Integrating people, processes, and technology!™

Apps Reporting—How Can I Get What I Need?

Presented by David Fuston
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FMT Systems Summary

- FMT Systems is a solutions company that delivers complete business integration and process management solutions allowing companies to effectively and efficiently integrate their people with business processes and technology. Our solutions work in unison with your enterprise applications, projects, and people. The value that our products and services can bring to your enterprise project and bottom line include:
  - faster ROI on current and future investments in technology and people
  - reduced implementation time
  - increased worker productivity. resulting from streamlining the training/education process, increased communication, accessibility to the real-time information where and when needed
  - more efficient implementation of organizational transition initiatives
  - increase collaboration on process efficiencies within and outside of an organization
  - fewer delays in decision making

David Fuston – Short Bio

- Technical and functional consultant since 1989 with experience in applications development, IT management, and financial controller positions for Fortune 500 and World 200 companies.
- Oracle Beta Tester since 1997 for numerous programs, such as Applications 11i, Financial Analyzer 6.x, 9iAS Discoverer, and Warehouse Builder
- Provide staff augmentation for Oracle Applications 11i financial (GL, AP, AR, FA, BIS, DBI) implementations, including specializing in data warehousing, business intelligence and reporting
- Officer, speaker, and sponsor in OAUG, BI/DW SIG, NorCalOAUG, OracleWorld, AppsWorld, IOUG, ODTUG, NCOAUG, SCOUG
- Teaching and training role started in 1984 as a manufacturing plant “zero defects” trainer utilizing the Phillip Crosby Quality College methods.

BI/DW SIG of OAUG announces

- BI/DW SIG 2nd Virtual Conference
  - February 15-17, 2005
  - Call for Papers to be announced via OAUG & ODTUG mass emails starting Sept 15, 2004
    - Potential sponsors contact president@bidwsig.org
    - Potential speakers contact vice.pres@bidwsig.org
  - First Virtual Desktop Conference overview http://www.bidwsig.org/fall2003/
  - Virtual Conference and exhibit hall
  - Functional and technical tracks in areas of
    - Analytic Applications & Development Tools
    - Data Quality and Cleansing
    - Query & Reporting
    - Data Warehouse Design
    - Data Modeling & Analysis

Agenda

- Reporting and BI definitions
- Requirements Analysis
- IT Reporting Skill Sets
- Reporting Products Marketplace
- Oracle's Corporate Performance Management (BI)
  - BIS and DBI
  - Financial Analyzer and EPB
  - Discoverer
- Questions

Business Intelligence Definition

"Business Intelligence—The processes, technologies, and tools needed to turn data into information, information into knowledge, and knowledge into plans that drive profitable business action. Business intelligence encompasses data warehousing, business analytic tools, and content/knowledge management."

THE DATA WAREHOUSING INSTITUTE
www.dw-institute.com

The Data Warehouse Institute

http://www.dw-institute.com/marketplace/index.asp

- Administration & Operations (127) : Performance & Usage Management, Database Management, Capacity Planning, More…
- Analytic Applications & Development Tools (244) : Development Tools, Visualization Tools, Business Performance Management, More…
- Business Analytics (199) : Query & Reporting, Production Reporting, OLAP, Business Analytics Suites, More…
- Business Intelligence Services (96) : Consultants/Systems Integrators, Analytic Service Providers for Data Warehouse, More…
- Data Integration (168) : Data Quality and Cleansing, DW Mapping & Transformation, Meta Data Management, More…
- Data Warehouse Design (27) : Data Modeling & Analysis, Data Warehousing Toolsets, More…
- Information Delivery (91) : Enterprise Information Portals, Broadcasting, Wireless Data Analysis, More…
- Infrastructure (84) : Relational Database Management Systems, Multidimensional Databases, More…

Typical Environments and Reporting

Function	RDBMS OLTP	DSS or Warehouse	MDBMS OLAP
Typical Operation	Update	Report	Analyze
Analytical Requirements	Low	Medium	High
Screens	Unchanging	User-defined	User-defined
Data Level	Detail	Detail and summary	Mostly summary
Age of data	Current	Historical and current	Historical, current and projected
Data storage	Records	Records	Arrays

Typical Objects in Reporting Environment

Measures or Variables: (What?) Stores raw data or calculated data. The Base Measures are stored, numeric values. The Derived Measures are calculated, numeric values. The Descriptive Measures are used in reports to describe a dimension and are usually text values.

Base Measures: Order Non-Comp Plan Units, Order Non-Comp Retail Units, Order Non-Comp Ipack Units, Order Non-Comp Case Units

Derived Measures: Ship Total Qty Plan Units, Ship Total Qty Retail Units, Ship Total Qty Ipack Units, Ship Total Qty Case Units

Descriptive Measures: Forecast Type

Dimensions: (Who?) Structures that organize and index the data for the measures.

Time, Product, Customer, Location, Release Month Year

Typical Objects in a Reporting Environment

Dimension Values: The individual values that make up the Dimension.

Time: 1999; Quarter 1 1999; January 1999

Product: All Products, Grooming Product Line, Total Antipers & Deoderants, Aerosol Antipers & Deodorants, Other Brands,

Customer: All Customers, Total CPD Customers, AOCPD, Target

Hierarchies: The organizational structure of the dimension. A hierarchy is organized by levels which contain the dimension values. Each level is related to the level above and below it.

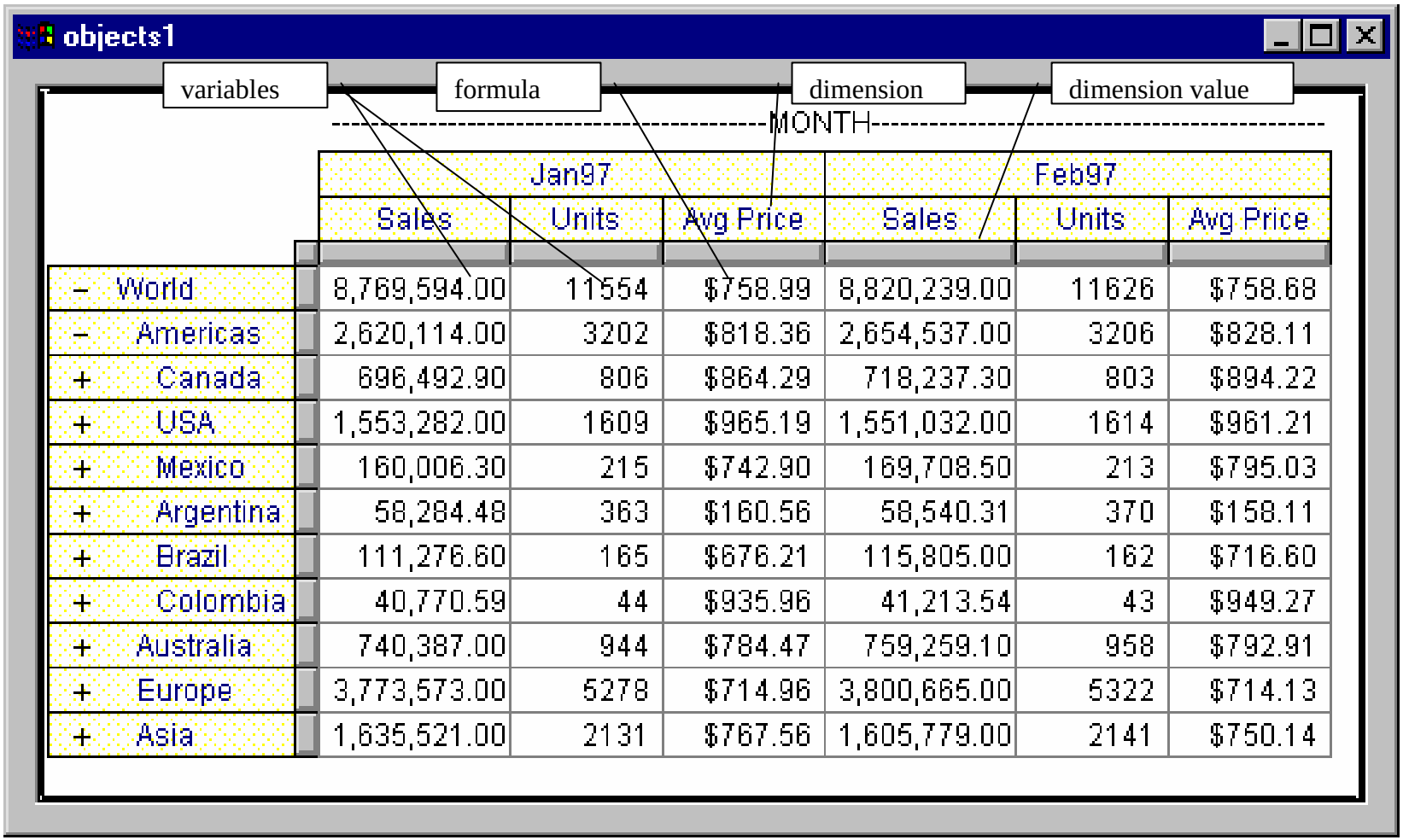
Product Standard, Customer Org Standard, Time Standard, Location Standard

Attributes: Common characteristics of dimension values that can be used as criteria in the selection process.

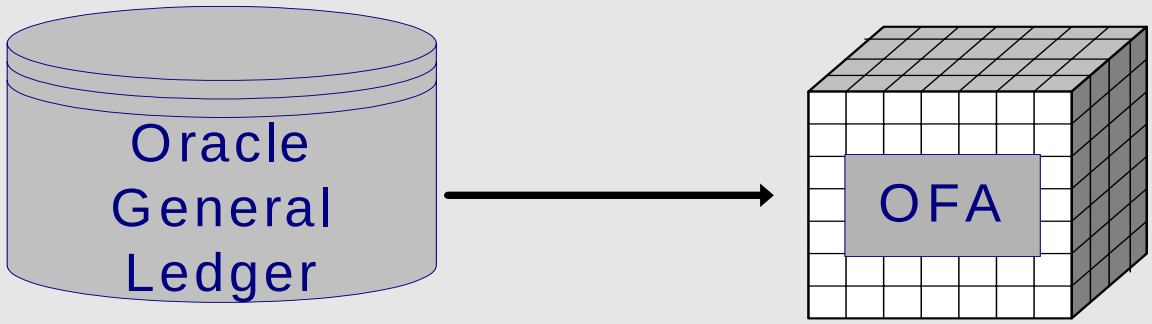
Forecast Type

Formulas: variable data calculated on the fly

Dimensions, Variables & Formulas



Star Schema Dimensions and Measures



Relational

Multidimensional

Segments	→	Dimensions
Segment Values	→	Dimension Values
Calendar	→	Time Dimensions
Rollups	→	Hierarchies
Balances	→	Financial Data Items

Financial Data Set

BI Analytical Applications

- Packaged Analytic Application – *The "buy" option*—A vendor-supplied package that provides domain-specific analytics. It contains an integrated set of analytic tools, data models, ETL mappings, business metrics, predefined reports, and "best practice" processes that accelerate the deployment of an analytic application in a given domain or across multiple domains.

