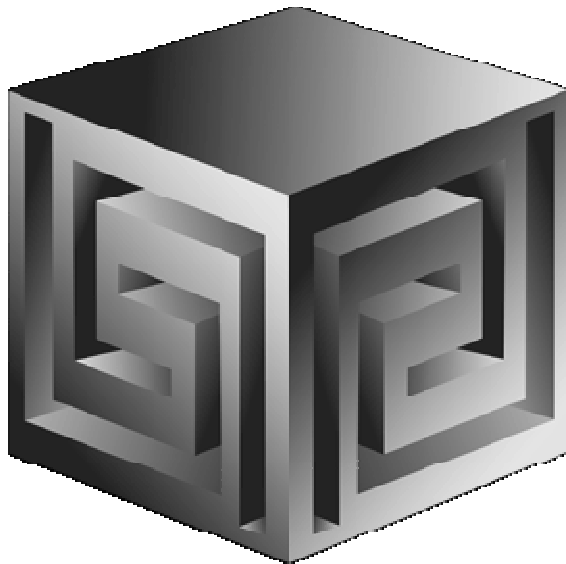


Managing a BI Project

- **Involve end-users early on**
- **Prototype, pilot, then phase 1**
- **Recruit "champion" users**
- **Lead from user community, not IT**
- **Develop in phases**
- **Provide value early on**
- **Keep it simple (at first)**
- **Need forum for users to share ideas**
- **Provide user guide with user's data**

Business Intelligence for Everybody

October 2005



Dan Vlamis

dvlamis@vlamis.com

Vlamis Software Solutions, Inc.

816-781-2880

<http://www.vlamis.com>

Copyright © 2005, Vlamis Software Solutions, Inc.