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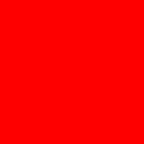


## **Oracle Business Intelligence 11g and Data Warehousing Technology & Applications Integration Points**

Robert Stackowiak

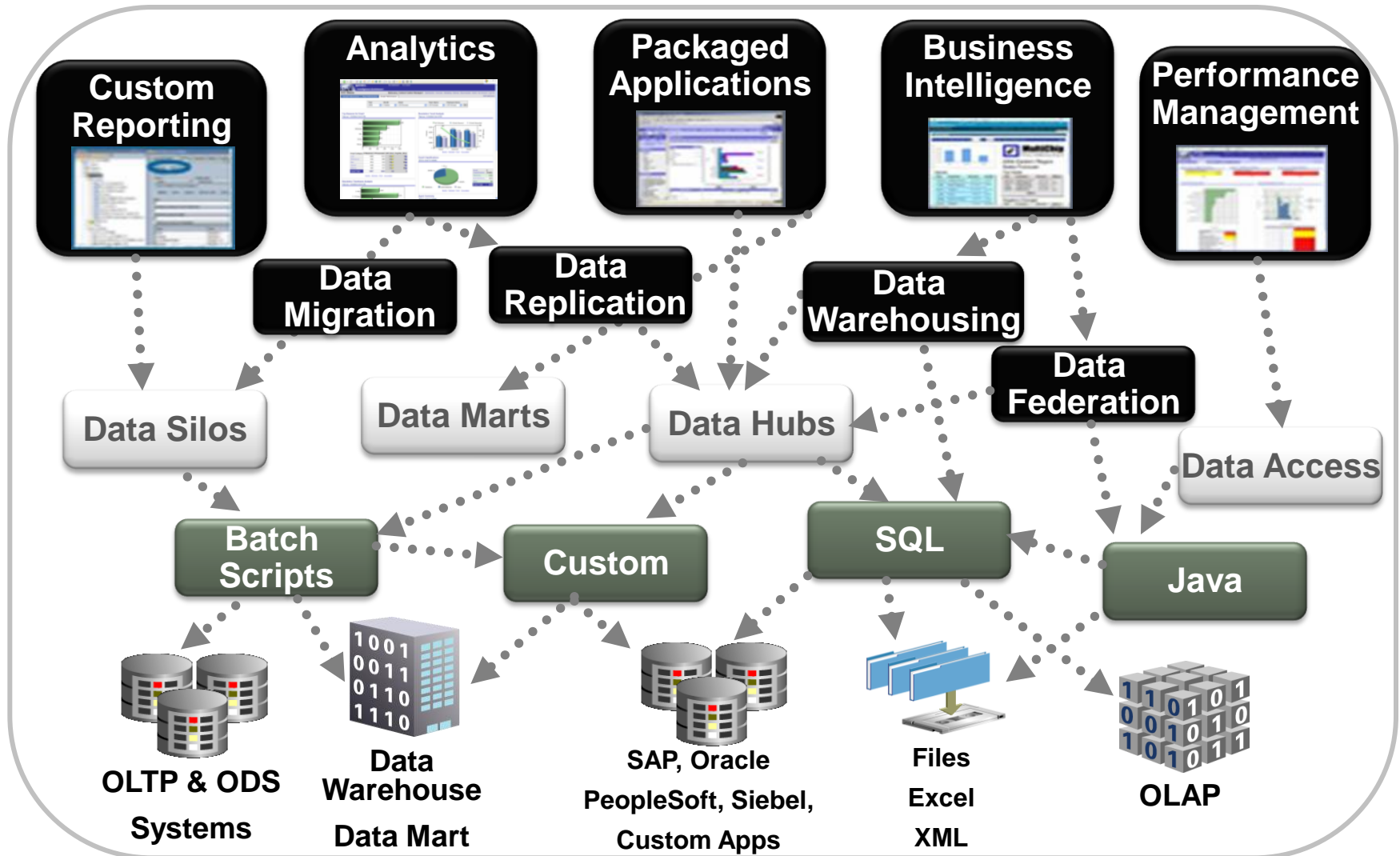
Vice President, BI & Data Warehousing, Oracle Enterprise Solutions Group