- Custom Analytic Application – *The "build" option*—An analytic application that is primarily built using tools, code, or customizable templates to provide the exact look, feel, and functionality desired by an organization for its analytic environment.

Buy versus Build in Oracle (Reporting Infrastructure)

- Packaged Analytic Applications using Oracle
  - Oracle EDW*
  - DecisionPoint Applications
  - Jaros Analytics
  - Noetix NETS
  - Business Intelligence System (BIS)*
  - Financial Analyzer*
- Custom Analytic Applications using Oracle
  - Do-it-Yourself with Discoverer & OWB
  - DBI (when 2.0 released)

*these products are in “maintenance mode”

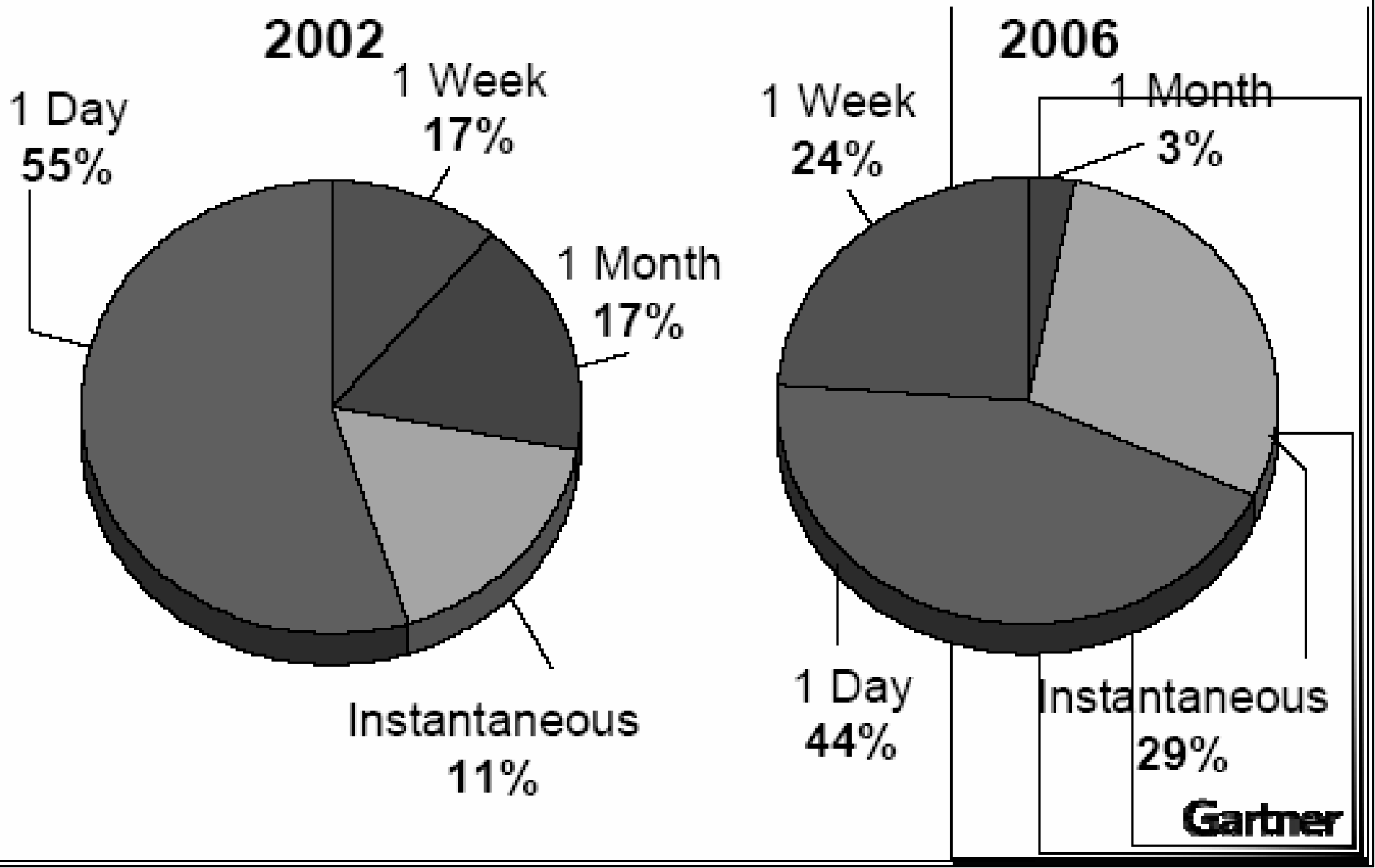
BI Reporting Architecture Comparison

- Embedded approach (EDW, Noetix) vs. External (DPA, Jaros)
  - Summary and detail data need to match
  - Performance considerations for Apps DB
  - Capture the transient detail (ex: net changes to orders)
  - Ability to create summary or aggregate tables and/or cubes
- Integration of multiple data sources
  - EDW – OWB and Oracle Interface Tables (performance)
  - Noetix – only multiple instances of OA
  - DPA – proprietary ETL directly from apps views
  - Jaros – Informatica PowerMart directly from apps views

Recent Reporting/BI Trends

- Shift from departmental to enterprise-wide
- BI Systems pressured to operate in (near) Real-Time
- Interoperability and integration is key trouble spot
  - BI and DW embedded in Applications
  - BI use in Portals – BI dashboards access the DW
  - BI has expanded from the traditional On Line Analytical Processing (OLAP) to now include Query and Reporting, ETL, Data Mining, and Data Visualization.
- Return on Investment (ROI) for analytic applications range from 17% to more than 2,000% per IDC December 2002 study, document #dg20021202.

BI and Data Latency Through 2006 - Evolution not Revolution



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Common Oracle ERP Reporting Scenario

- ERP team has belief that basic reporting will be provided by standard and FSG reports
- ERP team believes that Discoverer, OFA, OSA, etc. could be installed later for more complex reporting
- Reality is that neither assumption is correct
- Reality is that putting in ERP system without planning for reporting is like building a house without considering plumbing or electrical connections

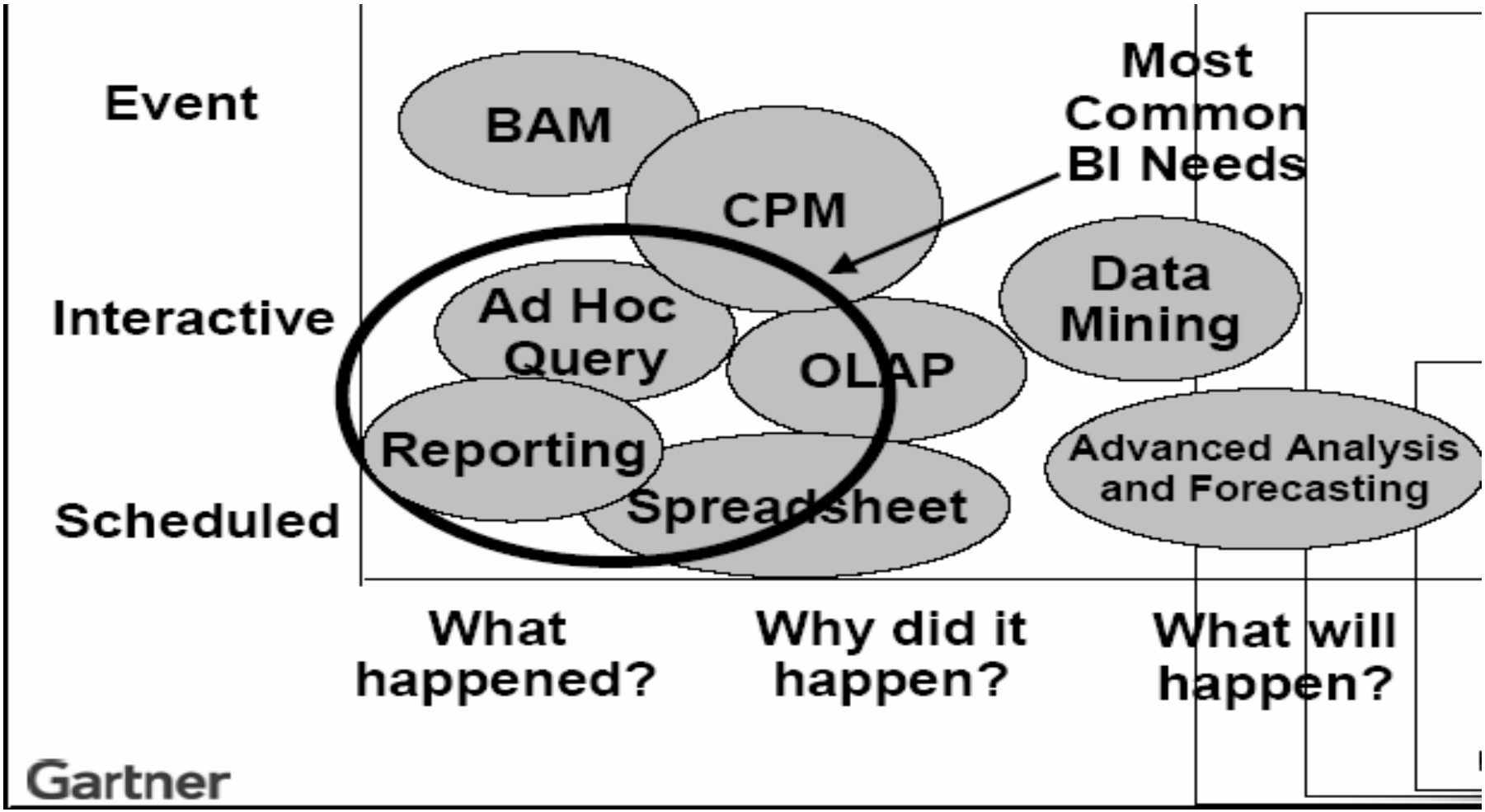
ERP Reporting “Golden Rule”

“If you do not take the time up front to gather and plan for the reporting requirements, you may not have the information available when you need to access it”

