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Introduction to Oracle Data Warehousing / BI NY OUG December 8, 2010

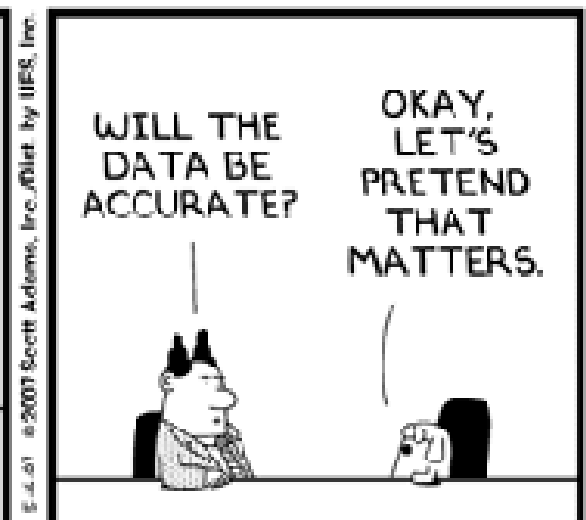
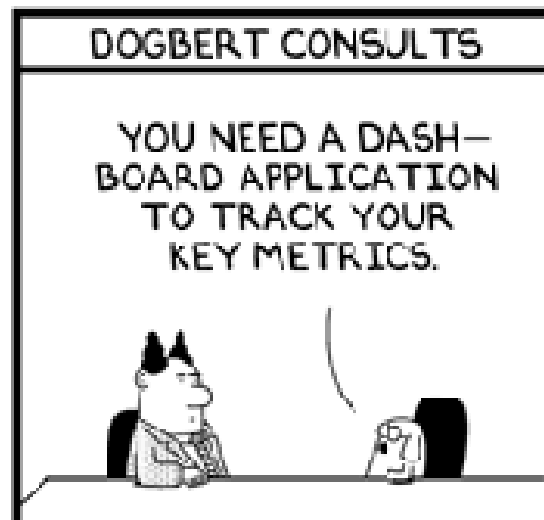
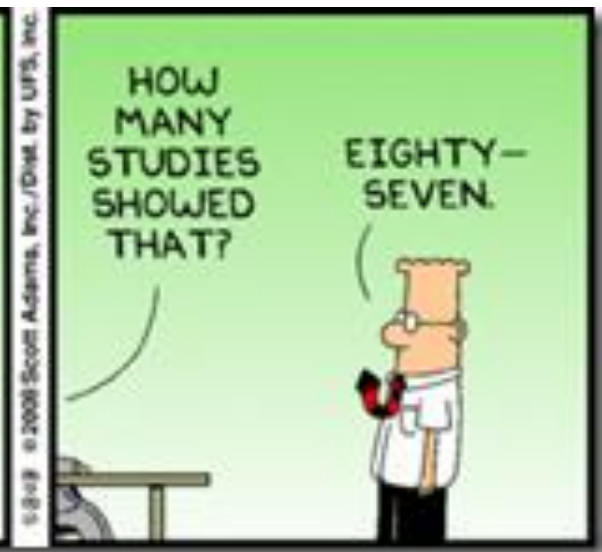
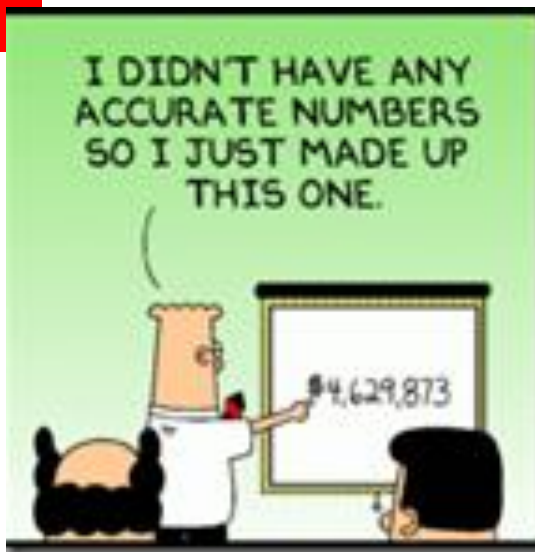
Sameer Singhal
Oracle Consulting

Agenda

- Evolution of Enterprise Reporting/BI
- Oracle EPM/BI Strategic Direction
- Overview of Oracle EPM/BI Tools - Technologies
 - BIEE
 - BI Applications
 - BI Publisher
 - Hyperion Essbase & Oracle OLAP
 - Real Time Decisions

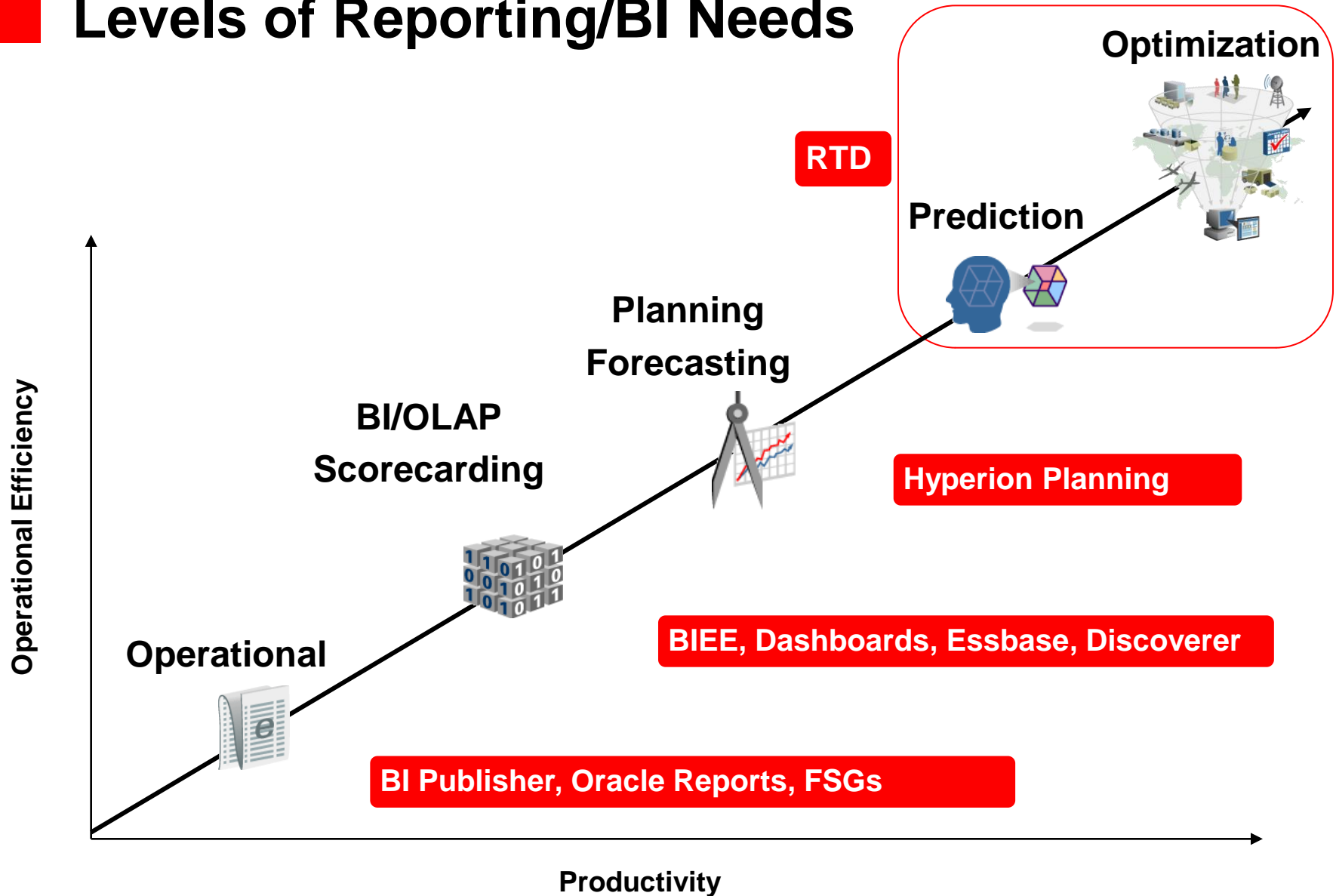
Evolution of Reporting / Business Intelligence



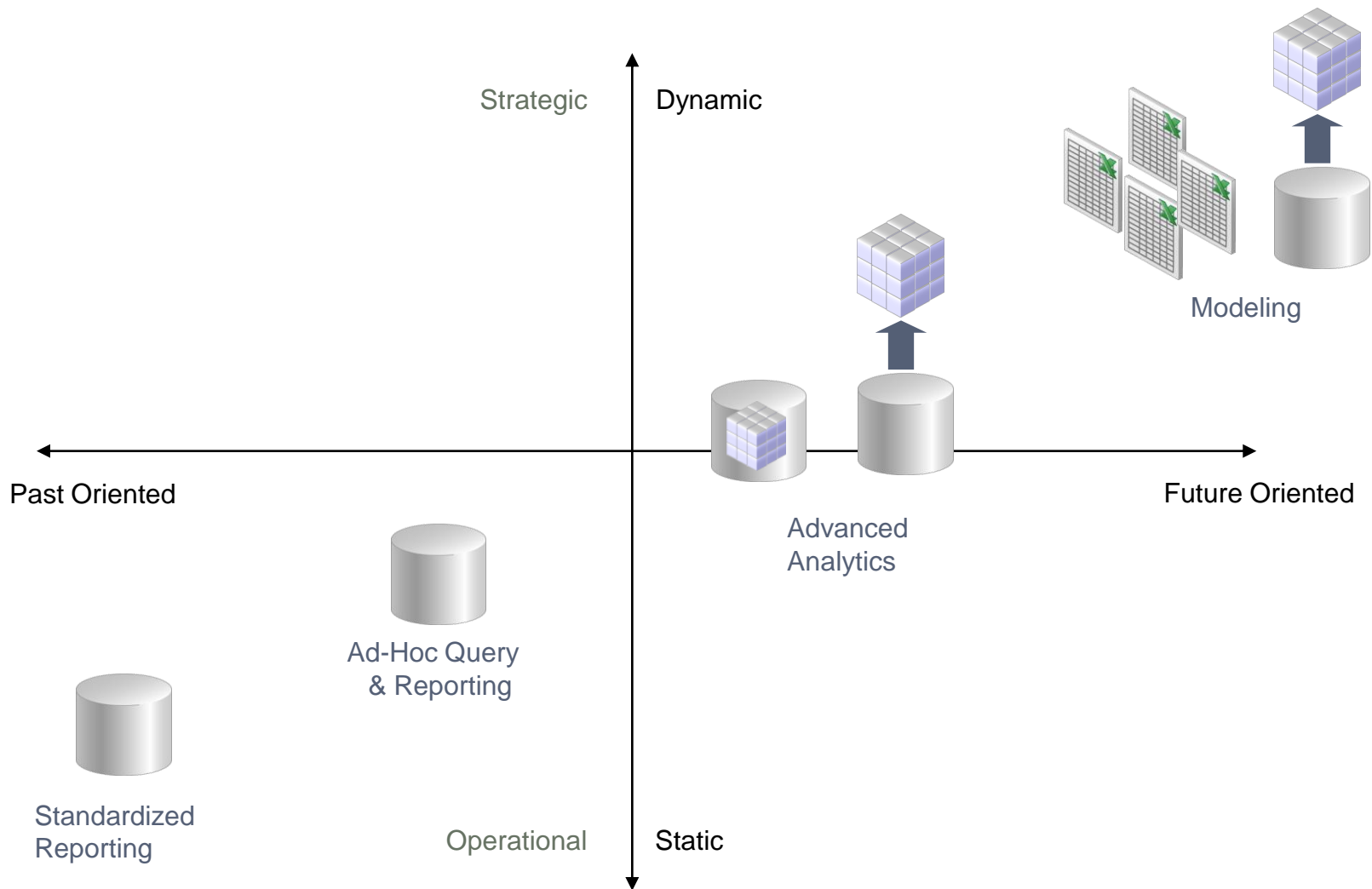


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Levels of Reporting/BI Needs