December 8, 2010

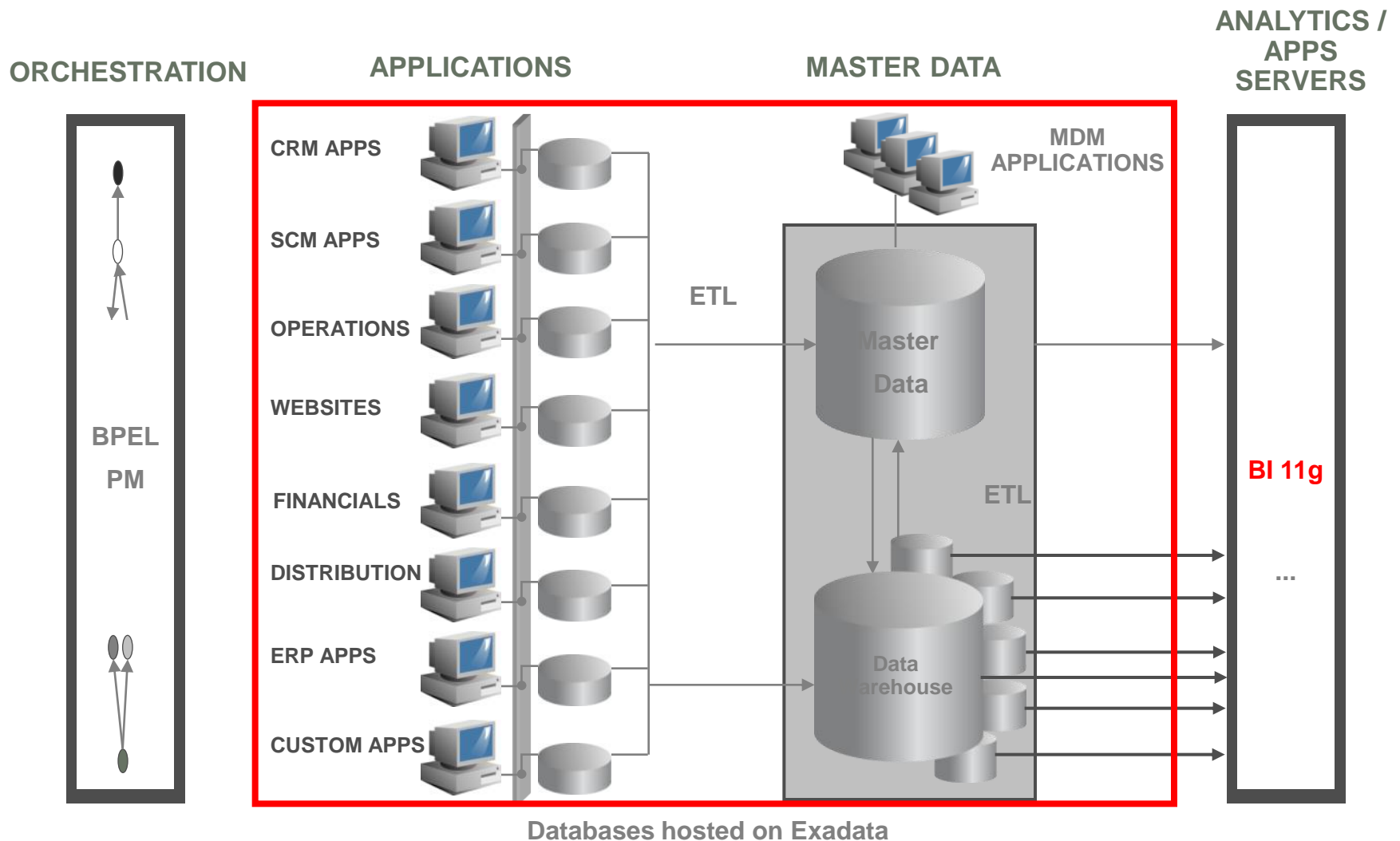


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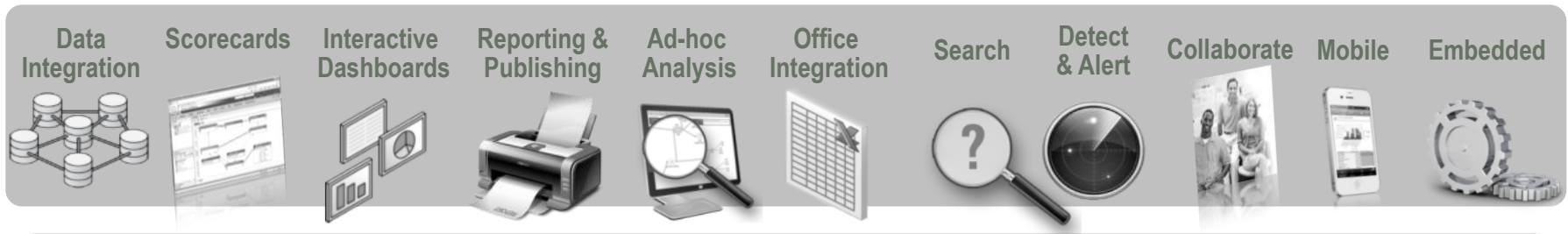
# Today's Reality



# Moving toward a Cleaner Architecture

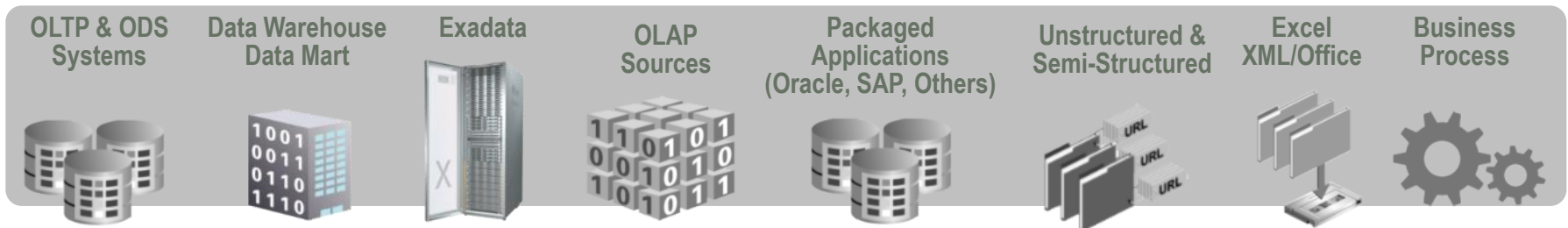
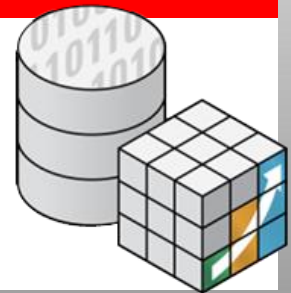