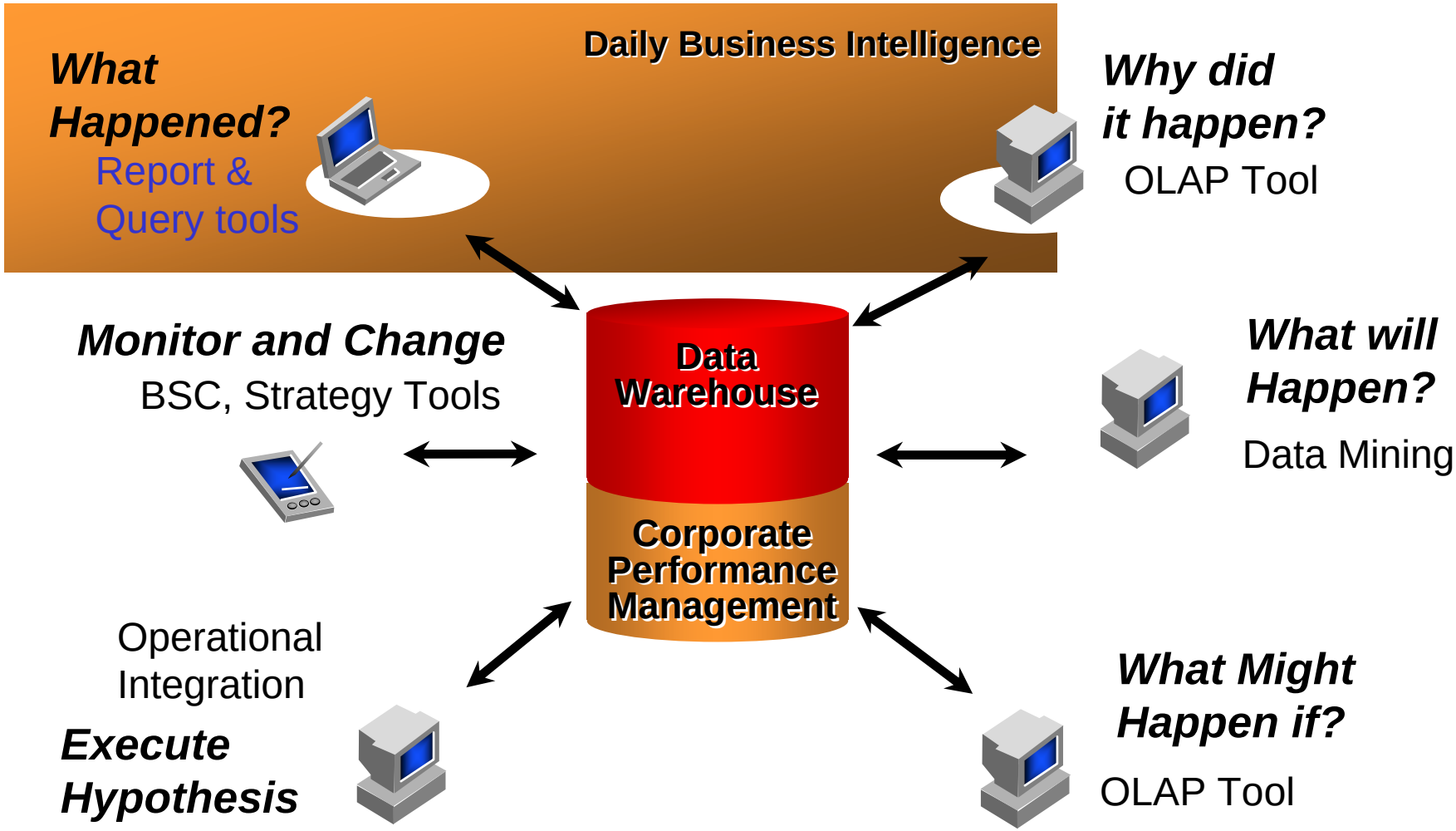
Planning AHEAD requires:

1. Performing a reporting needs analysis
2. Designing a reporting solution, matching needs against best products
3. Incorporation of reporting requirements into ERP applications design and configuration

Multiple Reporting/BI tools for Multiple Needs



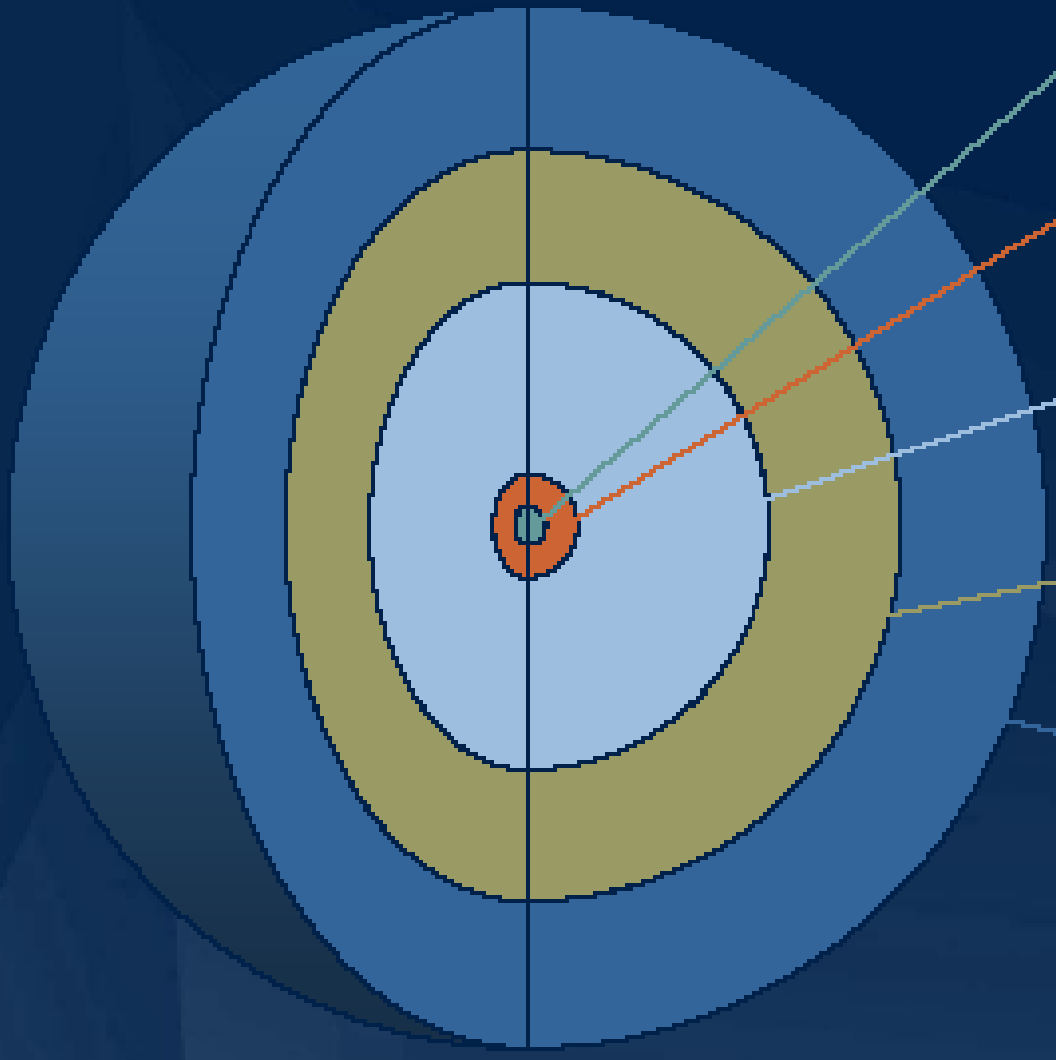
The Business Intelligence/Reporting Process



Why a Separate BI/Reporting Tool?

- Empowers end-users to do own analysis
- Frees up IS/IT backlog of report requests
- Ease of use—easy selection of data
- Drill-down
- No knowledge of SQL or tables required
- Exception Analysis
- Variance Analysis
- Easy rotation
- Formula calculations
- Aggregate data

The Strata of Analytic End-users



IT Users (2%)
98% producer 2% consumer

Power Users (5%)
85% producer 15% consumer

Business Users (25%)
15% producer 85% consumer

Casual Users (30%)
5% producer 95% consumer

Enterprise Users (38%)
1% producer 99% consumer

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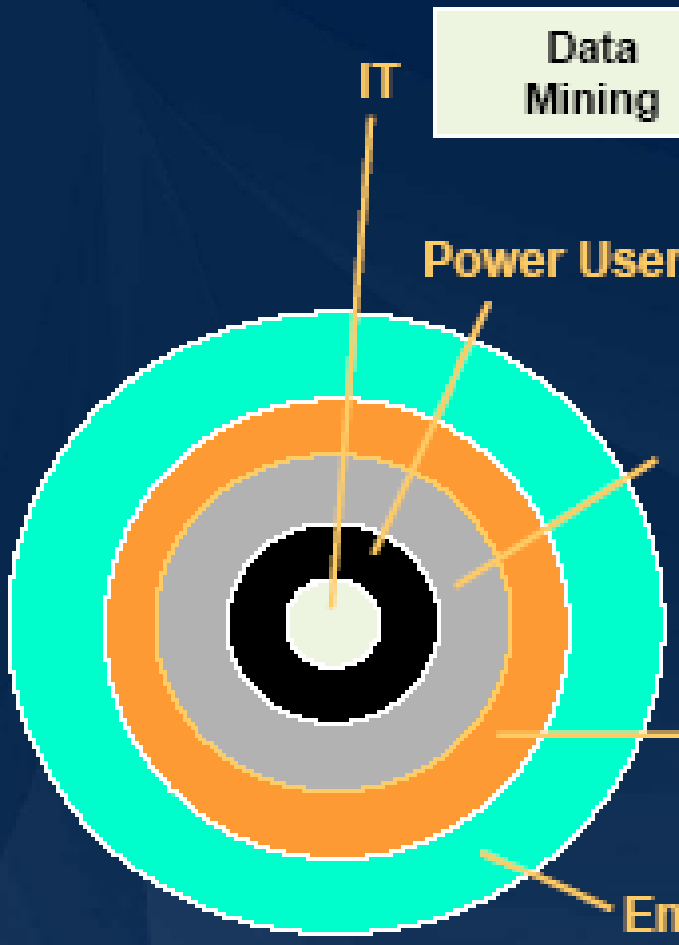
Enterprise BI Deployment Map



Data Mining	Application Development	Metadata Design
OLAP	Statistical Analysis	Analytic Reporting
Packaged An Apps	Business Reporting	
Scorecards	Perform Management	
Enterprise Reporting	Dashboards	
Mobile/ Wireless	Extranets/ B2B B2C	