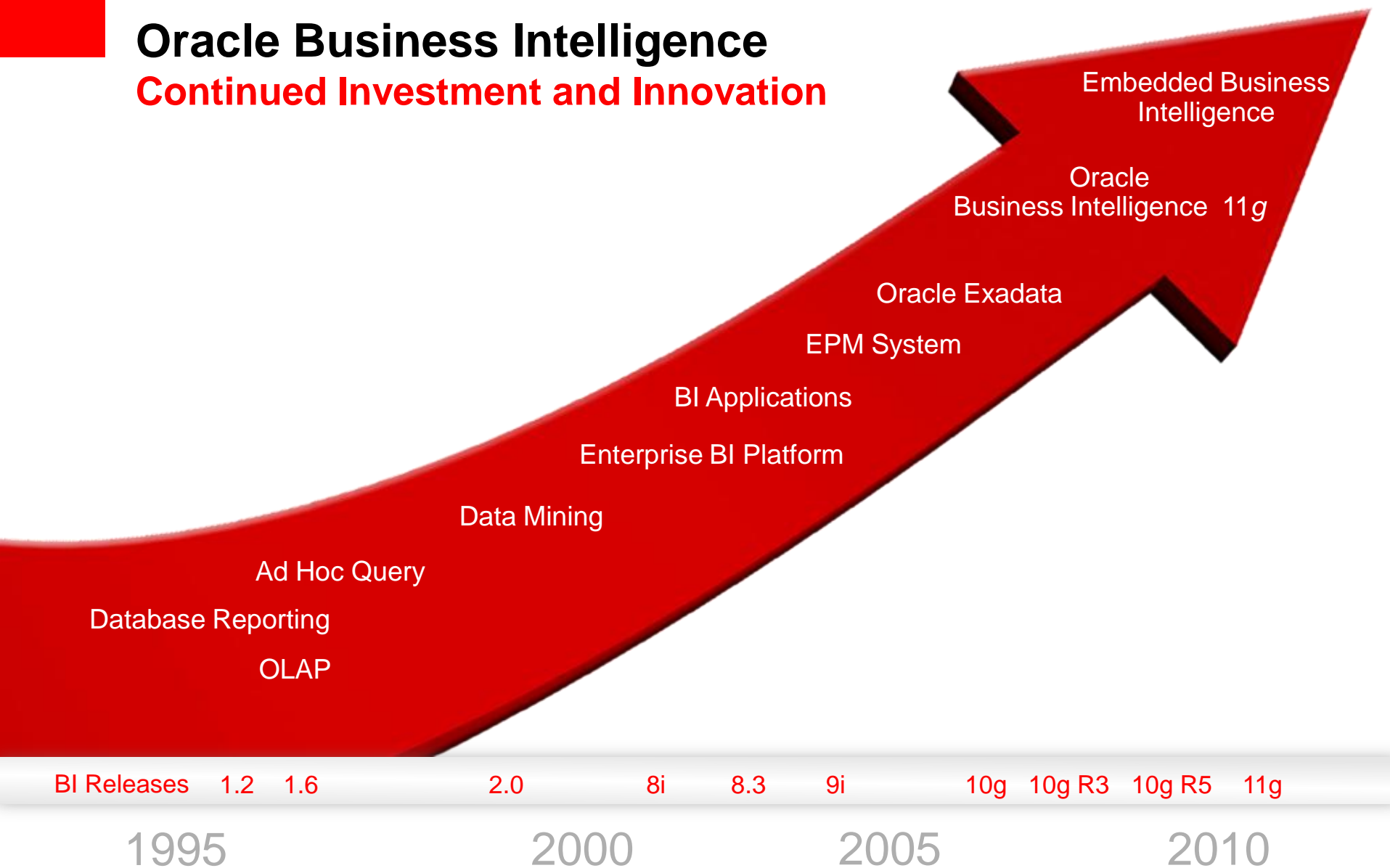


Modeling & Analytics in the BI Continuum



Oracle Business Intelligence

Continued Investment and Innovation



ORACLE

Management Excellence: The Next Competitive Edge



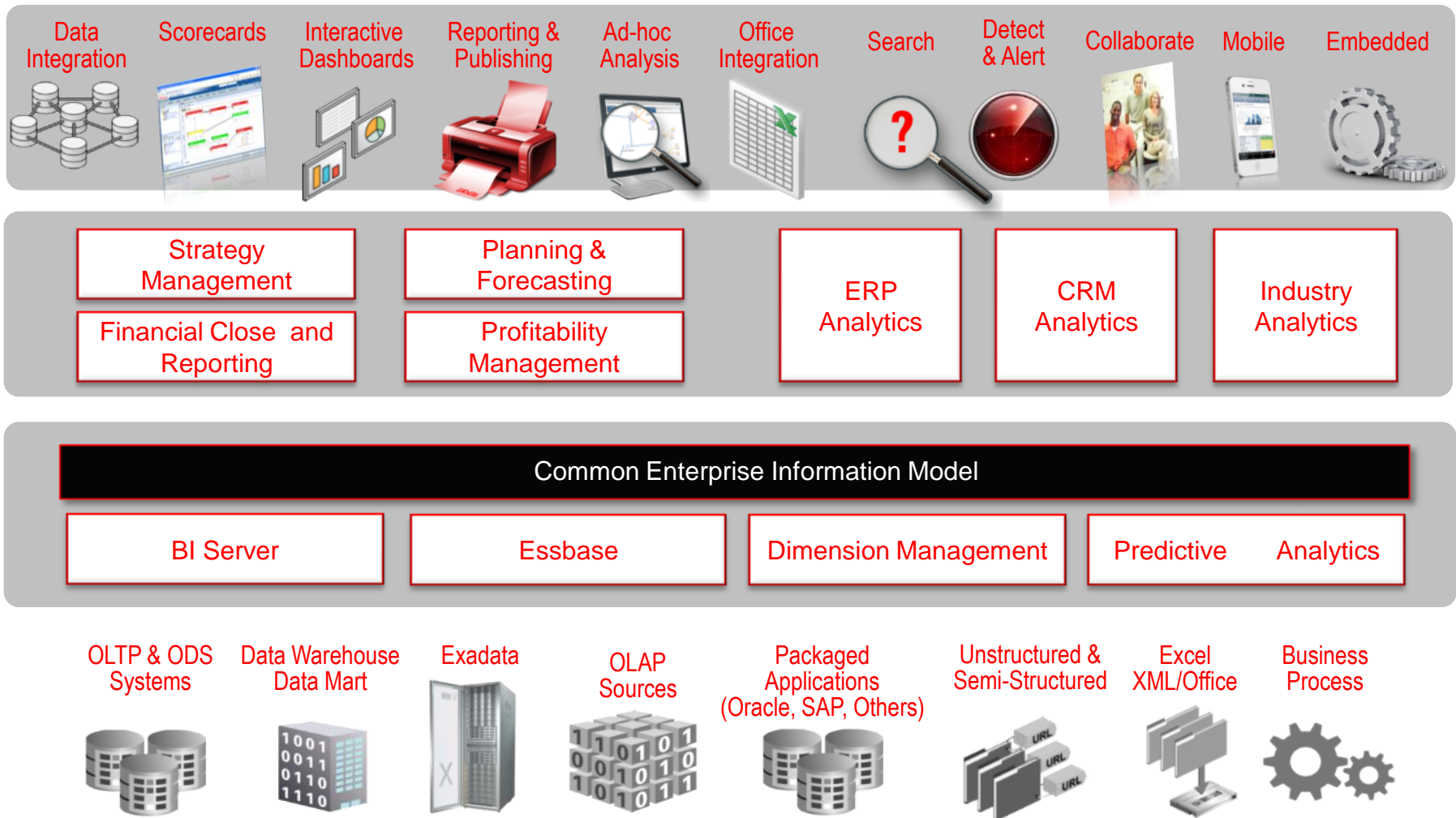
Oracle EPM/BI Strategic Direction

Where are we headed?



Oracle's Enterprise Performance Management System

Complete. Open. Integrated.



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Oracle BI Technologies - Tools

- All customer needs are different
- No size fits all
- Many different options within Oracle basket so analysis is key before deciding on specific products to use



Oracle Business Intelligence Enterprise Edition (OBIEE)

The New Standard for Enterprise Analytics

Oracle Business Intelligence 11g

Most Complete

- **First** common interface for analysis of relational ,OLAP, & XML data sources
- **First** BI solution to offer full spectrum of collaboration capabilities
- **First** BI solution that lets users initiate actions from dashboards
- **Most complete** Scorecard and Strategy Management application
- **Only** single solution for Web-based interactive and pixel-perfect production reporting