# Oracle Business Intelligence 11g



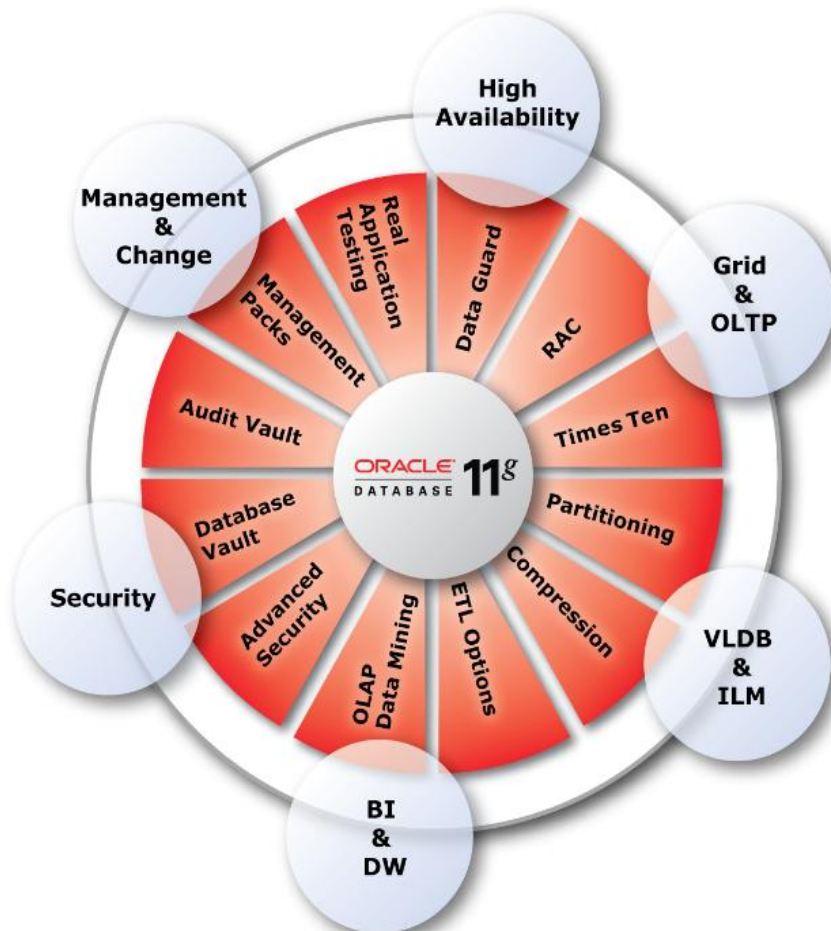
## Common Enterprise Information Model

- Common Metadata Foundation across all Data Sources
- Common Security, Access Control, Authorization, Auditing
- Common Request Generation and Optimized Data Access Services
- Common Clustering, Workload Management, & Deployment
- Common Systems & Operational Lifecycle Management



# Oracle Database 11g

## The Leading Enterprise Database



### Key Capabilities

- Flexible Data Models
- Leading Performance
- Single Point of Management
- Secure
- 24X7 Availability
- Optimal Storage Management
- Scale to hundreds of Terabytes & large analyst communities

# Oracle Exadata

## Extreme Performance

**ORACLE**  
EXADATA



- Fastest growing new product in Oracle's history
- Server & Storage Integrated Hardware & Software Platform
  - Data Warehousing
  - OLTP
  - Consolidation

**“After carefully testing several data warehouse platforms, we chose the Oracle Database Machine. Oracle Exadata was able to speed up one of our critical processes from days to minutes.”**