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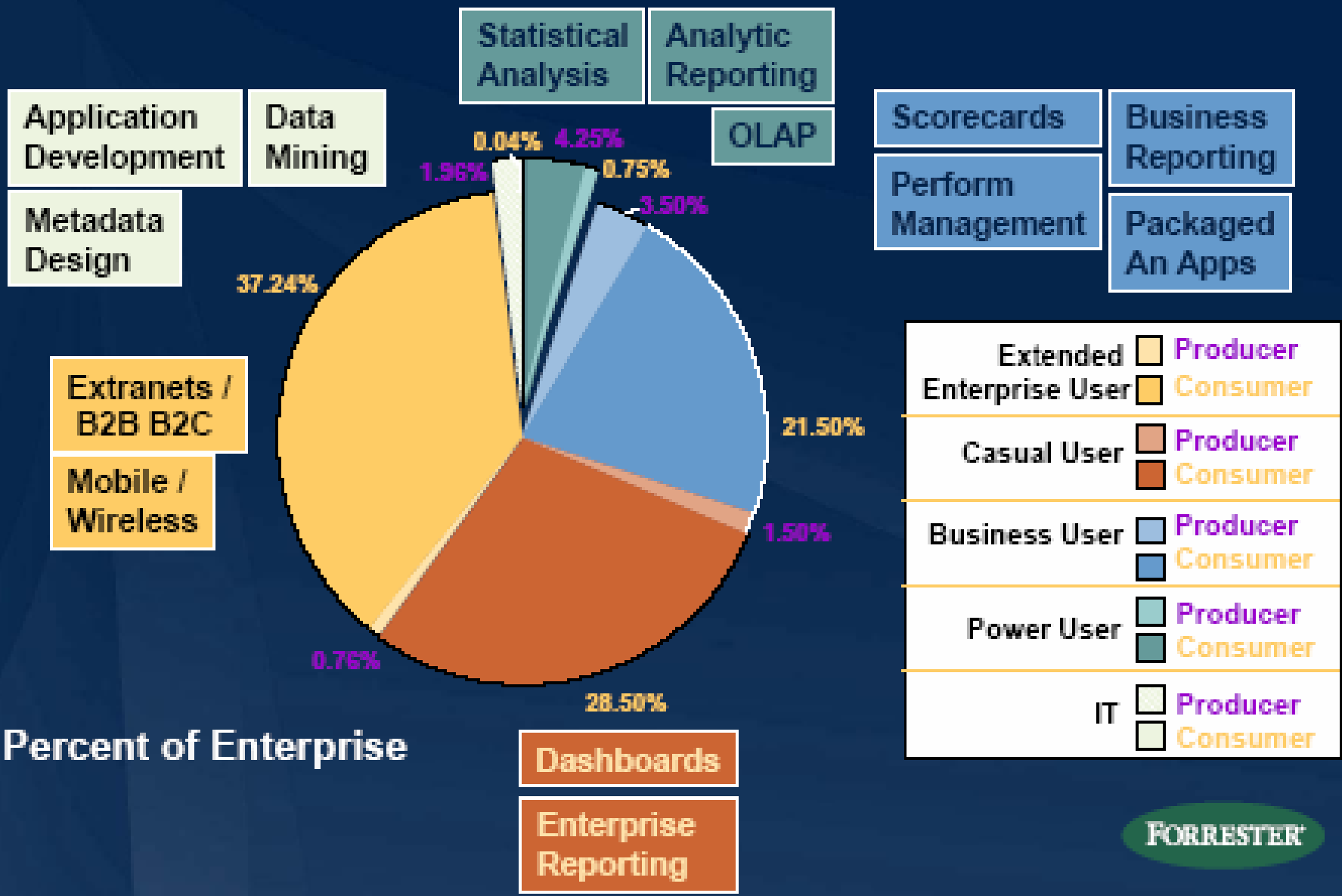
Serving BI to the Enterprise



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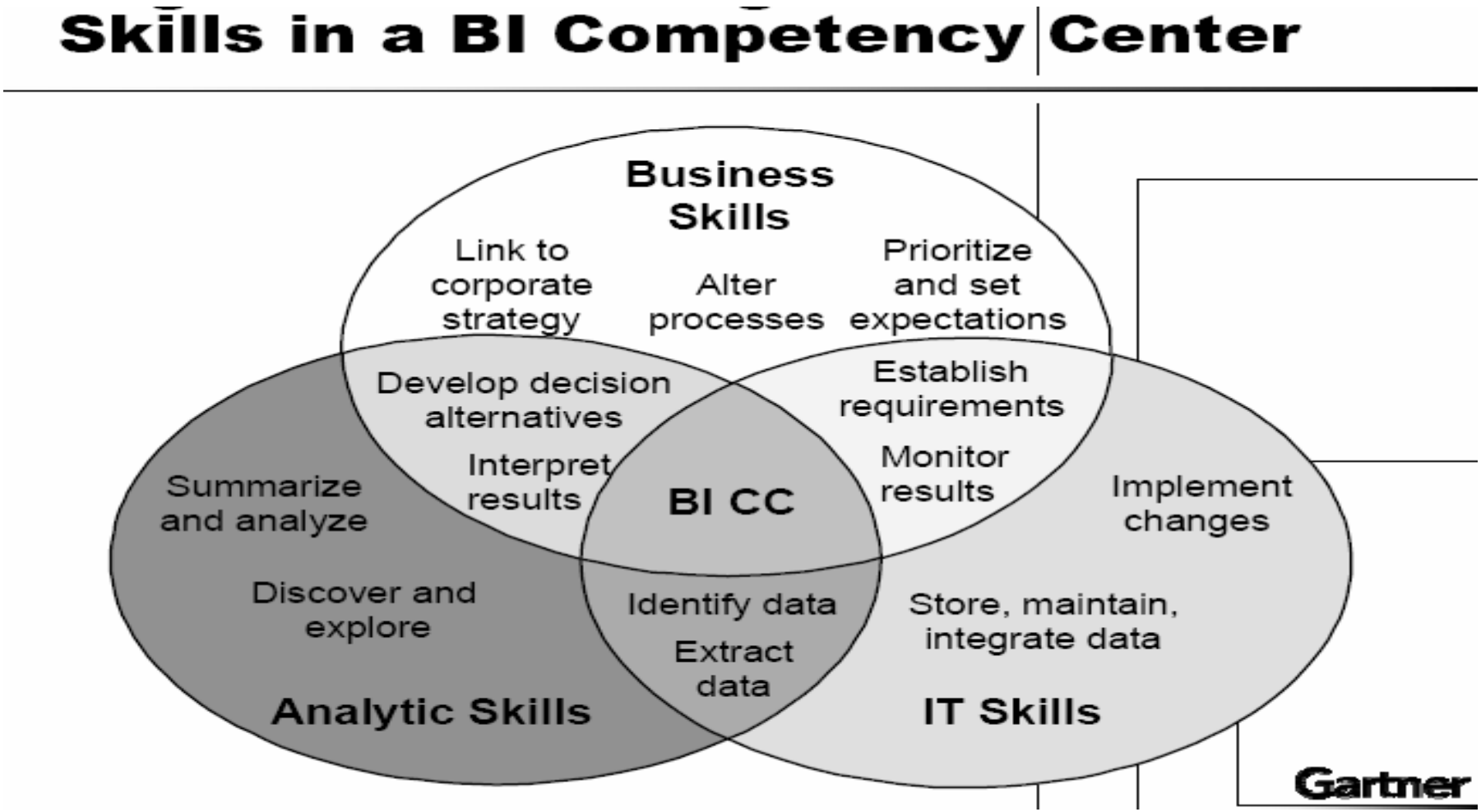
OLTP versus DW/BI—Different skills

- OLAP/BI is iterative in modeling, design, and implementation
- Frequent exposure of unknown data quality problems
- Multiple source systems (OLTP) converge into one or more target (DW/OLAP/BI) systems
- Multiple lines of business use different business rules, assumptions, terminology
- Quantity of data that will reside in DW/OLAP/BI is typically unknown
- Difficulties in loading and aggregating data
- Different challenges in performance tuning

Reporting/BI skills required



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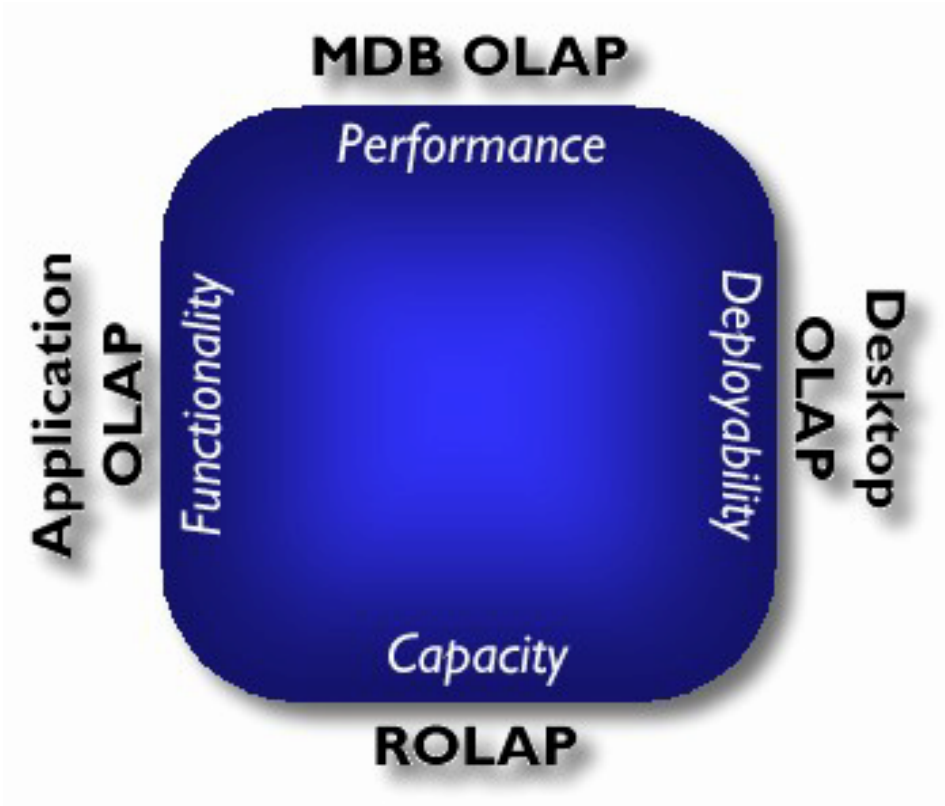
Market Segment Analysis
The Olap Report www.olapreport.com/



"Based on the many criteria discussed in The OLAP Report, a potential buyer should create a shortlist of OLAP vendors for detailed consideration that fall largely into a single one of the four categories. There is something wrong with a shortlist that includes products from opposite sides of the square."