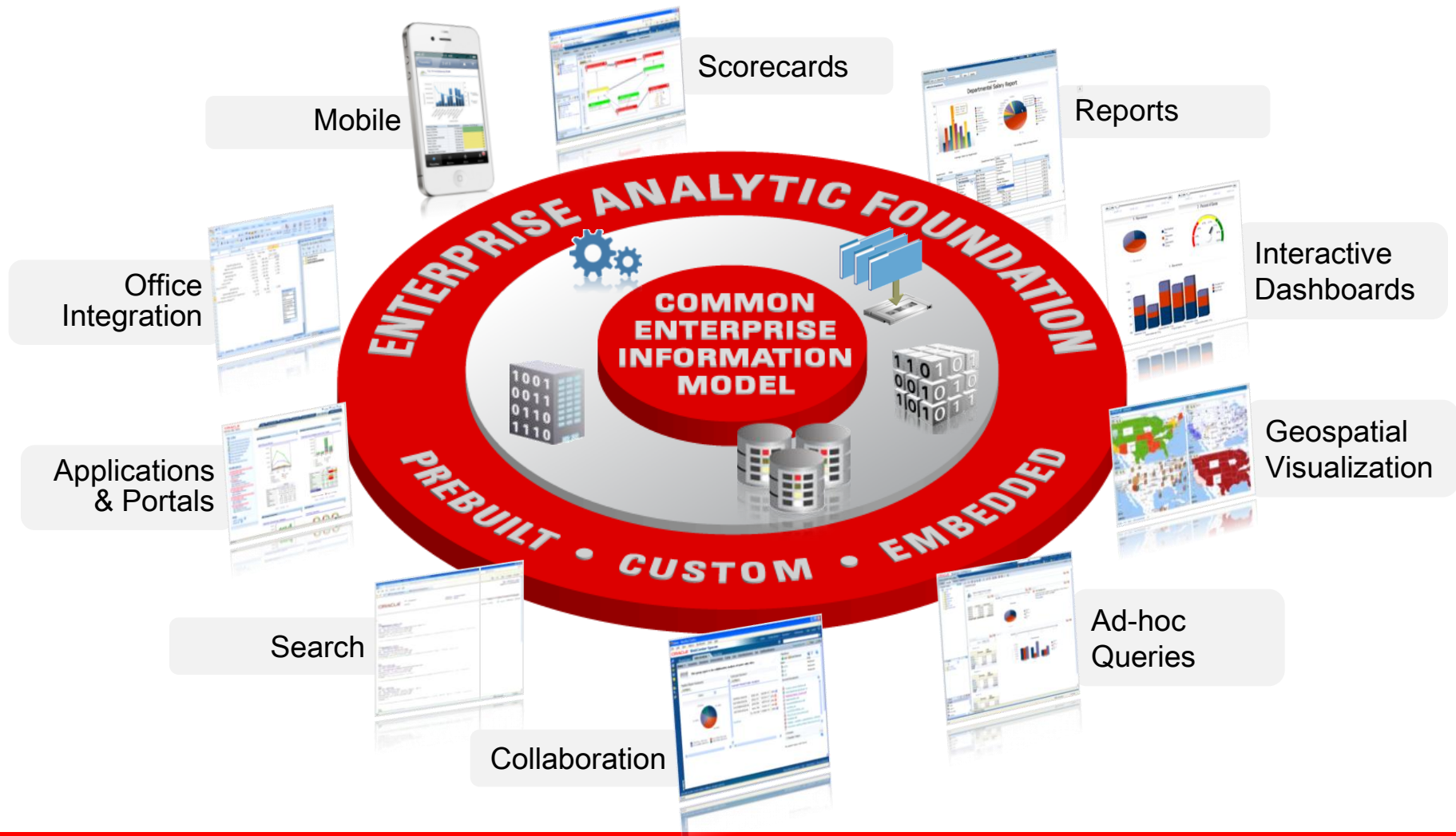


Most Integrated

- **Only** with integrated ROLAP, MOLAP, Enterprise Reporting, Scorecard
- **Only** Common Enterprise Information Model with semantic representation of all data sources and business logic
- **Only** integrated system for Enterprise Performance Management
- **Only** system management environment that integrates with the entire IT stack
- **Only** BI solution integrated with Oracle database, middleware, and applications

Unified End User Experience

Complete. Consistent. Accurate. Many Channels

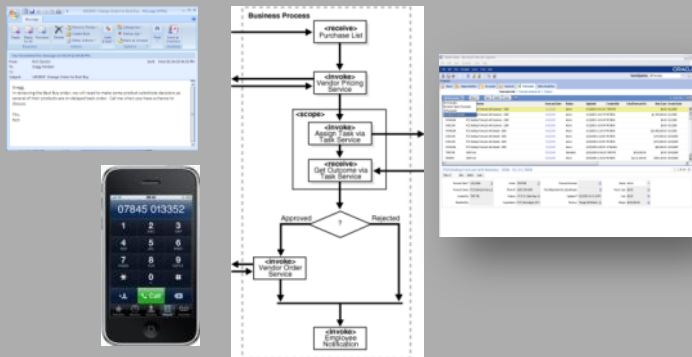


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Integrating Insights with Business Processes

Oracle Business Intelligence 11g

THE OLD WAY



Disconnected. Open Ended.

THE NEW WAY: Action Framework

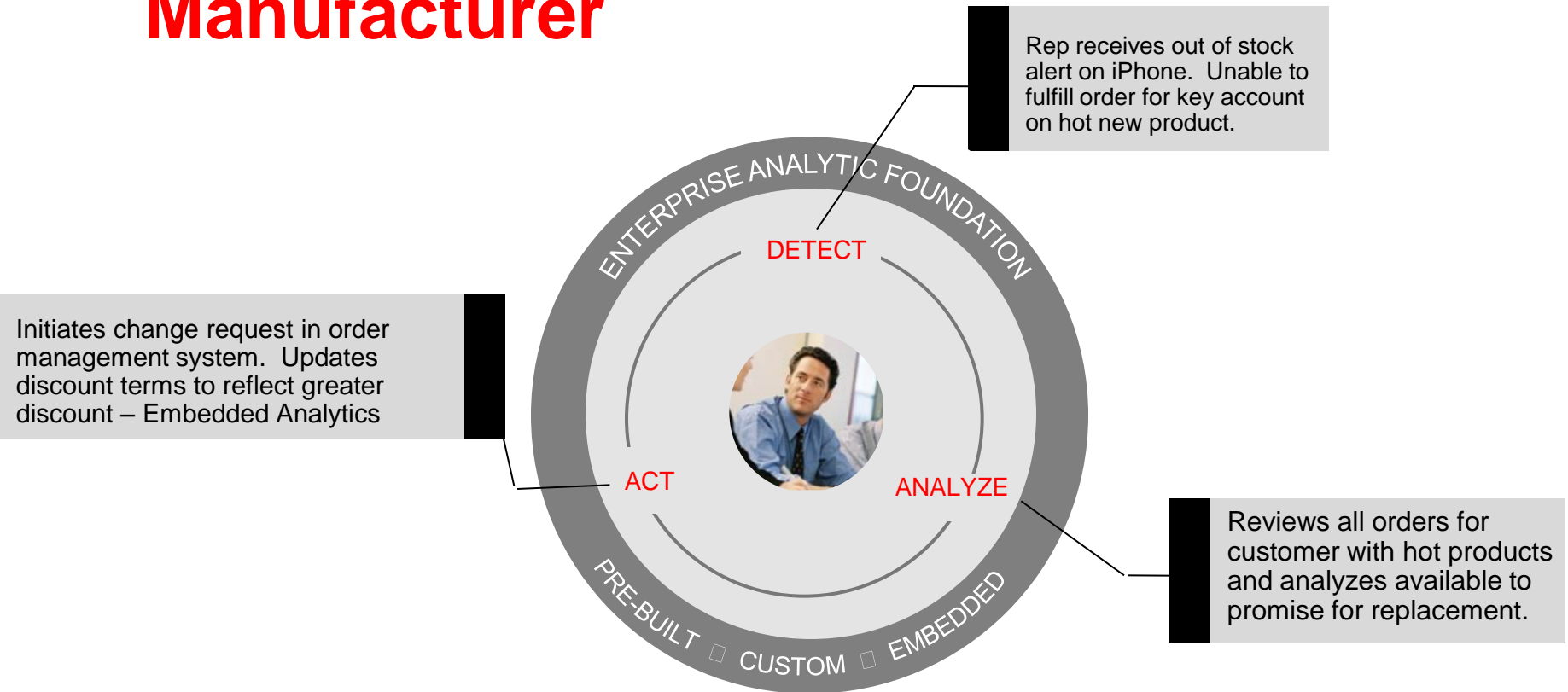


Integrated. Closed Loop.

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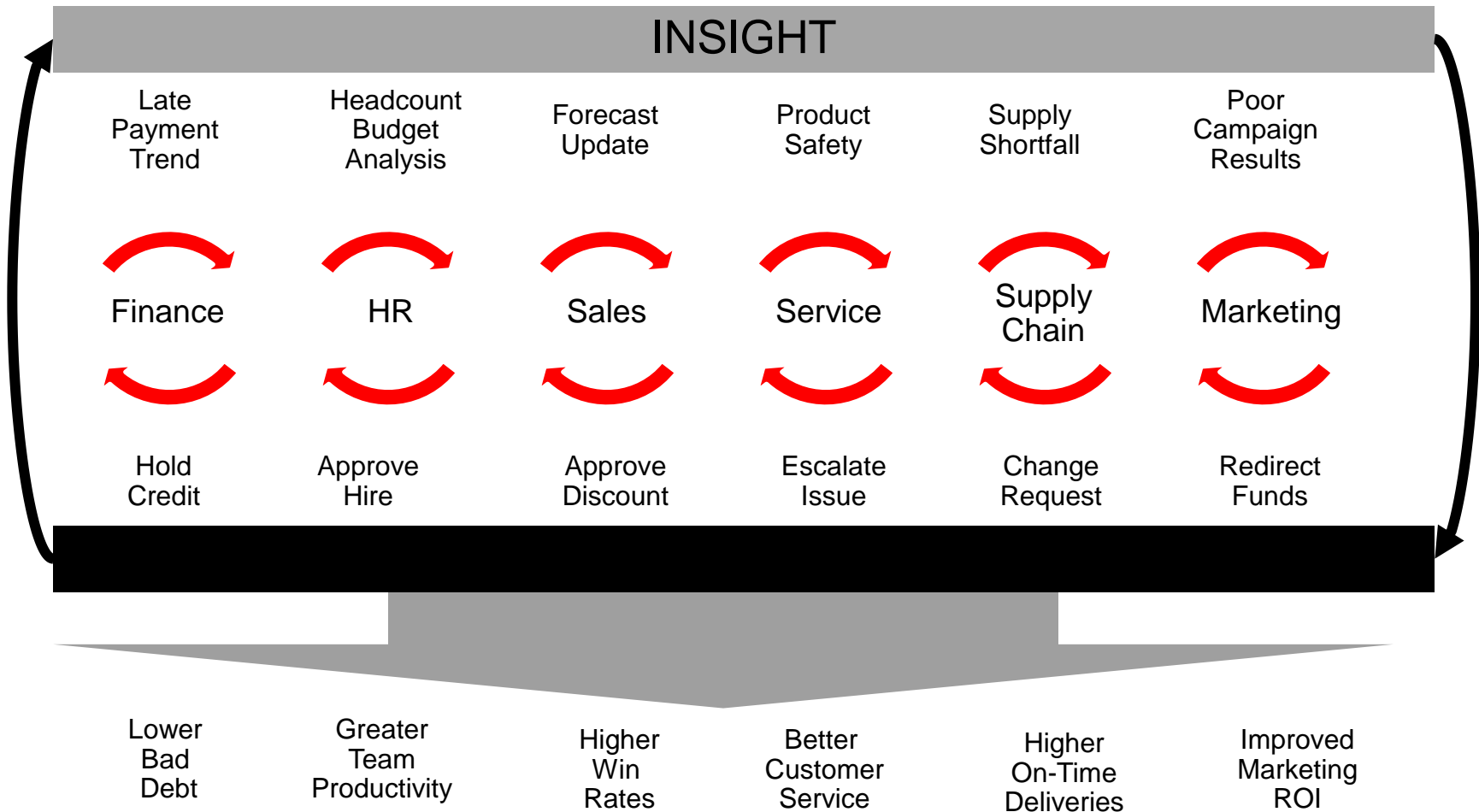
Intelligent Business Process

Sales Rep in Consumer Electronics Manufacturer



Value of Linking Insights to Action

Shortens Decisioning Cycle Time



Relational v Multi Dimensional View

- “Relational” style

- Data appears as flat attributes
- Column based filtering
- Column based calculations
- Ideal for query and reporting

Year	Quarter	Month	Revenue
2007	2007 Q1	2007 / 01	293830.50
		2007 / 02	222988.24
		2007 / 03	435387.54
	2007 Q2	2007 / 04	586120.15
		2007 / 05	1026102.75
		2007 / 06	1775053.34
	2007 Q3	2007 / 07	1838101.70
		2007 / 08	1609604.69

- “Multi Dimensional” style

- Data appears as dimensions
- Member based filtering
- Member based calculations
- Ideal for “train of thought” analysis

	Revenue
Time	
[-] Total	24903043.98
[+] 2007	11371280.12
[-] 2008	13531763.86
[-] 2008 Q1	3278888.22
[+] 2008 / 01	783228.26
[+] 2008 / 02	884926.17
[+] 2008 / 03	1610733.79
[+] 2008 Q2	6073909.66
[+] 2008 Q3	2874710.51

OBIEE – Best Fit

When to Use?