**Brian Camp**

SVP, Infrastructure Services Knowledge Base Marketing

**ORACLE**



# Oracle BI, Oracle Database & Exadata

**Hardware and Software**  
**Engineered to Work Together**



**ERP & CRM BI Applications**

**Industry BI Applications**

**Business Intelligence Foundation**

**WebLogic Server**

**Oracle Database**

**Embedded Analytics**

**Spatial Geocodes**

**Exadata Storage  
Server Software**

**Oracle Exadata Database Machine**

**Database Server Nodes**

**Exadata Storage Cells**

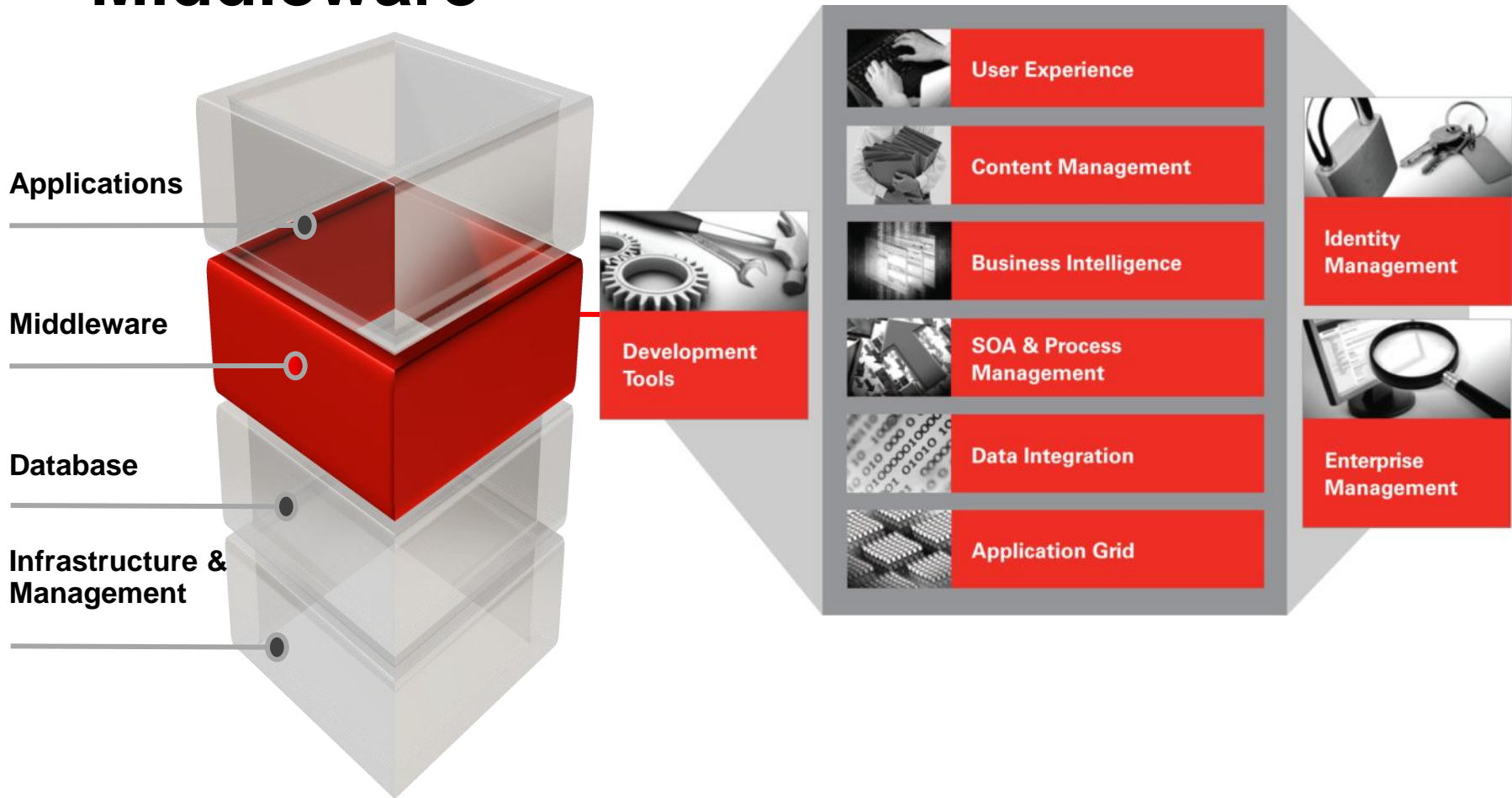
**Common Security**

**Enterprise Manager**

# Technology Integration




# Better BI/DW With Oracle Fusion Middleware



# Best Performance

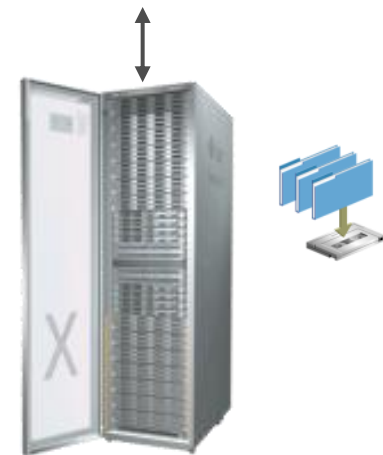
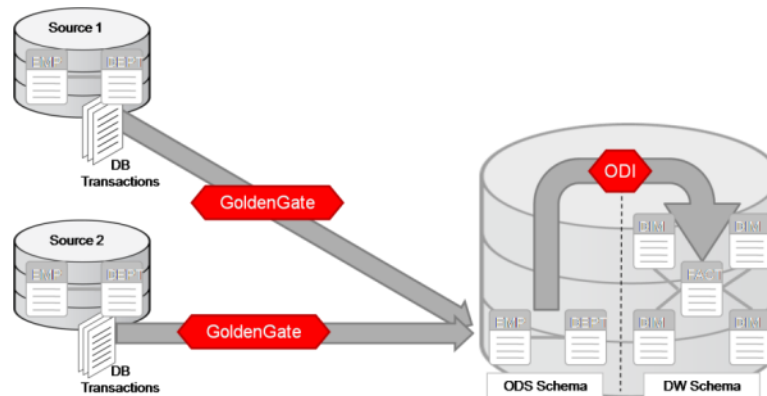
## Oracle BI 11g and Exadata

- Intelligent Request Generation
- Intelligent Function Shipping
- With multi-pass calculations
- Intelligent Aggregate Navigation
- Intelligent Caching
- Optimized Distributed Data Access



**ORACLE BI SERVER**  
Complete. Open. Integrated.

Common Enterprise Information Model



ORACLE

# Best Performance and Scalability

## Oracle Business Intelligence + Exadata



### Large US Grocery

- Up to 457x Faster queries
- 1 second vs. 7.6 minutes

### Global Bank

- 9.2x to 27.6x Faster queries



### Major US Bank

- 14x – 752x Faster queries,
- 5 hour query reduced to 17 seconds

# Real-Time Data Warehousing on Exadata



## Business Challenges

- Supporting campaigns management with timely customer information
- Reducing batch windows while data increases and improving the performance of ETL and reporting

## Solution

- Oracle GoldenGate feeds real-time data from CRM, Billing and other key systems to operational data store
- Oracle Data Integrator extracts from the ODS and loads near real-time data to Exadata DW
  - New solution replaced IBM Infosphere Data Stage
- OBI EE is used for real-time reporting