Nigel Pendse
OLAP Report

Relational Reporting

- Advantages
  - Lowest Cost Per Seat
  - Rich Formatting
  - Web deployable
- Disadvantages
  - No real analysis
  - Not interactive
  - Hard to manipulate for end users
  - Not really OLAP
- Major Players
  - Crystal Reports
  - BI/Query
  - IQ/Objects
  - Cognos (Impromptu)

DOLAP (Desktop)

- Advantages
  - Low Cost Per Seat
  - Easiest to Deploy
  - End User Friendly
  - Transactional Data
- Disadvantages
  - Limited Functionality
  - Limited Data Capacity
  - Limited Customization
- Major Players
  - Cognos (PowerPlay)
  - Business Objects
  - Brio
  - Crystal Decisions
  - Hummingbird
  - Oracle (old c/s Discoverer)

ROLAP (Relational)

- Advantages
  - Deal with Large Data Volumes (Terabytes)
  - Access via SQL
  - Read-Only Reporting
- Disadvantages
  - Slow Performance
  - Limited Financial Calculations

- Major Players
  - MicroStrategy (DSS)
  - IBM Informix (MetaCube)
  - MindShare
  - WhiteLight
  - Oracle (web Discoverer)

MOLAP (Multidimensional)

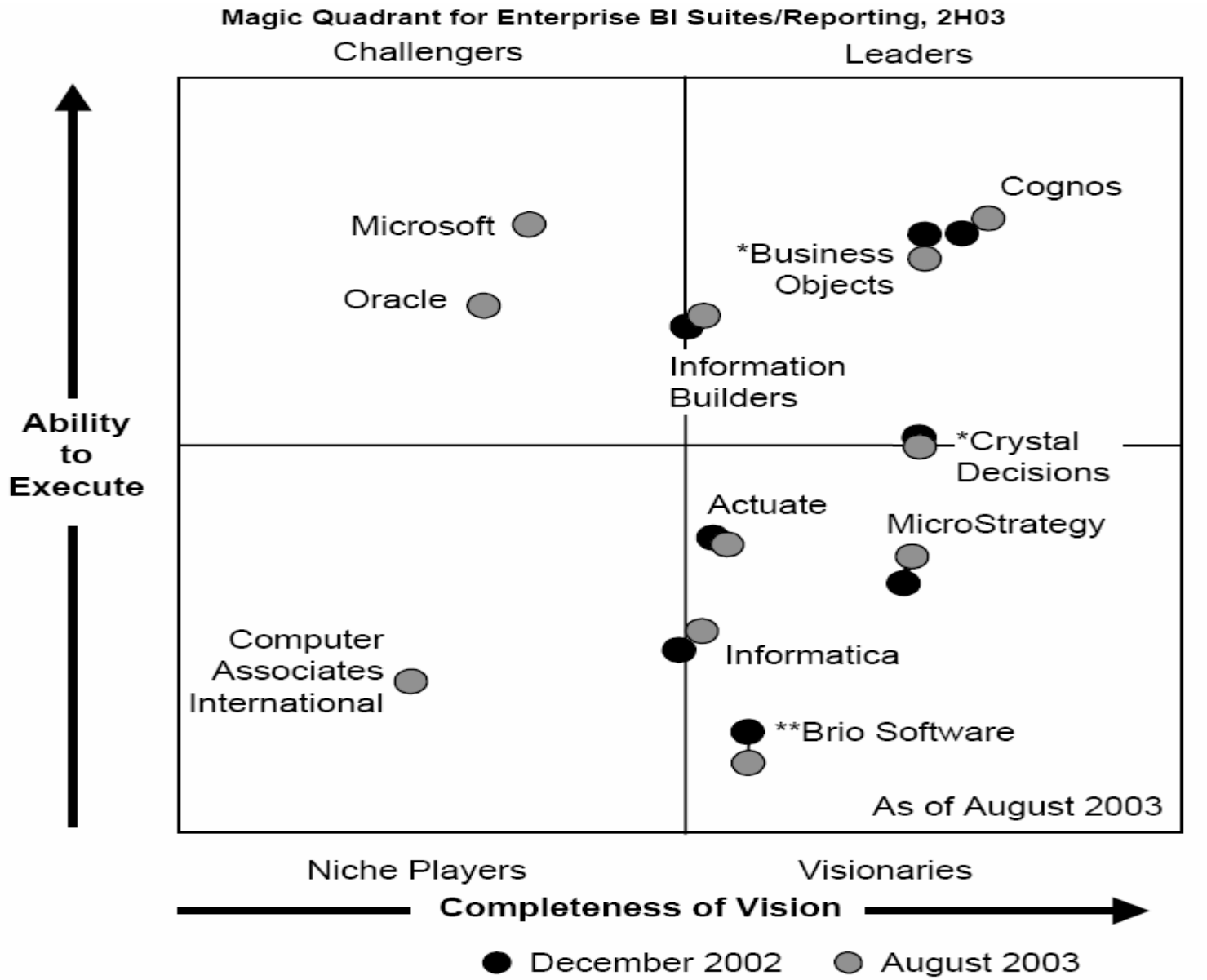
- Advantages
  - High Performance Database
  - Best of Breed Solution
  - Sophisticated Functionality
  - Supports Multiple Third Party Tools
  - Supports Gigabytes
- Disadvantages
  - Proprietary Language

- Major Players
  - MS OLAP Services (starting with v7.0)
  - Hyperion/Arbor (Essbase)
  - Applix (TM1)
  - Seagate (Holos)
  - Oracle (Express and 9i OLAP AW)

Application OLAP

- Advantages
  - Integrated Application with Database
  - Out-of-Box Complete Toolkit
  - High Functionality
  - Some can be configured as Hybrid OLAP (HOLAP)
- Disadvantages
  - Complexity
  - Cost Per User

- Major Players
  - Oracle (OFA & OSA)
  - Hyperion/Arbor (Essbase)
  - Information Builders (WorldMart)
  - SAS



* Business Objects has announced plans to acquire Crystal Decisions.
** Hyperion Solutions has announced plans to acquire Brio Software.

Source: Gartner Research (August 2003)

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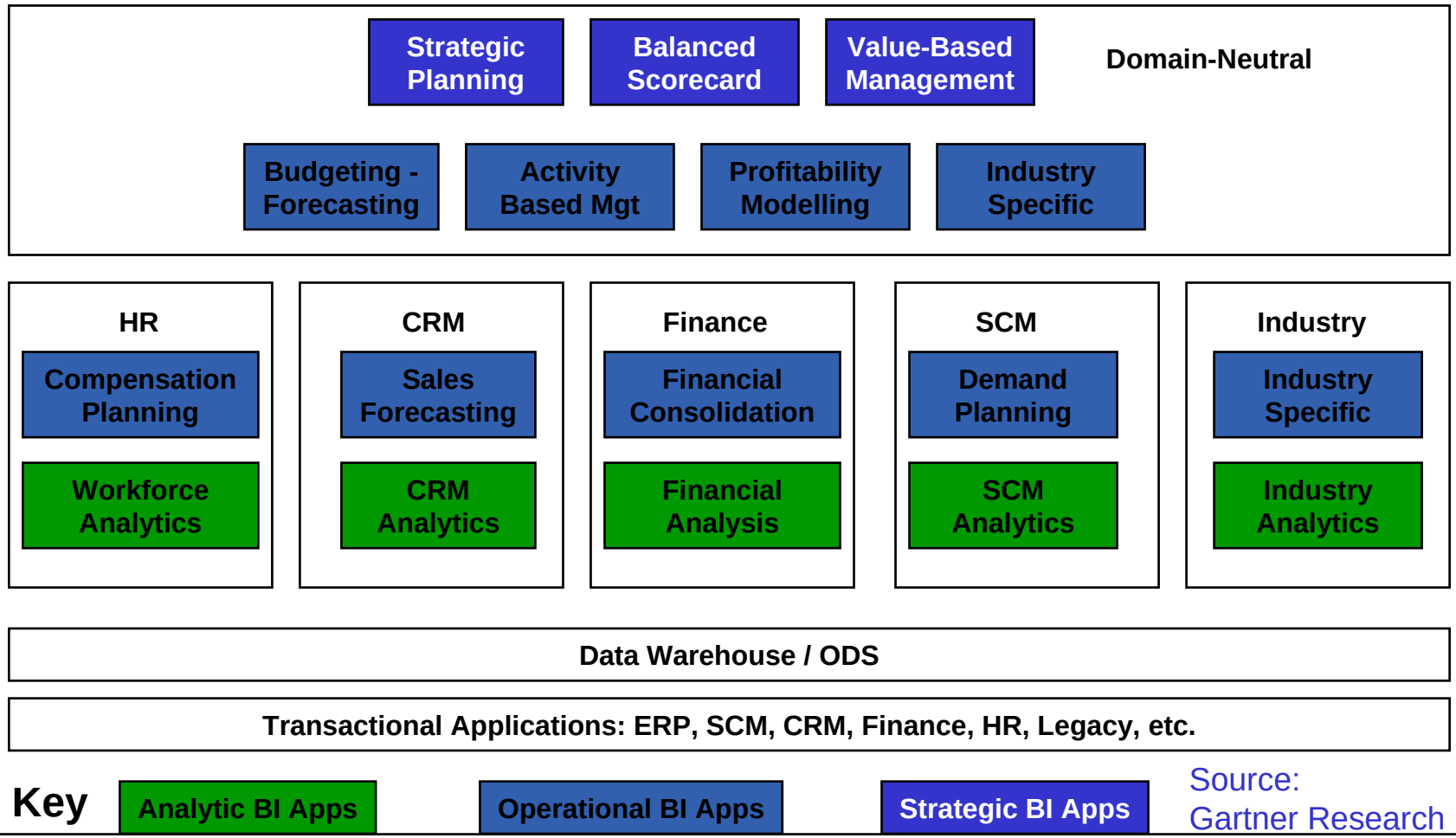
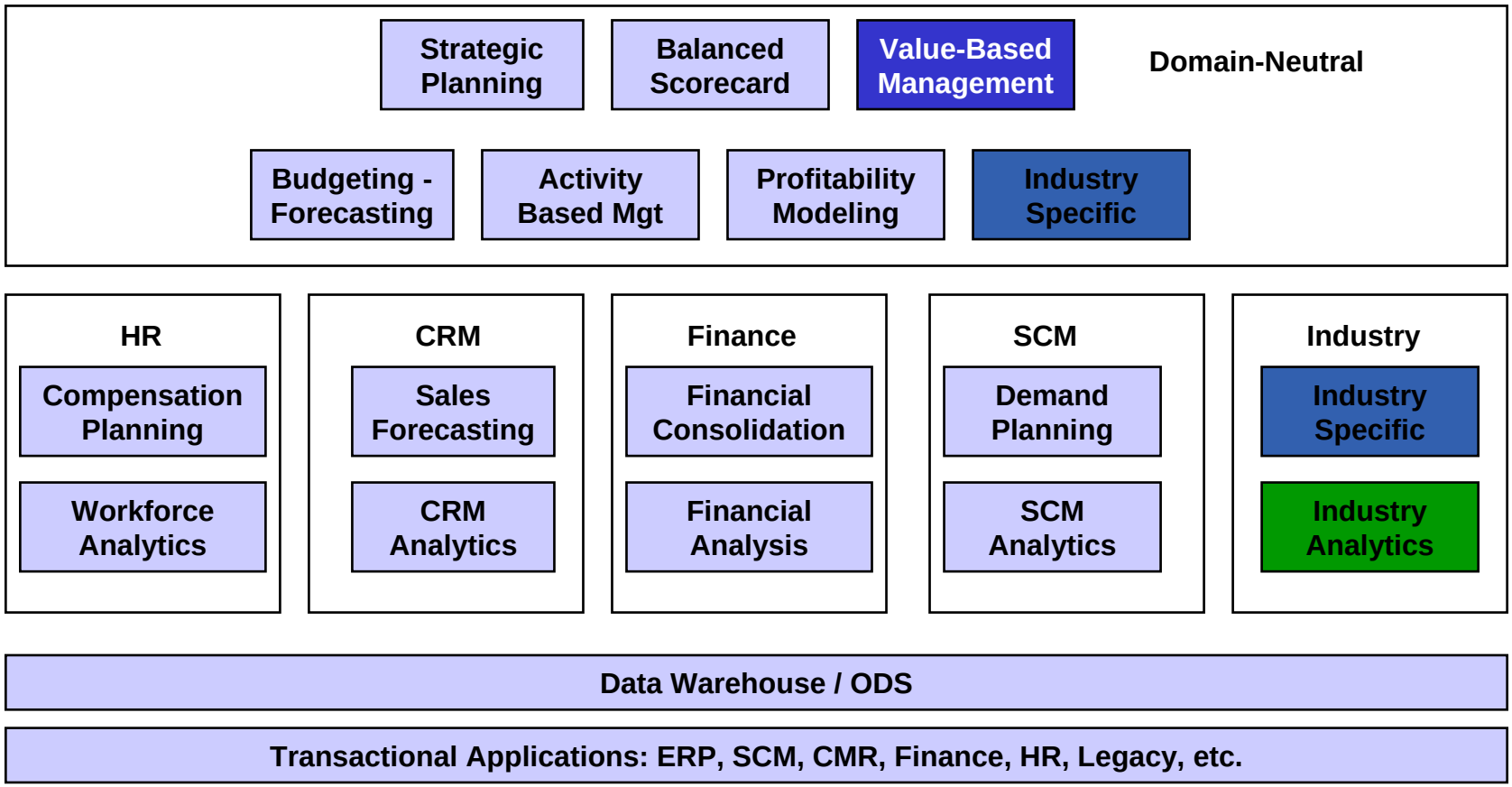
Performance Management