- Analytical Reporting
- Dashboards
- Interactive Reporting
- Adhoc Reporting

When Not to Use?

- High Volume Printing
- Scalable reports generation and delivery
- Reporting that requires multiple document formats and delivering via multiple delivery channels.
- Reports that require “pixel-perfect” formatting and layout and has graphical complexity

BI Applications (ERP/CRM)



Oracle BI Applications Suite

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
- Program Revenue
- Membership Trends
- 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

ORACLE

Oracle BI Applications

Prebuilt Solutions for EBS, PeopleSoft, Siebel, JD Edwards, and more

- Add insight to CRM and ERP applications
- Easy to adapt and extend
- Tight integration with OLTP systems
- Works with existing IT environment
- Fast time to value; Low TCO
- Over 2,000 customers



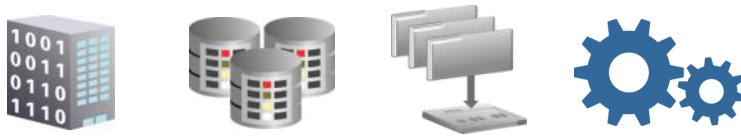
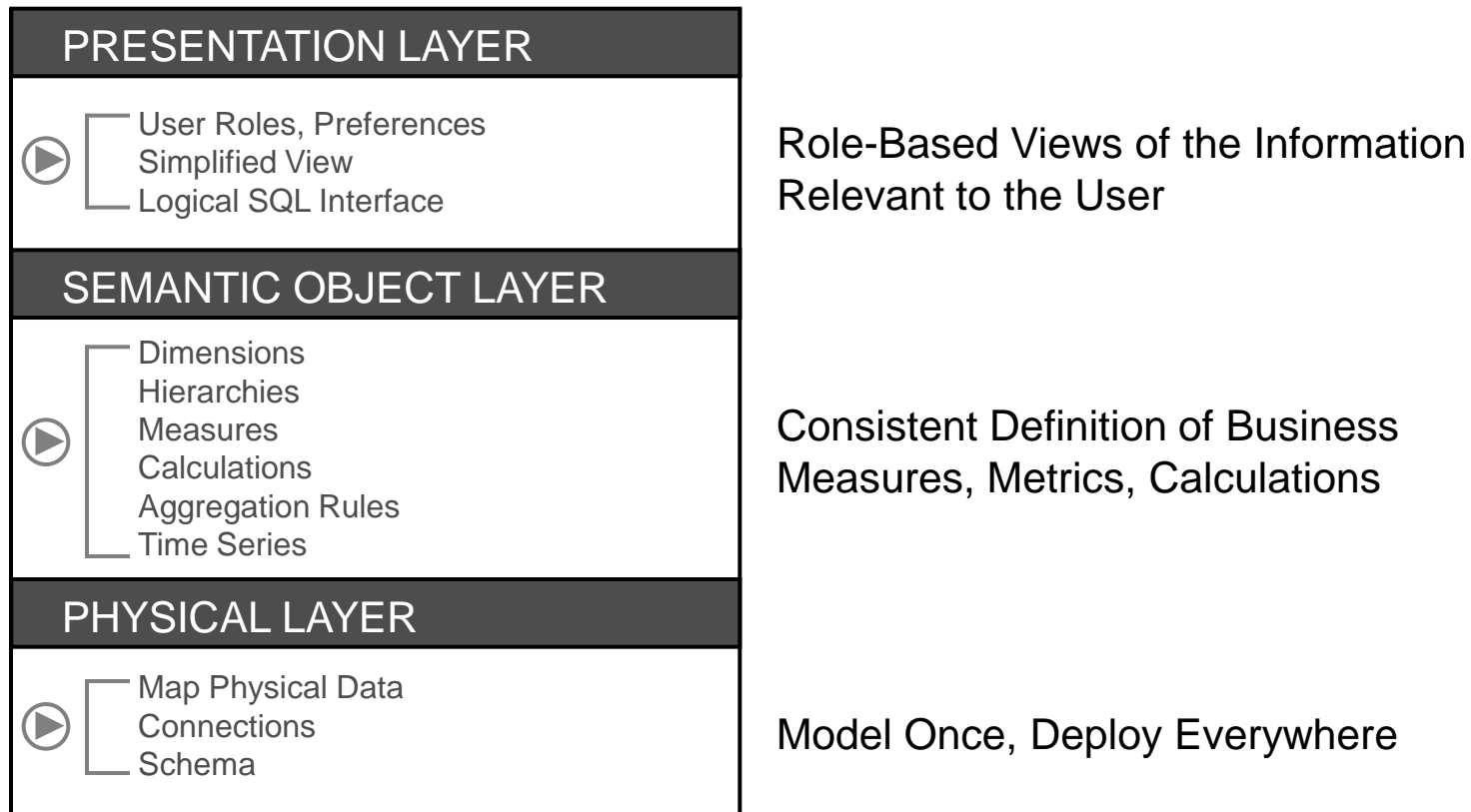
ORACLE®
PeopleSoft®
SIEBEL
JD EDWARDS