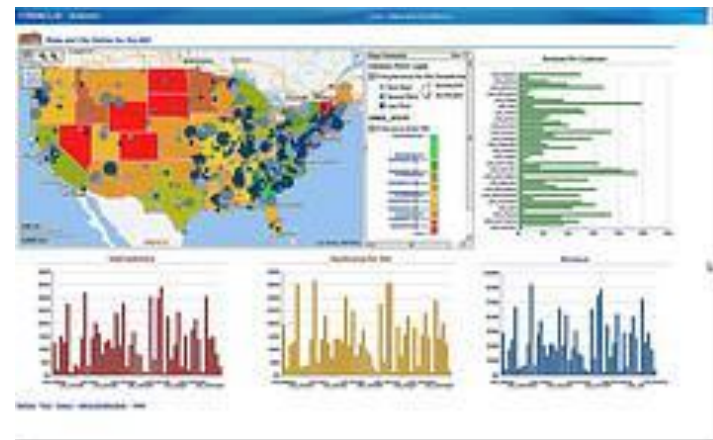
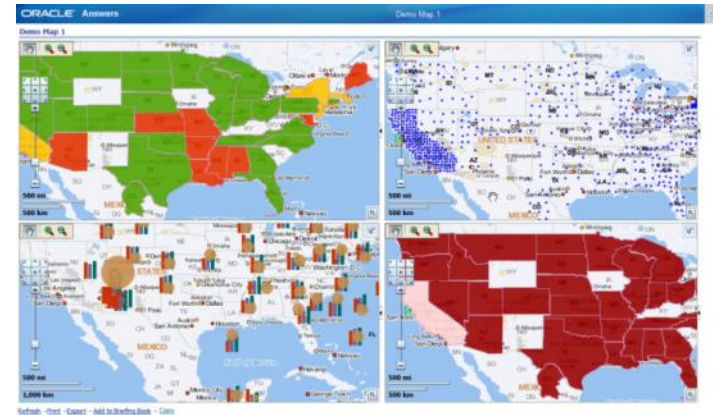
## Return on Investment

- Access to timely data for customer segmentation in the Siebel CRM campaign management system
- Batch window for the DW decreased by 50%
- Number of reports generated from the DW has increased by 10 times

# Spatial Integration

## Uncover Patterns Hidden in Tables

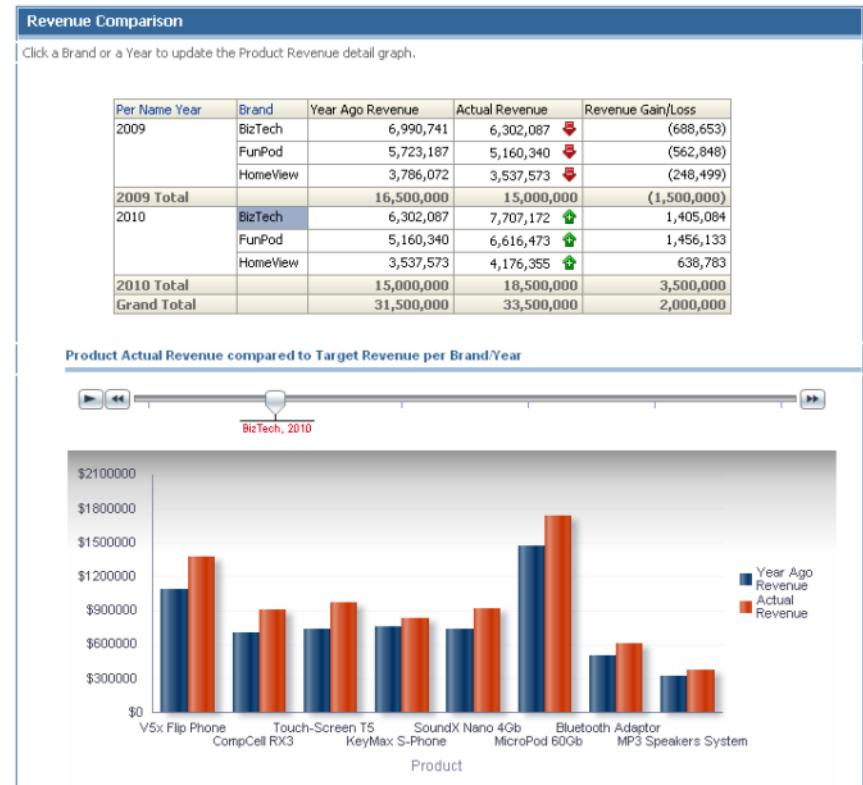
- Use geographic insights to innovate business processes
  - Manage location-based assets, people and property
  - Optimize service and sales territories for greater efficiencies
  - Deploy networks, infrastructure and utilities with confidence
  - Map resources, plan logistics and prepare for emergencies





# OLAP Integration

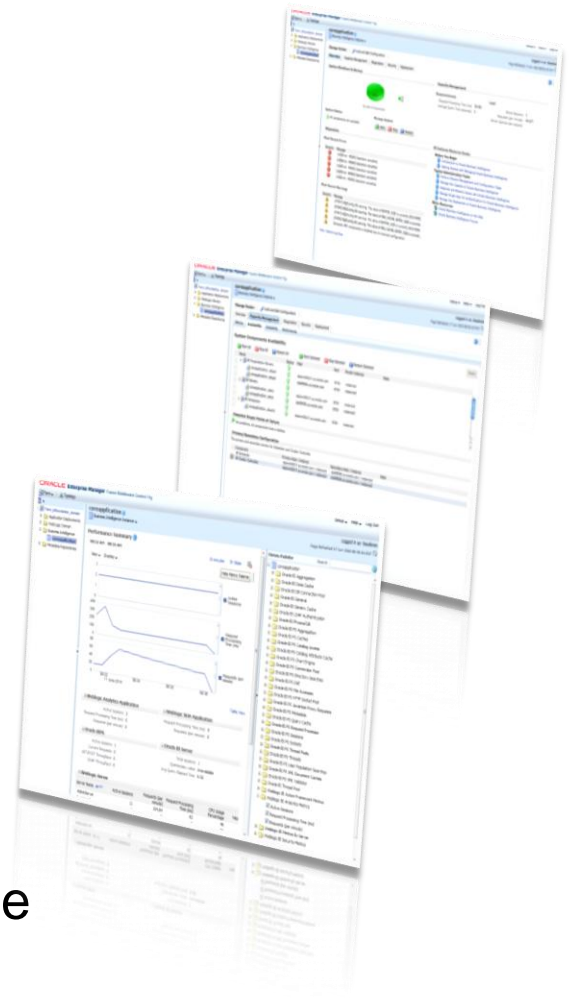
- First, seamless ROLAP & OLAP Browser Interface
- OLAP Query Building
  - Member selection
  - Calculated members
  - Hierarchical calculations
  - Custom aggregates
- Navigate across relational and multidimensional sources
  - Shared metadata, calculations, dimensions, security
  - Ragged & skip-level hierarchies
  - Performance for each source