Source: Gartner Research

Oracle's CPM Coverage Today



Key Oracle Suite | Analytic BI Apps | Operational BI Apps | Strategic BI Apps

Source: John Schoenherr, Oracle VP

Oracle's Phased In Approach to Corporate Performance Management

- First Step To Improvement:
  - Admit that what we're doing is not adequate for the age we're in
    - very little integration
    - not enough data
    - inadequate facilities to learn from the past
    - too little time planning for the future
    - too expensive

      » John Schoenherr
      » Vice-President, Analytic Solutions

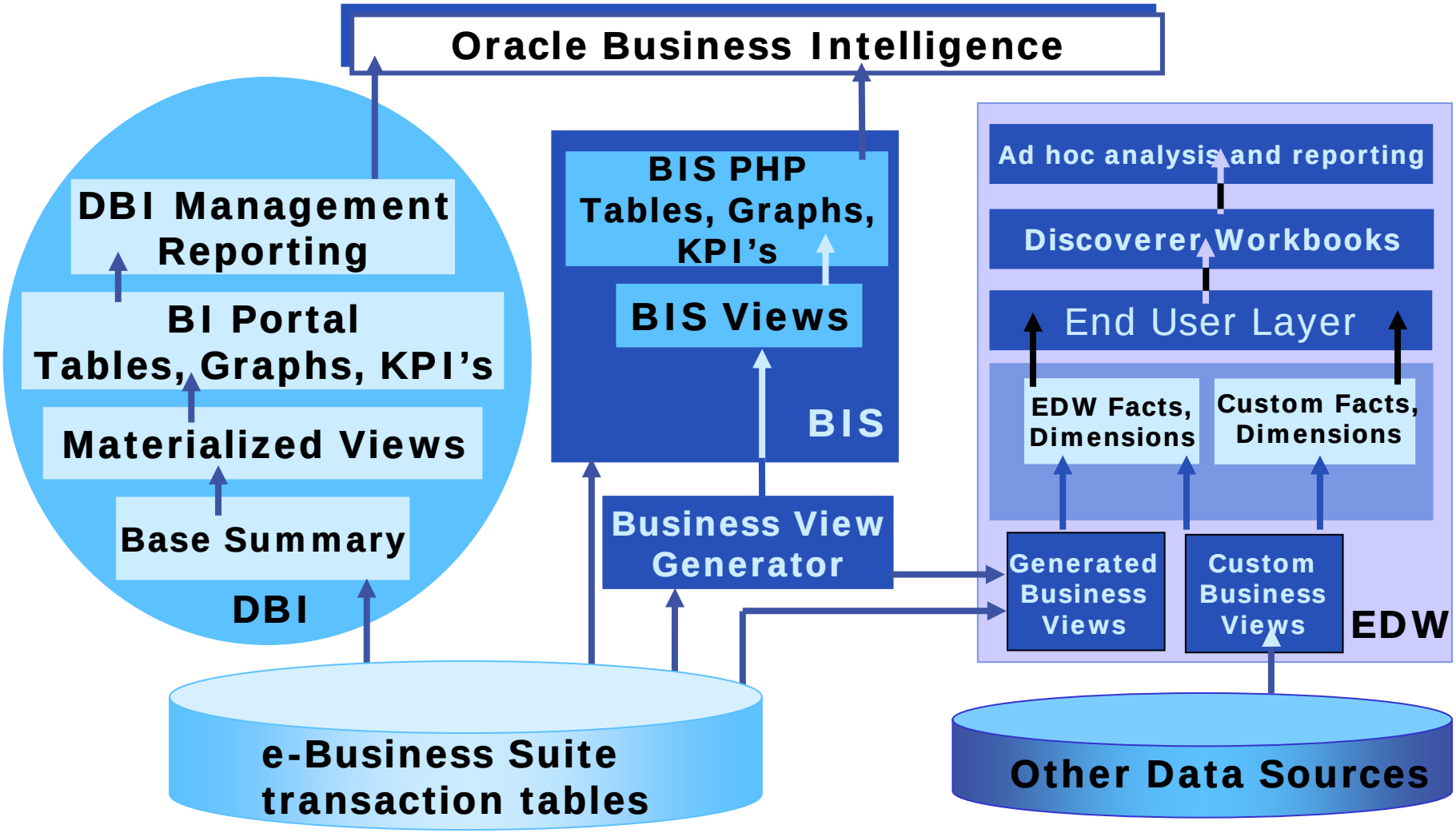
Corporate Performance Management Continued

- Step 2
  Acquire technology and integrate it into the base server and application architecture
  - Express, OFA, OSA (1995)
  - Financial Services Apps – Treasury Services (1998)
  - Activity Based Management – Activa (1999)
  - Darwin - Thinking Machines (2000)
  - Balanced Scorecard (2000)
  - Pure Integrate (2000)
- Step 3
  Build a unified data model for CPM
  - Embedded Data Warehouse (EDW)

Corporate Performance Management Continued

- Step 4
  Build a performance management framework and deliver operational reporting
  - Business Intelligence System (BIS - 2001)
  - Daily Business Intelligence (DBI - 2003)
- Step 5
  Release integrated Server (9iR2) and Application Server (9iAS) – 2003
- Step 6
  Release integrated planning, budgeting and analysis (EPB) – summer 2003

Oracle EDW/BIS/DBI Architecture



BIS Release and Architecture

- BIS 1.x patch on Apps 11.0
- BIS 2.x released with Apps 11i
- BIS 3.x/4.x Embedded Data Warehouse
- BIS 5.0 Daily Business Intelligence for 11.5.8+

- Version 1-2
  - Database Views on OLTP
- Version 3-4
  - Data Warehouse tables
- Version 5
  - Materialized Views

Business Intelligence System

- First shipped in 1998
- Uses standard Oracle Apps security profiles
- Covers GL, AP, AR, HR, PO, Projects, Manufacturing—process and discrete modules
- Standard advise on performance problems—setup BIS on a separate reporting instance
- Currently in maintenance mode
- Uses Discoverer technology under the covers

Daily Business Intelligence

- First shipped as Early Adopter in February 2003
- Had roughly 10 Early Adopters using versions 5.0, 5.1, and 6.0
- Uses same HTML server as Performance Analyzer and Enterprise Planning and Budgeting, not same as Discoverer
- Covers GL, AP, AR, PO, PR, CRM, Sales, HR, contracts, marketing, iStore and services modules; Partial coverage for supply chain and discrete mfg
- Uses same security model as Oracle Apps if installed in same instance
- Designed to be intuitive, and therefore no end user training should be necessary

DBI limitations

- Since materialized views must be synchronized on a schedule (time or event driven), each html page in viewer must have all data updated at same time
- Not allowed to extend or customize views or viewer; must wait for next release which includes a designer and toolkit; in meantime, you can create EUL on top of materialized views and use Discoverer for customizations
- Requires 9iR2, 11.5.8, and 9iAS; prefer RAC for performance reasons; if do not have RAC, then can use a bigger box or create a copy instance for reporting only
- Oracle consulting must be engaged when participating in early adopter program; expect 3-6 weeks to get up and running on multiple modules
- If need to incorporate external data sources, you are currently outside of DBI support

Oracle Analytic Solutions

- Products
  - Activity Based Management (ABM)
  - Performance Analyzer (PA)
  - Demand Planner (DP)
  - Sales Analyzer (OSA)*
  - Financial Analyzer (OFA)*
  - Enterprise Planning and Budgeting (EPB)

*these products are in “maintenance mode”