Sponsored by Oracle

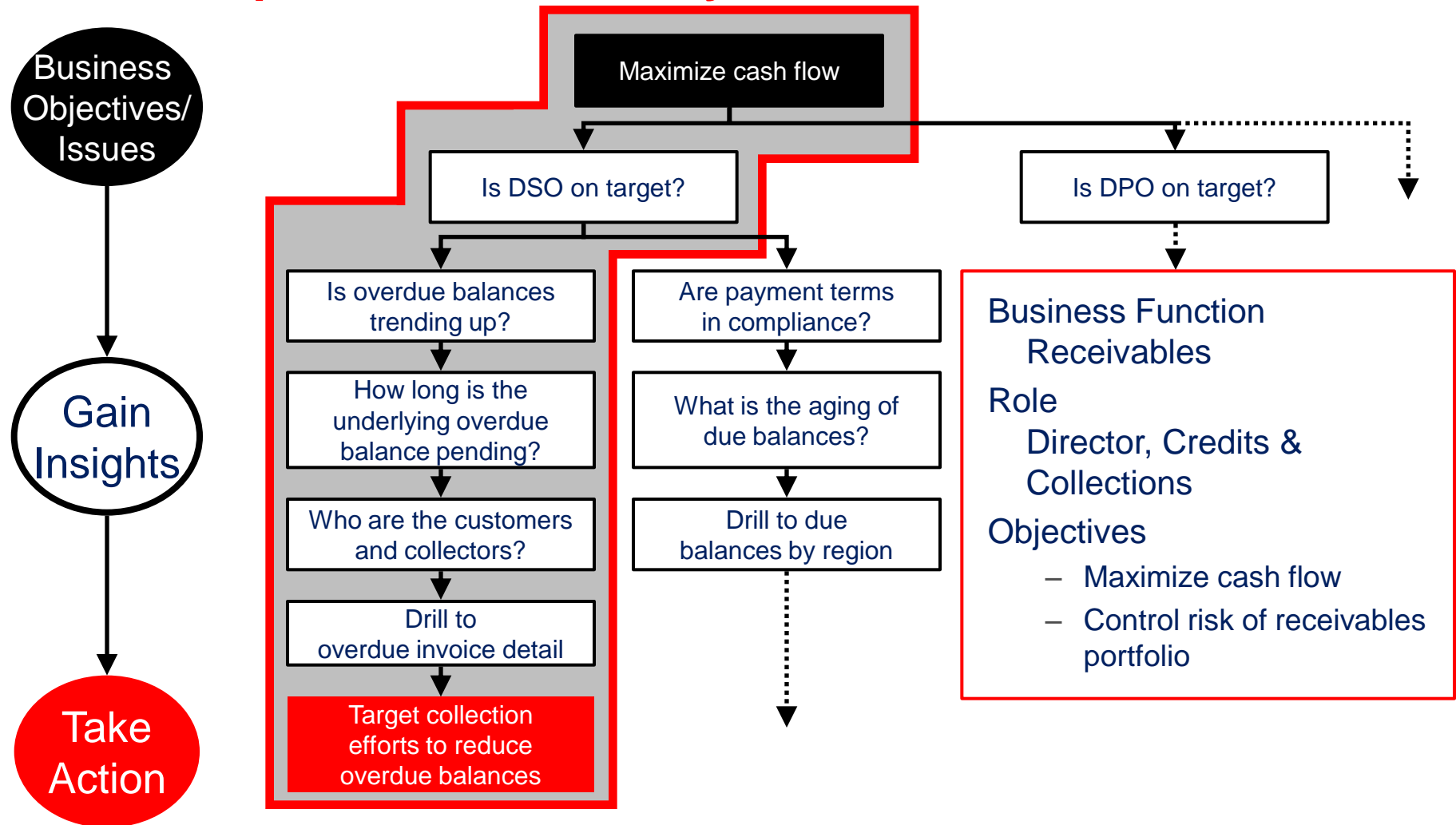
Common Enterprise Information Model

Single Consistent View and User Self-Sufficiency



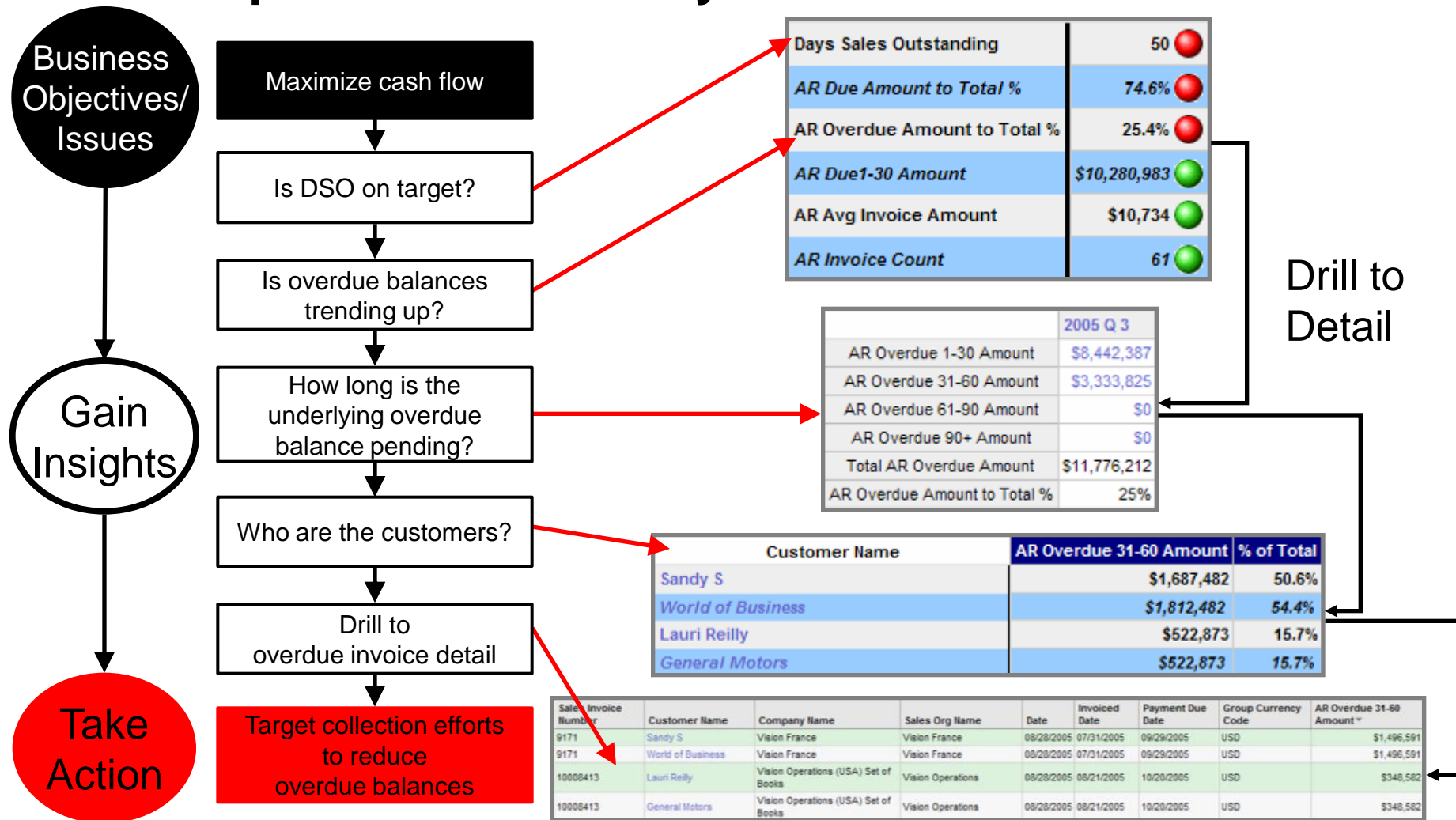
Best Practice Analytic Workflows

Example: Financial Analytics



Best Practice Analytic Workflows

Example: Financial Analytics



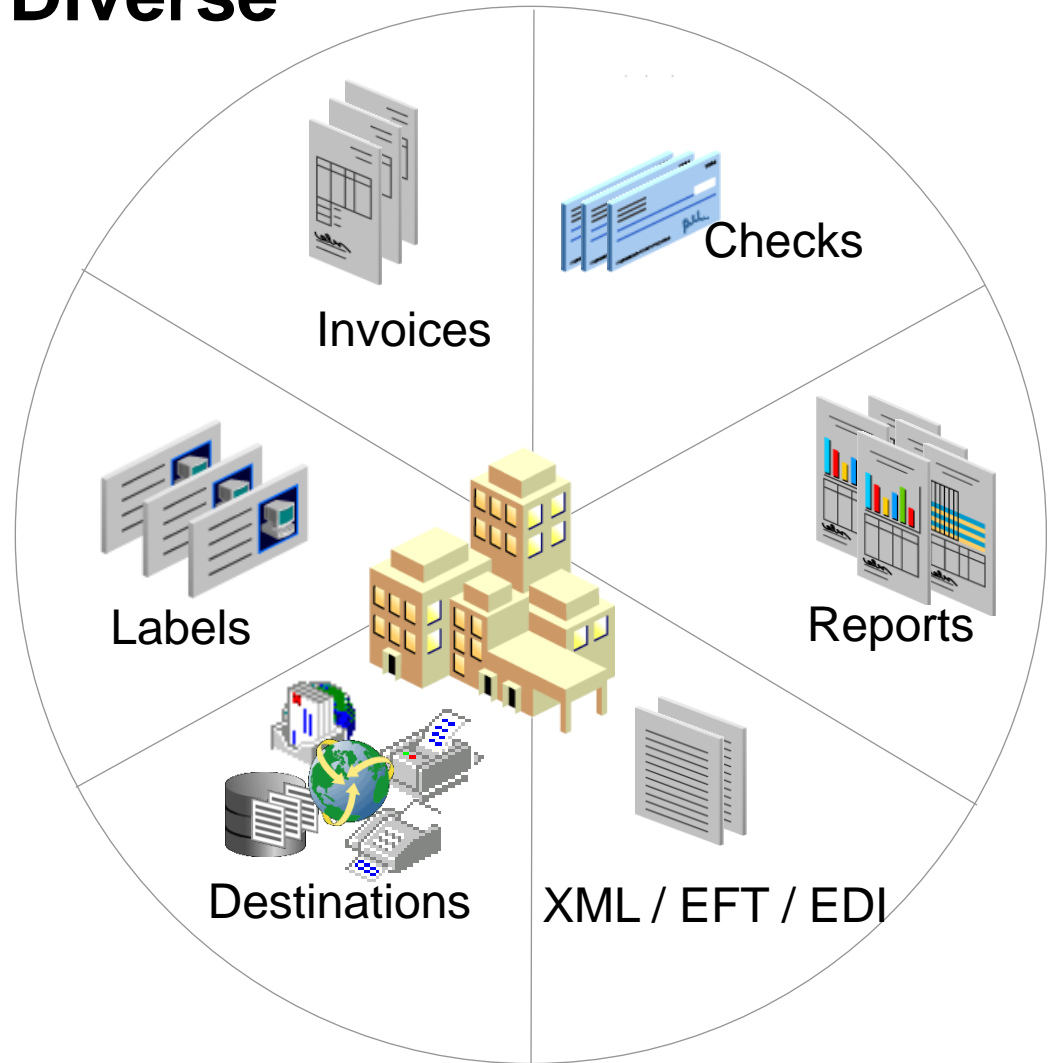
BI Publisher



Reporting Challenges

Requirements are Diverse

- High Fidelity Reports
- Partner Reports
- Financial Statements
- Government forms
- Marketing materials
- Contracts
- Checks, Labels
- XML
- EFT / EDI
- Multiple destinations

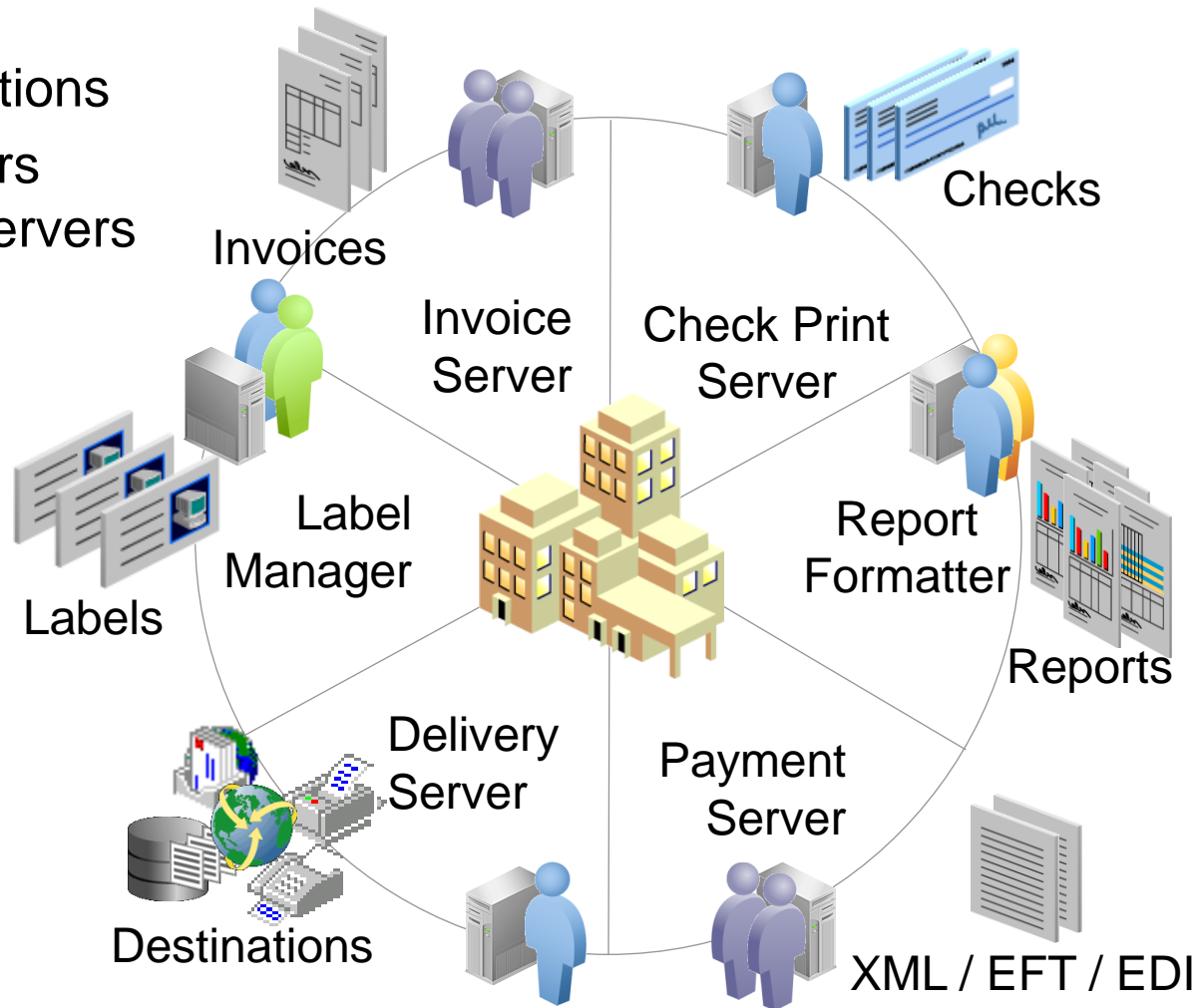


Reporting Challenges

Complex Infrastructure

- Multiple reporting solutions
- Highly-skilled engineers required to maintain servers and report formats