# Unified Management & Security

- Enterprise Manager for all components / entire life cycle
  - Automates operational tasks
    - Develop, test & deploy including scale-out
    - Patch & upgrade cycles including HA patching
  - Performance monitoring & tuning
- Integrated security
  - Single Sign-on across the stack
  - Integrated with identity management
  - Oracle Virtual Private Database, database encryption & data masking recognized



# **Solutions** Integration





**Hardware and Software**  
Engineered to Work Together

**Larry Ellison**  
**CEO, Oracle**

**"By having all of the pieces in the stack—from the silicon all the way up to the application—we'll be able to deliver systems that run faster, are fault-tolerant, are highly secure — much more secure, much more performance, much more cost-effective, much easier to use than we ever could have delivered by simply delivering components."**

# Oracle BI Applications

## Complete, Prebuilt, Best Practice Analytics

### CRM ANALYTICS

#### SALES

- Pipeline Analysis
- Forecast Accuracy
- Up-sell/Cross-sell
- Cycle Times
- Lead Conversion
- Sales Team Effectiveness

#### MARKETING

- Campaign Effectiveness
- Customer Insight
- Product Propensity
- Market Basket Analysis
- Campaign ROI

#### SERVICE & CONTACT CENTER

- Service Effectiveness
- Customer Satisfaction
- Resolution Rates
- Service Rep Efficiency
- Service Cost
- Service Trends

#### PRICE

- Price Segments
- Price Waterfall Analysis
- Deal Life Cycle
- Deal Desk Analysis
- Product Pricing Performance

#### LOYALTY

- Member Demographics
- Membership Trends
- Promotion Cost
- Promotion Effectiveness
- Points Analysis

### ERP ANALYTICS

#### FINANCIALS

- General Ledger
- Accounts Receivable
- Accounts Payable
- Cash Flow
- Profitability
- Expense Management

#### PROCUREMENT & SPEND

- Direct & Indirect Spend
- Buyer Productivity
- Contract Compliance
- Supplier Performance
- Purchase Cycle Time
- Employee Expense

#### SUPPLY CHAIN & ORDER MGMT

- Revenue & Backlog
- Inventory Analysis
- Fulfillment Status
- Customer Status
- Order Cycle Time
- BOM Analysis

#### PROJECTS

- Project Funding and Budget
- Product Cost
- Project Revenue
- Project Billing
- Project Profitability

#### HUMAN RESOURCES

- Employee Productivity
- Compensation
- Talent Management
- Recruiting Analysis
- Learning Analysis
- Workforce Profile

### ORACLE BI SUITE ENTERPRISE EDITION PLUS

SOURCE ADAPTERS:

**ORACLE**

PeopleSoft

**SIEBEL**

J D EDWARDS

**SAP**

AND OTHER OPERATIONAL  
AND ANALYTIC SOURCES

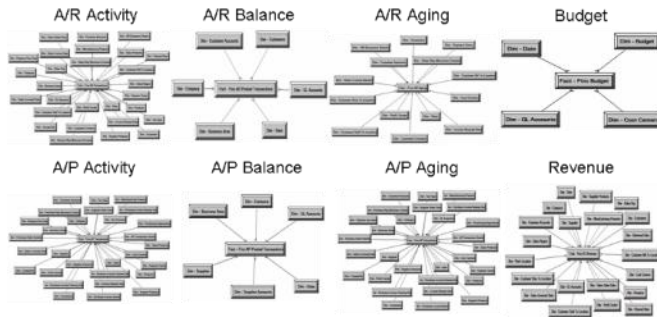
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# Oracle BI Apps Product Components

## Example: Financial Analytics

1

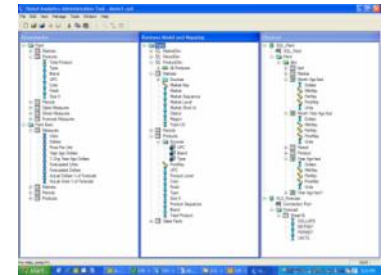
Pre-built warehouse with 16 star-schemas designed for analysis and reporting on financial analytics



3

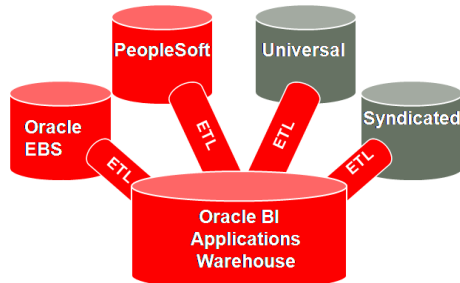
Pre-mapped metadata, including embedded best practice calculations and metrics for financial, executives and other business users

- Presentation layer
- Logical business model
- Physical sources



2

Pre-built ETL to extract data from over 3,000 operational tables and load it into the DW, sourced from PSFT, Oracle EBS and other sources