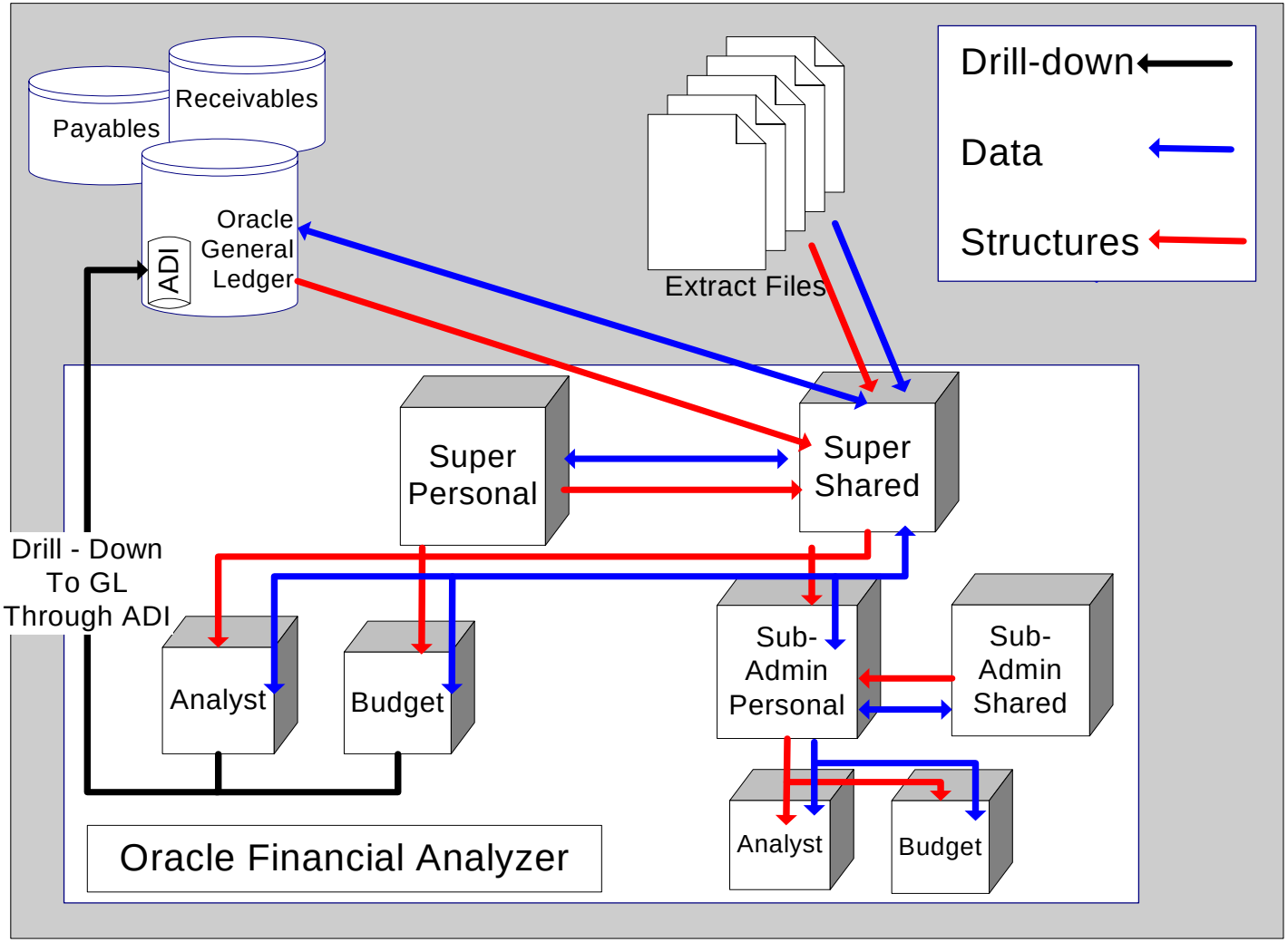
Oracle Sales Analyzer

- Server-centric Approach for the Express Databases
- Read-only Application
- Ability for End-users to Create Custom Measures and Aggregates
- Ability to Deploy in Any OLAP Mode:
  - ROLAP
  - MOLAP
  - HOLAP
- Not Integrated with Any of the Modules of the E-Business Suite

Oracle Financial Analyzer

- Distributed Approach in Using Express
- Allows Users the Autonomy to Create and Manipulate Own Scenarios of Data
- Ability to Write Data Back
  - Budgets and Forecasts
- Ability to Create Asymmetric Reports
- OFA integrates with the Oracle General Ledger via GL Link, or can customize to use non-Oracle data sources
- Custom Facts (FDIs), But Knowledge of Express Language Needed may be needed

OFA Architecture



OFA thick client vs. web client

Feature	Thick Client	Web Client
Multiple FDIs		**X**
Multiple Dimensions Down or Across		**X**
Recognize Data Locks		**X**
Asymmetric Formatting		**X**
Calculation Method	**Model, single hierarchy**	**Model, multiple hierarchies**
Data Entry Tools	**X**	
Modified/Maintained by Users	**X**	

Enterprise Planning and Budgeting →Integrated Business Processes

Define

- Identify KPIs
- Develop plans based on corporate strategy

Distribute

- Streamlined automated process
- Budget lines by Org
- Notify managers

Submit & Approve

- Adopt budget
- Notify managers
- Document/post

Create

- Identify organization
- Map plans to budget lines
- Develop hierarchies
- Develop financial models

Analyze

- Multi-dimensional what-if
- Variance
- Profitability
- User defined annotations

Manage & Continuous Planning

- Budget book and monthly pack reporting
- Variance analysis
- Exception analysis
- Reforecast

Which version of Oracle Apps does EPB require?

- Delivered as part of Oracle Applications, but can be run standalone
- Delivered as a patch to Oracle Applications 11.5.9 -- Included as part of the rapid install for 11.5.10
- Backports of EPB to 11.5.8 or earlier are not technically feasible
- Requires Oracle9*i* Database 9.2.0.4 plus OLAP Option
- If a customer has 10.7 or 11.0.x or no Oracle Applications, then the product can be a standalone solution

Migration From OFA and OSA

- OFA and OSA 6.4 will be supported until mid 2008 with error correction support until end of 2006
- Oracle will provide a migration path for existing customers of OFA and OSA to migrate their implementations to EPB
- These are migration tools, not a one-click upgrade
  - Should I migrate or re-implement?
- OSA ROLAP customers will need to convert their warehouse schema into EPB form as part of migration
- Migration paper on http://www.oracle.com/applications/cpm

Integration Through EPB Schema

- Enterprise Planning and Budgeting
- General Ledger
- More planned: Applications
  - Performance Analyzer
  - Activity Based Management
  - Public Sector Budgeting
- More Planned: Sources
  - Projects
  - Fixed Assets
  - Human Resources
  - Grants

Buy versus Build in Oracle (Reporting Infrastructure)

- Packaged Analytic Applications using Oracle
  - Oracle EDW*
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  - DBI (when 2.0 released)

*these products are in “maintenance mode”

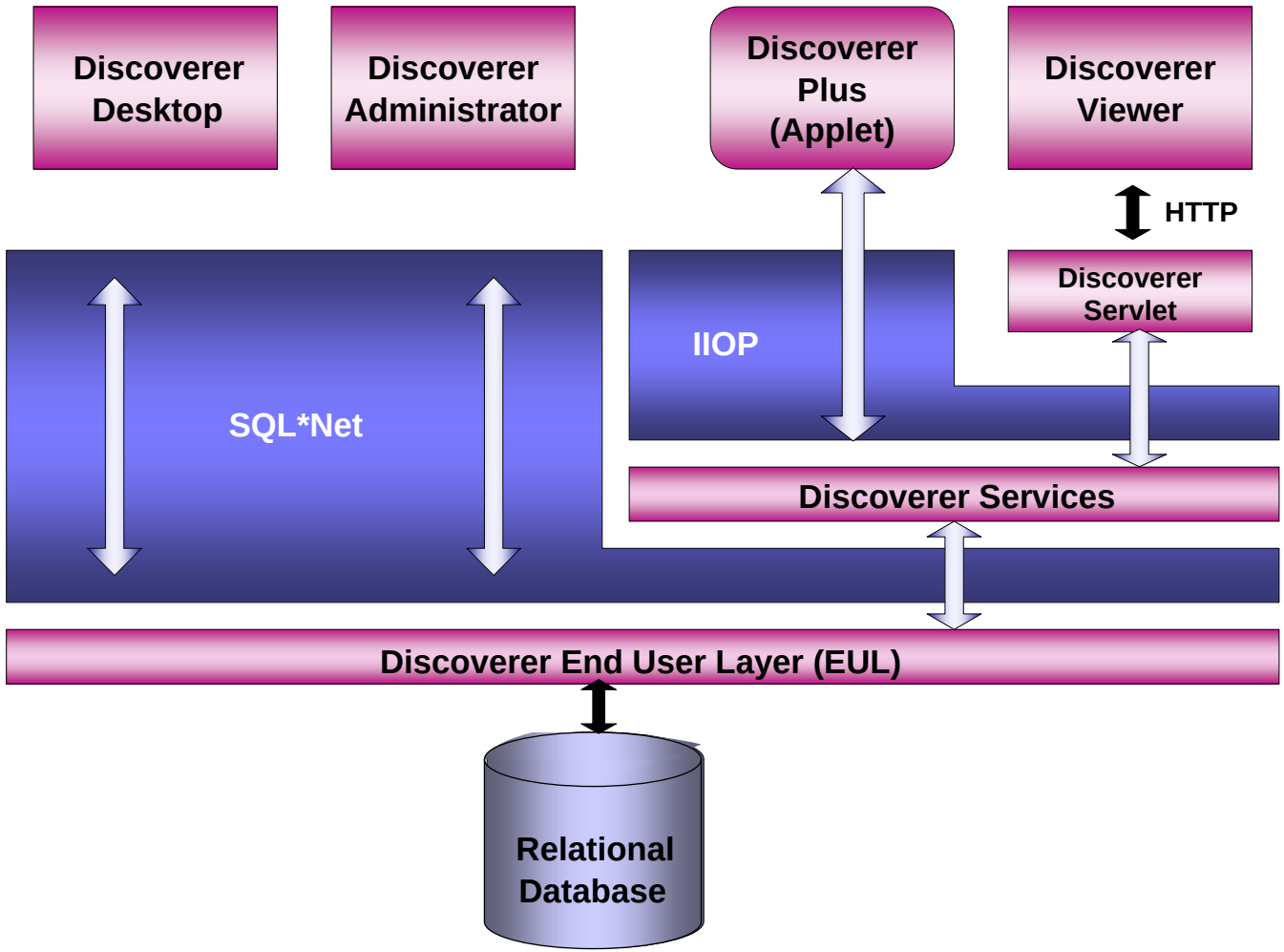
Discoverer

- Ad-hoc Query Tool Used to Analyze Data on the fly From Oracle's Relational Database
- Integration With Oracle Warehouse Builder, Oracle Reports, and Oracle Designer
- Uses Drill-down and Pivoting
- Discoverer Manager defines the following 4 types of drills:
  - Item to item drills (item hierarchies)
  - Date to date drills (date hierarchies)
  - Drill to detail item class (hyperdrills)
  - External application drills (hyperdrill plug-ins)