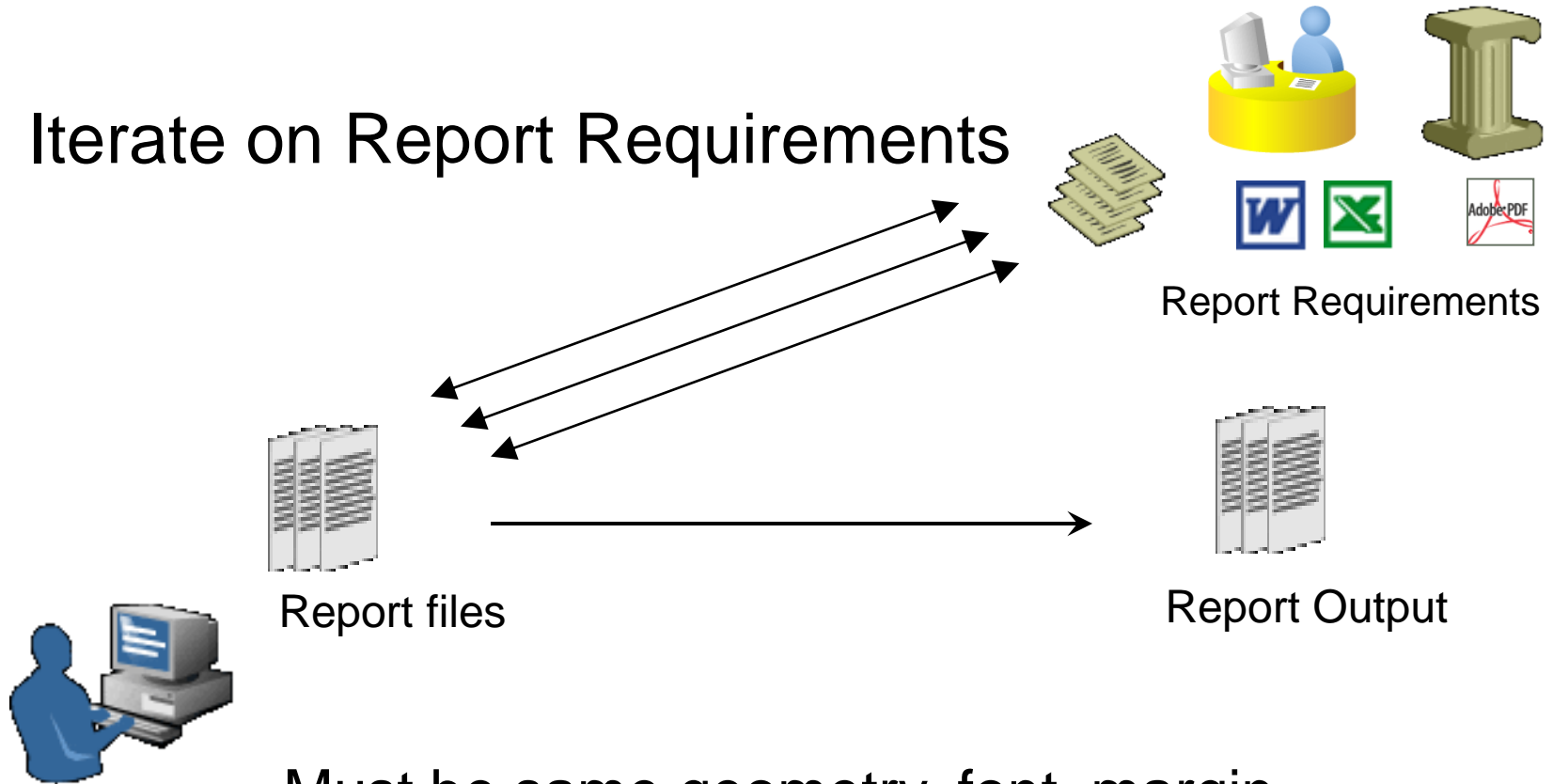
- Costly
- Time consuming
- Complex systems
- Expensive maintenance
- Labor intensive



Reporting Challenges

Slow Development

Iterate on Report Requirements

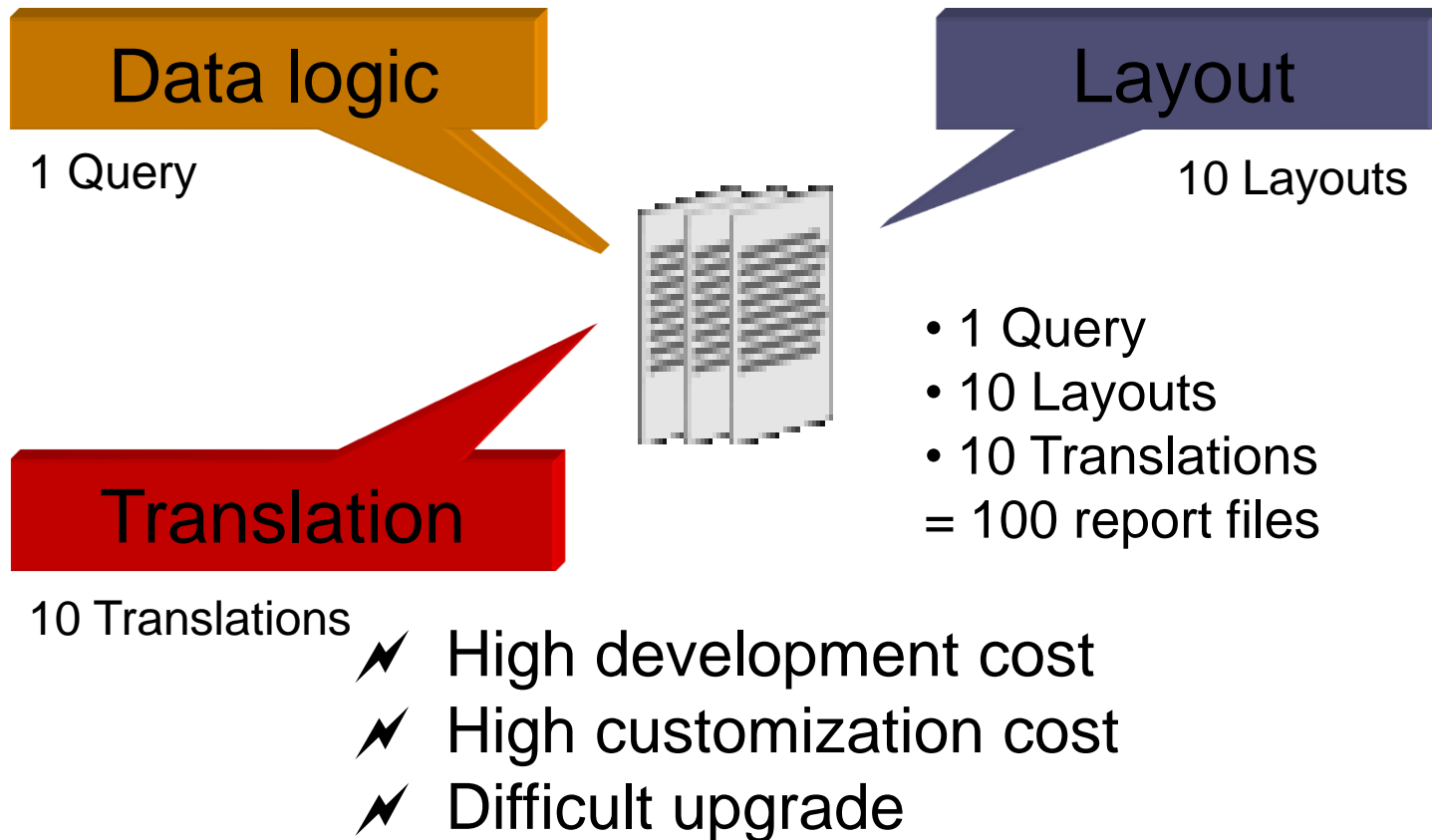


Must be same geometry, font, margin size, etc.

Reporting Challenges

Difficult to Maintain

Combined query, layout, and translation



Reporting Challenges

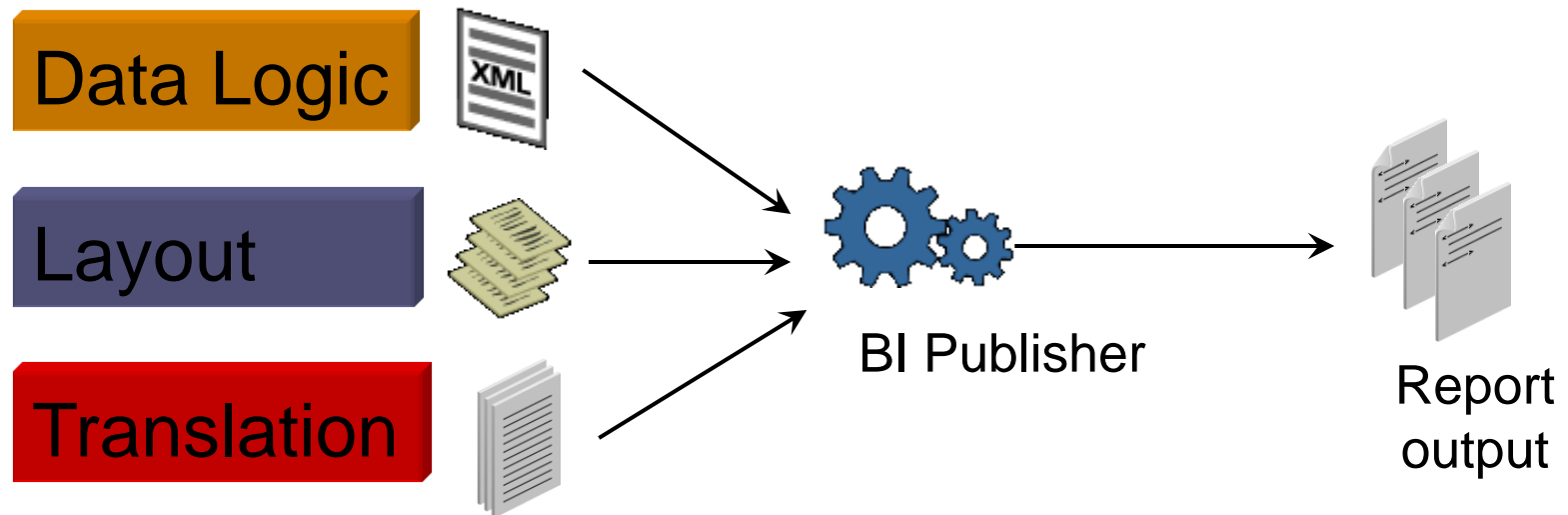
Other Issues

- Production Issues
 - Huge load on the transactional Data Base, shuts down the operation
 - Output file size, time to produce the reports ...
 - High maintenance, proprietary report programming languages require expensive specialists and consultants
- Global Deployment Issues
 - Multiple Instances required for different character sets
 - Insufficient support for Bi-Directional Languages
 - Dependence on Printer Character sets require language specific printers