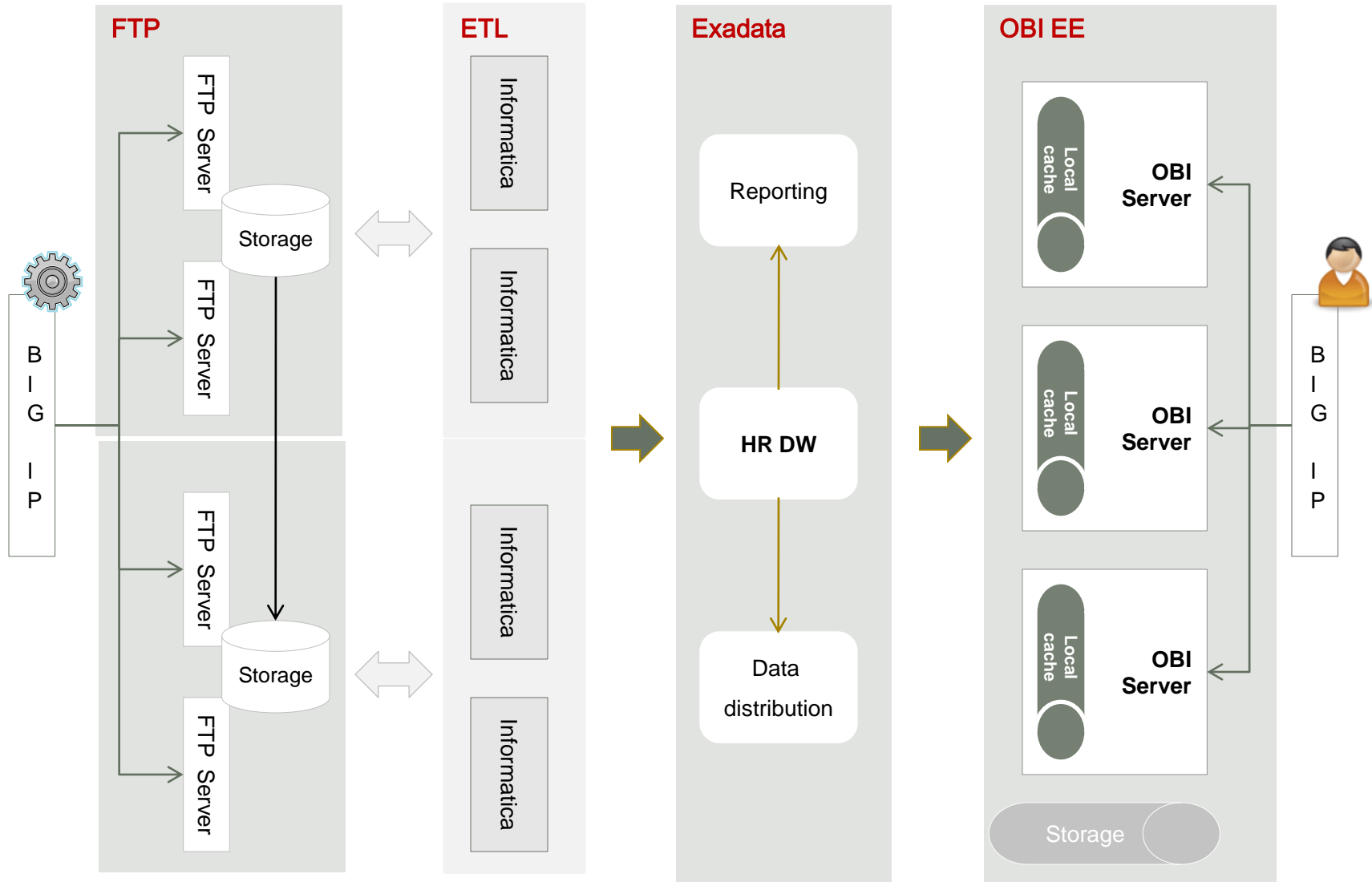


4

A “best practice” library of over 360 pre-built metrics, 30 intelligent dashboards, 200+ reports plus alerts for CFO, Finance Controller, Financial Analyst, AR/AP Managers and Executives



# Architecture for HR in Financial Services



# Oracle Industry Data Models



## Reference Data Model

**Aggregate Data Model**  
Relational (STAR) for BI  
OLAP for Analytical

**Derived Data Model**  
Data Mining/Complex  
Reports/Query

**Base Data Model (3NF)**  
Atomic Level of Transaction Data

- Deep communications, financial services, healthcare, retail & utilities knowledge combined with Oracle software expertise
- Jump-starts design and implementation
- Optimized for OBIEE, Oracle Database 11g and Oracle Exadata

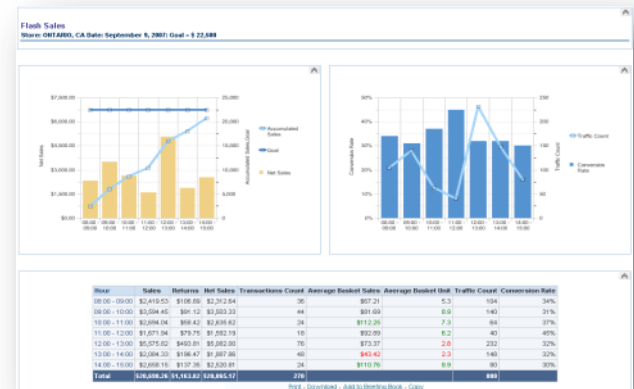






# Example: Oracle Retail Data Model

- Industry-standard compliant
- Addresses key retail business areas
  - 1200+ retail measures and KPI
  - Pre-built 15+ OLAP cubes
  - Pre-built 12+ data mining models
  - Extensive business intelligence metadata
- Easily extensible and customizable
- Works with any POS application