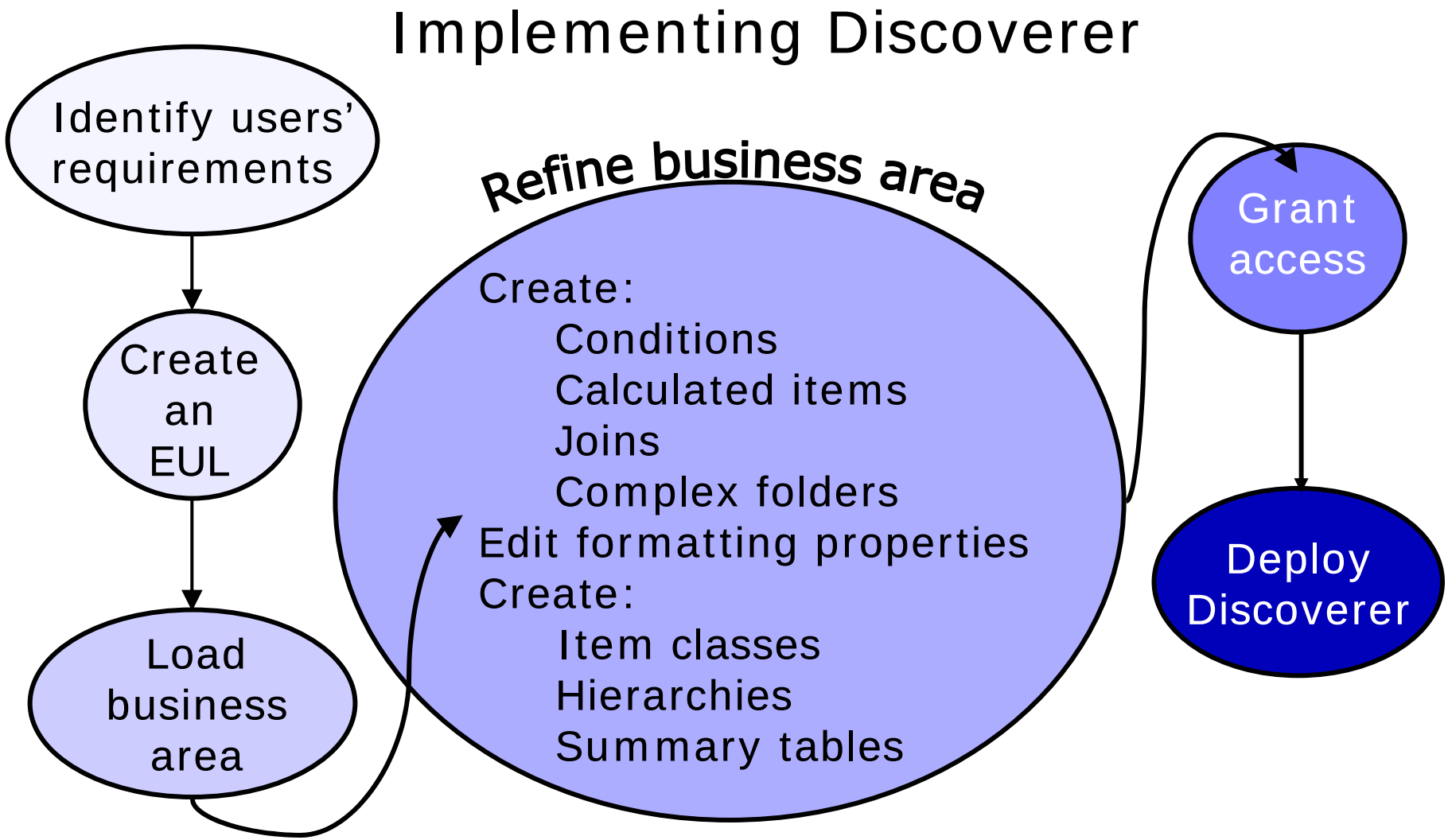
Discoverer Components

User Requirement	Plus	Viewer	Desktop
Install and run Discoverer on a PC running Windows	No	No	Yes
Run Discoverer using a Web browser	Yes	Yes	No
Build new worksheets	Yes	No	Yes
Save workbooks to the file system	No	No	Yes
Customize Discoverer user interface	No	Yes	No

Discoverer for Windows and the Web



Role of the Data Administrator



Discoverer Integration Methods

- Four possible methods:
  - Create EUL against Business Views
  - Oracle BIS
  - Create Datamart
  - Enterprise Data Warehouse

Create EUL against Business Views

- Easiest and Fastest DIY approach
- Captures Flexfield information
- Up to date information
- Performance may be an issue

Create Datamart

- Distill critical Applications tables into a datamart - most difficult DIY approach
- Requires extensive knowledge of Applications schema
- Snapshot of data that needs to be refreshed
- Challenging to preserve flexfields
- Better performance

Applications Certification – DIY approach

- Discoverer 3i, 4i and 9.0.2 work against Oracle Applications 11i, 11.0 and 10.7
- 11.5.7+ rapid install contains Discoverer 4i (4.1.48+ as part of iAS 1.0.2.2.2)

Applications Certification "out of the box" approach

- Customers who use BIS/EDW are certified to use 4i against 11i if iAS 1.0.2.2.2 installed on separate machine (metalink note 139516.1, ARU 1834171)
- Customers who use BIS/EDW and want iAS 1.0.2.2.2 in same Apps Oracle Home can use the 11.5.7 rapid install (metalink note 146468.1)
- Debugging and Troubleshooting (metalink notes 186981.1, 130091.1, 216208.1, 165195.1, 175287.1)

OSA, OFA, and Discoverer Share

- Tables and graphs
- Drag-and-drop rotation
- Drill-down/up
- Easy to use interface
- Cache data
- Conditional formatting (color-coding)

Discoverer Limitations

- Disadvantage - Need For Users to Know Underlying DB structures and/or SQL
- Weak security, either public or private, unless installed as part of Oracle Apps

Discoverer Advantages

- Simple SQL custom calculations
- More flexible reporting (subtotals, etc.)
- Operates directly against relational data source
- Transactional view available
- Record-based selection
- More intuitive for users that know SQL

Agenda

- Reporting and BI definitions
- Requirements Analysis
- IT Reporting Skill Sets
- Reporting Products Marketplace
- Oracle's Corporate Performance Management (BI)
  - BIS and DBI
  - Financial Analyzer and EPB
  - Discoverer
- Questions

BI and Reporting → Cold Hard Facts

"Consultants, including the Big Five (or 'Final Four'), usually favor products for which they provide implementation services, and the vendors with whom they have partnerships. **The OLAP Survey 2** found that implementations by large, general purpose consultants had a much lower success rate than those by smaller specialist BI consulting firms."

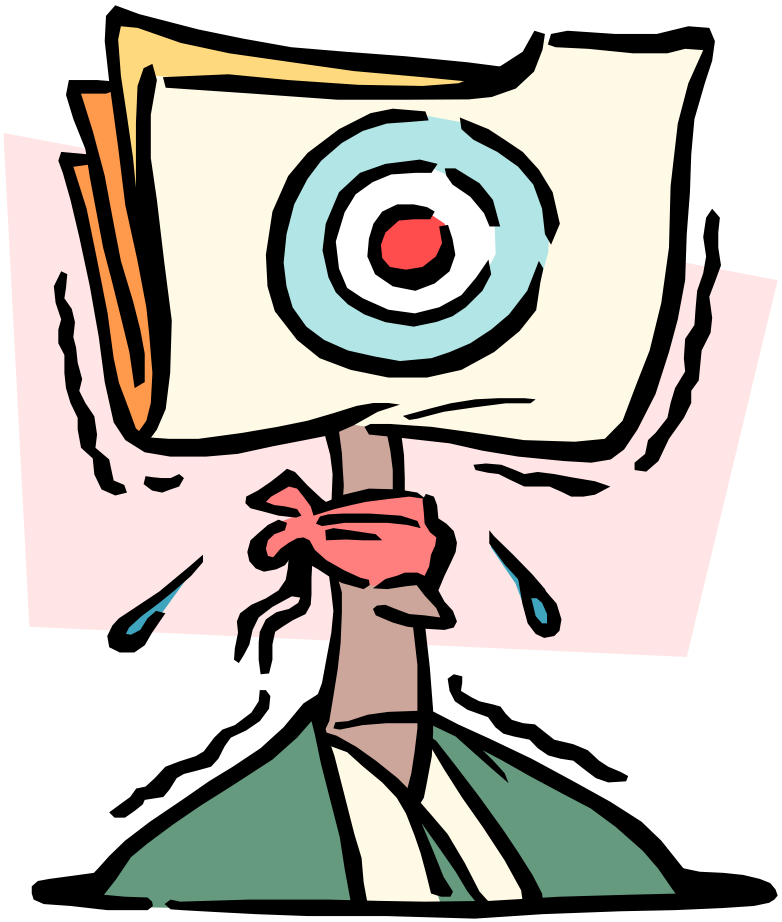
Nigel Pendse, The OLAP Report,
January 09, 2003

BI Strategic Maturity: Where Are You?

	Opportunistic	Tactical	Strategic
Business	– Focused: increase operational efficiency – Scope: department	– Operational: improve business effectiveness – Scope: multi-department	– Strategic: integrated business execution & mgmt – Scope: enterprise, partners customers
Organization	– Single user type. Limited skills required – Managed and funded by IIT	– 2 or 3 user types – Higher level of skills – BI competency center – Managed and funded by IT or business unit	– All user types – BI competency center – Funded at executive level
Infrastructure Functionality	– 1 or 2 sources – Reporting-centric – Limited data quality	– 2 or more sources – 2 or 3 tool types – Data quality is important – Data mart, data warehouse, OLAP	– Multiple sources – Multiple data warehouses – Standards – Multiple tool types
Failure Modes	– Scalability – Accuracy and quality – Consistency – Inflexibility – Expectations	– Skills – Politics, funding – Data access – Timeliness – Ability to evolve	– Cultural – Complexity, integration – Sponsorship and priority – Politics – Mission critical

Gartner

More Questions?



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Apps Reporting—How Can I Get What I Need?

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