BI Publisher Benefits

Simplified Maintenance

Separate query, layout, and translation



- ✓ Flexibility
- ✓ Reduced maintenance

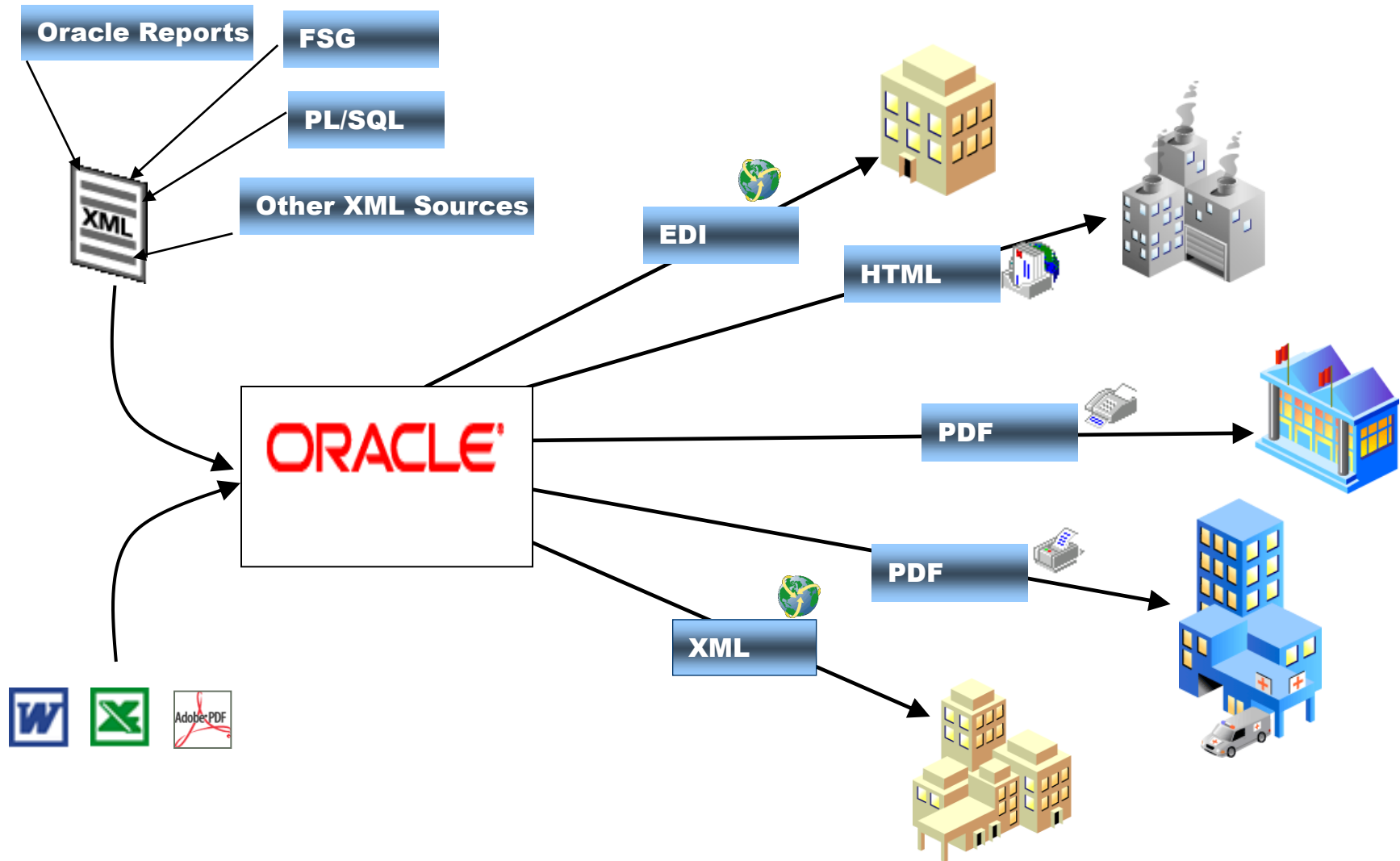
All your Reports and Documents

- ✓ Purchase Orders
- ✓ Labels / Bar Codes
- ✓ Collateral
- ✓ Government Forms
- ✓ eText
- ✓ Invoices
- ✓ Operational Reports
- ✓ Correspondence
- ✓ Financial Statements
- ✓ Checks

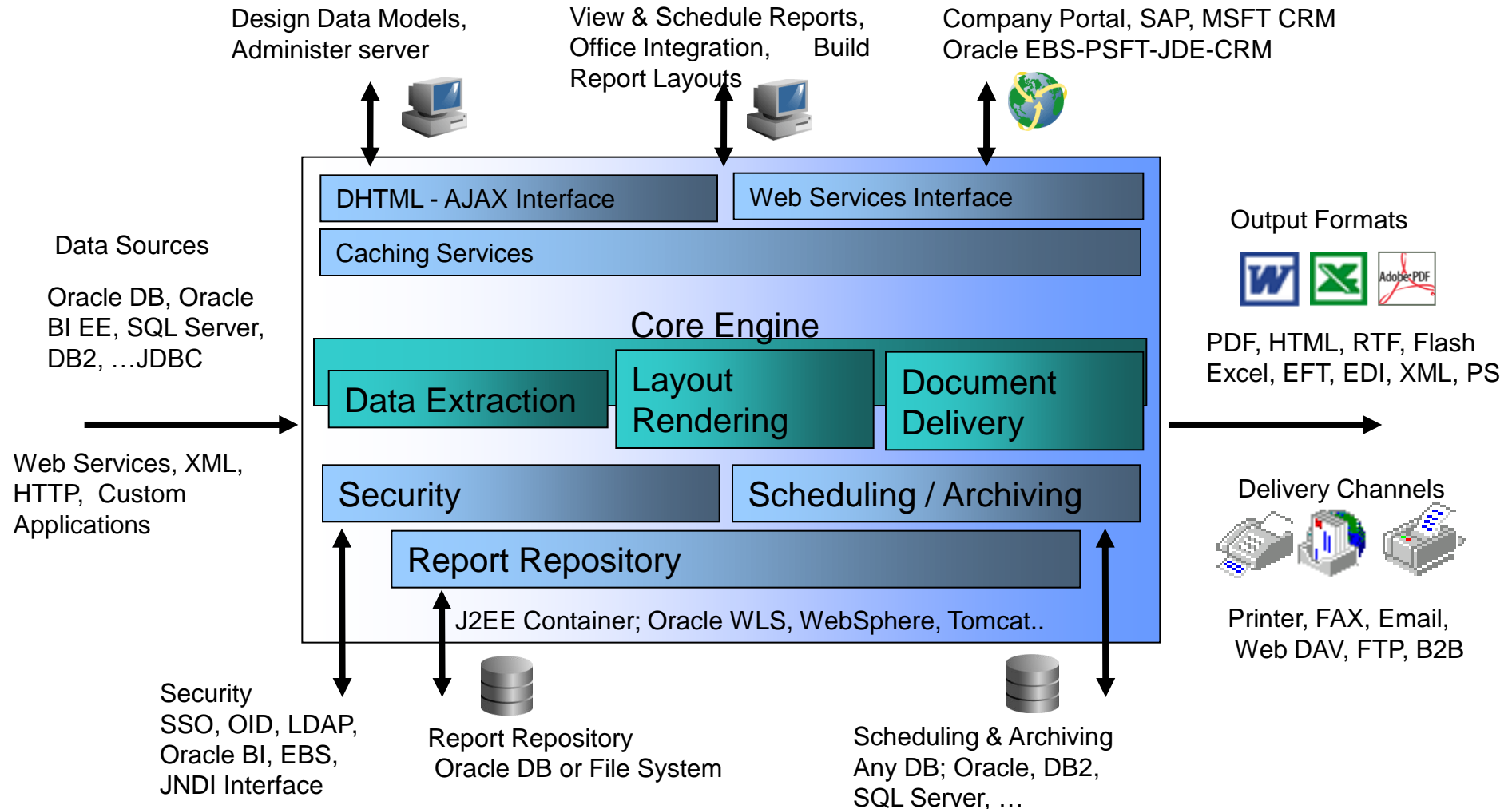
The collage displays several Oracle reports and documents:

- Invoice:** From My Toy Supplier, dated October 31, 2005. It includes a table with columns: Invoice Number, Invoice Date, Invoice Amount, Bank, and Open Balance. The total amount is \$5.00.
- General Ledger:** A report from Oracle Corporation, dated 11/22/2004. It shows a journal entry for an intercompany transfer of \$3,000.00.
- Check:** A check from Oracle Corporation, dated 11/22/2004, payable to Vision Corporation for \$2,100.00. The check number is 23404321.
- Bar Chart:** A bar chart titled "Acme Manufacturing 20015 Sample Project" showing a period ending date of 28-Dec-2007. The chart shows a steady increase in performance over time.

Bursting Delivery – Use Scenario



Oracle BI Publisher Enterprise – Technical Architecture



Oracle **OLAP**

Oracle **OLAP**
Hyperion Essbase



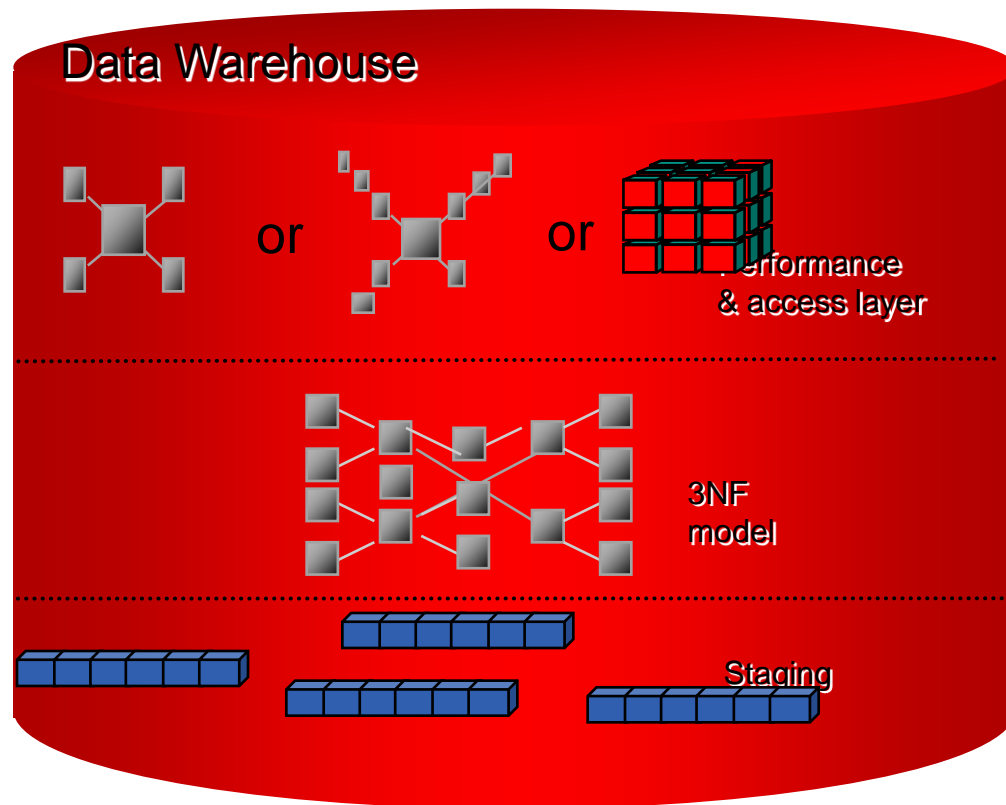
Oracle OLAP Option

- MOLAP server residing inside-DB OLAP server.
- The OLAP option IS NOT a separate application or process. IT IS inside the Oracle Database kernel therefore it uses the same resources.
- An OLAP user session connected to the database can be managed, traced, restricted the same as you would any other session or process.
- Data access via Excel add-in, Discoverer, BIEE, BIP etc
- Data loading via AWM/OWB/FILEREAD

Benefits of inside-DB OLAP Server

- Uses the same DB resources, plus scalability benefit.
- SQL access for reporting
- OLAP cubes can replace Materialized-Views
- Query-Rewrite functionality is available
- No separate certification of OLAP server for various Operating Systems or for various reporting tools.
- Administered by same Oracle DBA
- No additional server, other than the Oracle database server