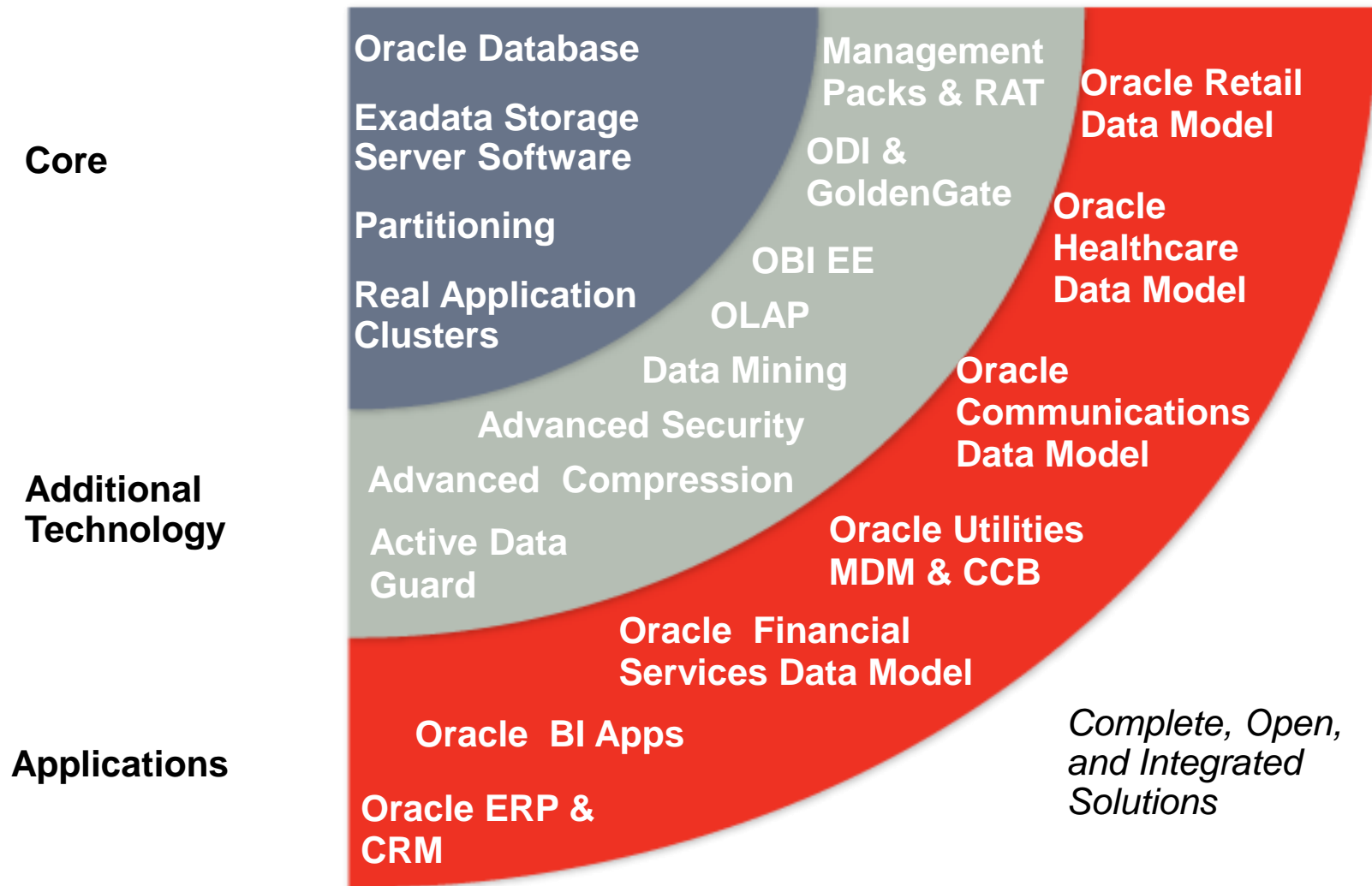


# Retail Business Area Coverage

## Example Analytics

Business Area	Example Analytics
<b>Store Operations</b>	Comparative Store Analysis, Traffic Pattern
<b>Point of Sale</b>	Multi Channel Analysis & Performance, POS Flow, Shopper Conversion
<b>Loss Prevention</b>	Unusual Transactions, Hidden Patterns, Attribute Importance, Statistical Outlier
<b>Merchandising</b>	Product Affinity & Mix, Growth and Trend, Contribution Analysis and Performance, Item-Basket, Fast & Slow Movers, Flexible Hierarchy
<b>Order Management</b>	Order Fulfillment, Integrated Analytic between e-commerce and Retail
<b>Inventory</b>	Forecast out-of-stock, Zero Selling, Inventory State Analysis, Vendor Scorecard, GMROI
<b>Category Management</b>	Shelf Analysis, Space Utilization, GMROS, Customer Purchase vs. Syndicated Data, Plan-o-gram Support
<b>Workforce Management</b>	Employee Utilization, SPIFF & Split Commission Analysis
<b>Customer</b>	Customer Clustering & Segment, Creation, Migration, Demographic, Psychographic and Behavioral Analysis
<b>Promotion</b>	Causal Factor, Halo Impact & Promotional Lift

# Oracle Software Solutions Footprint



# Hardware and Software Engineered to Work Together

- Oracle is *most popular database for Oracle BI*
- *Integration with Oracle OLAP & Spatial*
- Single sign-on / *integrated security*
- **Common management** through Enterprise Manager
- Oracle provides *single point of support*
- **Common implementation partners** / consultants
- **Common Fusion & Applications vision**
- Growing number of *industry solutions*
- Better integration = *lower TCO*
- Common **focus on openness** and standards

# More Information Needed?

- For more information on Oracle's BI and Exadata products, see:
  - <http://www.oracle.com/bi>