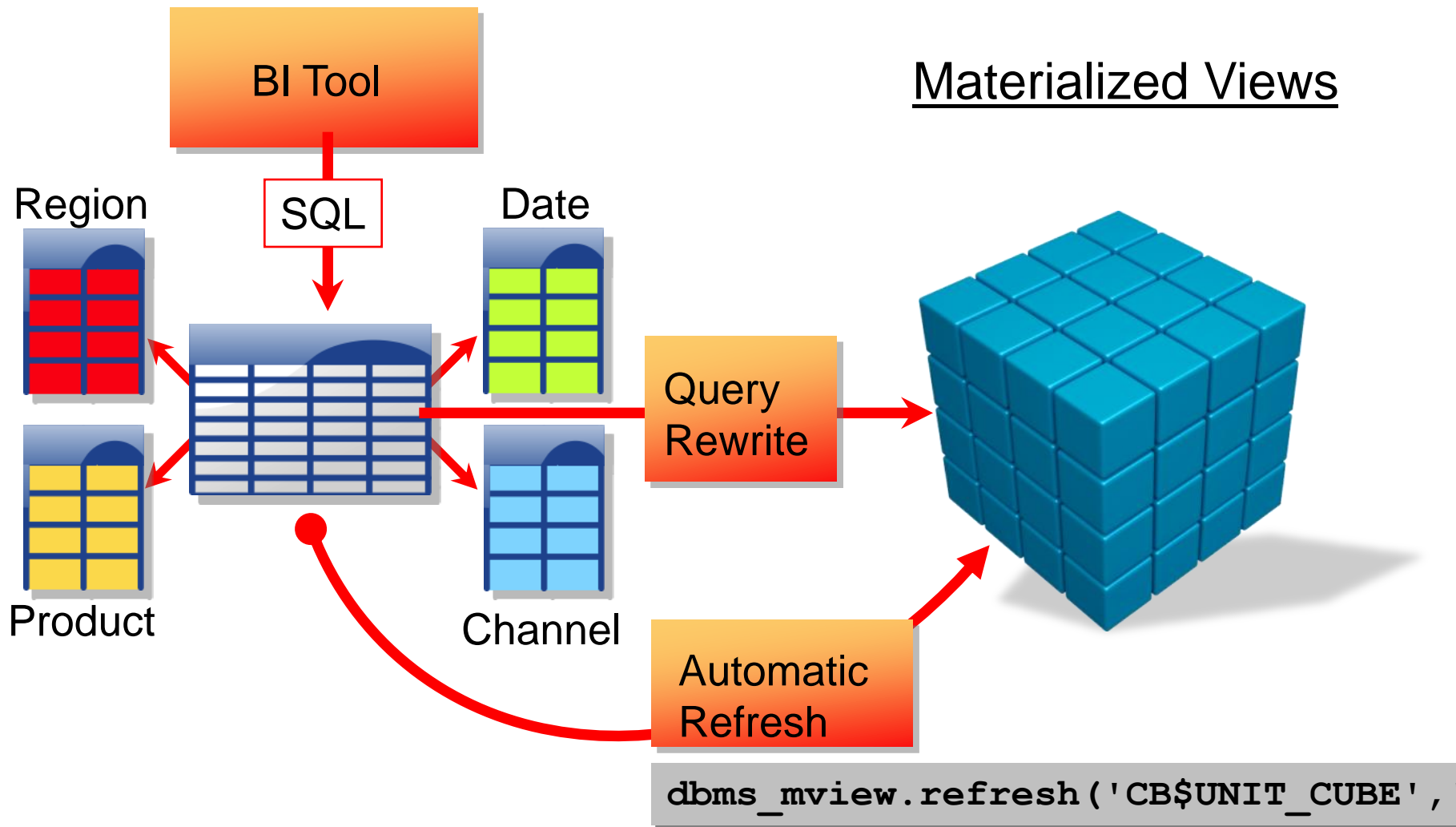
Role of OLAP Option in DW



- For the performance and access layer there are different approaches
- Oracle OLAP is one of the mechanisms for managing dimensional data for analysis
- Star / Snowflake + Materialized Views
- + OLAP represents a new, optimised method

Innovative Unique Feature of Oracle Database

Cube-Organized Materialized Views

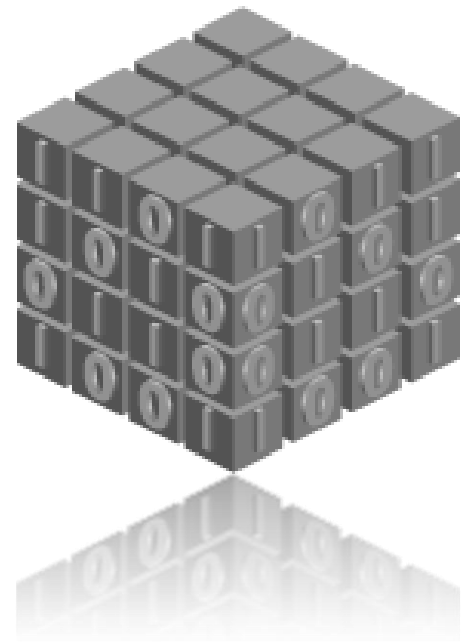


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Cube-based Materialized Views in Summary Breakthrough Manageability & Performance

- A single cube provides the equivalent of thousands of summary combinations
 - Transparently accessed via SQL Query Optimizer rewrite
 - Applications do not need to be rewritten
 - Refreshed using standard MV procedures
- Benefits over traditional MVs
 - More manageable as fewer objects
 - Faster to build and maintain
 - Smaller in size
 - Improved query performance



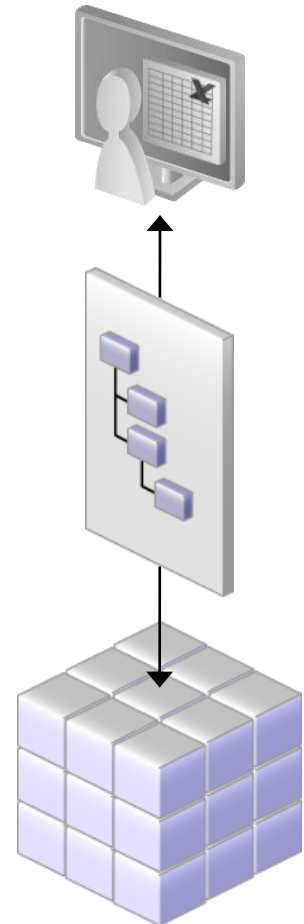
Essbase



Oracle Essbase

Leading M-OLAP Server

- Self-Service and Departmental Analysis
 - Forward-looking: Prediction & what-if analysis
 - Simple to model complex business scenarios
 - Sophisticated, cross-dimensional calculations
 - Procedural, financial, time series & custom calculations
 - Custom analytic applications
 - Multi-user write-back
- Best M-OLAP Performance & Scalability
 - Flexible storage – Block, Aggregate & Hybrid
 - Optimized load performance, trickle feed
 - High-availability clustering
 - Benchmarked sub-second response time with 20,000 concurrent users, 15 dimensions, 1 billion records
- Integrated with Oracle BI and Oracle EPM
 - Shared metadata, calculations, dimensions, security



Essbase

- Oracle Essbase is an industry-leading MOLAP server, which is part of Oracle BI Foundation.
- Essbase server is a component of Oracle EPM Applications.
- It can also be used independently to build custom complex analytic applications.
- Unlike Oracle Inside-database OLAP option, it is installed as a separate server outside Oracle database.
- Essbase server allows users to write-back data to an application under security.
- Supports Multi-processor and Multi-threading data-processing
- Partitioning capabilities (Replicated, Transparent, Linked)
- Cell-level security
- ETL tools – Informatica and ODI – can be used for data loading
- Multiple hierarchies support for each dimension via shared-members.

Essbase

- Accessed via Hyperion Visual Explorer, Excel Add-in or Smart View, BIEE, BIP and Essbase APIs (Java, C, VB)
- Generally bought and administered by business and not IT
- Preferred by customers who already use Hyperion Applications
- Excel UI is preferred choice of financial users
- Scalable
- Detail, detail, detail
- ***Instantaneous calculation times***, OK, virtually instantaneous calculation times
- Customizable – ***look at things my way***
- Data is natively in ***EXCEL***

When Oracle OLAP ? When Essbase?

Oracle OLAP

- Maintenance - IT
- Source – Oracle databases
- Existing Investment – Oracle DW
- Considerations -
 - Better query performance from SQL tools
 - Replace MVs with OLAP cube based MV
 - simplifying maintenance
- Data Access – Discoverer, BIEE, Excel etc

Essbase

- Maintenance - Business
- Source – Multiple & heterogenous
- Existing Investment – Hyperion PM
- Considerations –
 - MS Office usage
 - Non Oracle security (say MS based)
- Data Access – SmartView, Visual Explorer, BIEE

Real Time Decisions **RTD**



Make the Most of Each Customer Attention

Customer Intentions

Content



Interactions

Customer Attention

Example: Oracle RTD for Intelligent Offer Generation

The screenshot displays the Oracle RTD (Real Time Decision) interface. At the top, a navigation bar includes 'File', 'Edit', 'View', 'Navigate', 'Query', 'Tools', and 'Help'. Below this is a 'Saved Queries' section. The main content area is titled 'Contact: Linda Johnson > Contact:'. It features a 'Home' button and a 'Contacts List' tab. The 'Contacts List' tab is active, showing a list of contacts. The contact details for Linda Johnson are displayed, including her last name, first name, job title (Student), and email address. A yellow callout box points to this information, stating: 'Linda Johnson is recognized as a student living in San Mateo'.

Below the contact details is the 'Contact Summary (RTD)' section. It includes a 'Retention Action' tab. The 'Retention Action' tab shows a 'Churn Indicator' of 15% and a 'Treatment' of 'No Action Required'. A yellow callout box points to this section, stating: '... based on Linda's customer and usage profile, RTD predicts that Linda currently has no significant risk of churning, and therefore no retention treatment is warranted, and ...'.

Below the retention action is the 'Intelligent Offers' section. It shows a list of offers. The first offer is 'TK-S2 Easy Savings Plan' with a score of 4 stars and a description: 'The perfect high interest rate plan for'. A yellow callout box points to this offer, stating: '... that the "Easy Pay Saving Plan" is the marketing offer that is most appropriate for Linda.'

The 'Intelligent Offers' section also includes a table with columns: 'Name', 'Score', 'Information', 'Campaign', 'Parent Campaign', 'Purpose', 'Objective', and 'Period'. The table shows the 'TK-S2 Easy Savings Plan' as the top offer.

RTD for Optimizing Customer Interactions

Analytical Domain

Campaign &
Product Catalogs



Offers
Products

Content
Management



Creatives
Content

Catalogs
Ad Server



Promotions
Ads

Transaction
Data

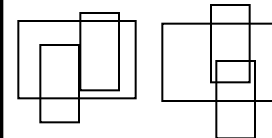


Profiles
Messages

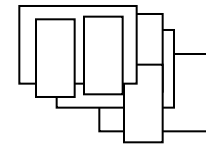
Interaction Optimization



Goals
Rules
Predictive Models
Choices
Eligibility
Automation
Reports

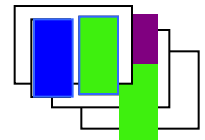


Messages &
placements

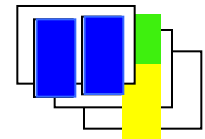


Interactions

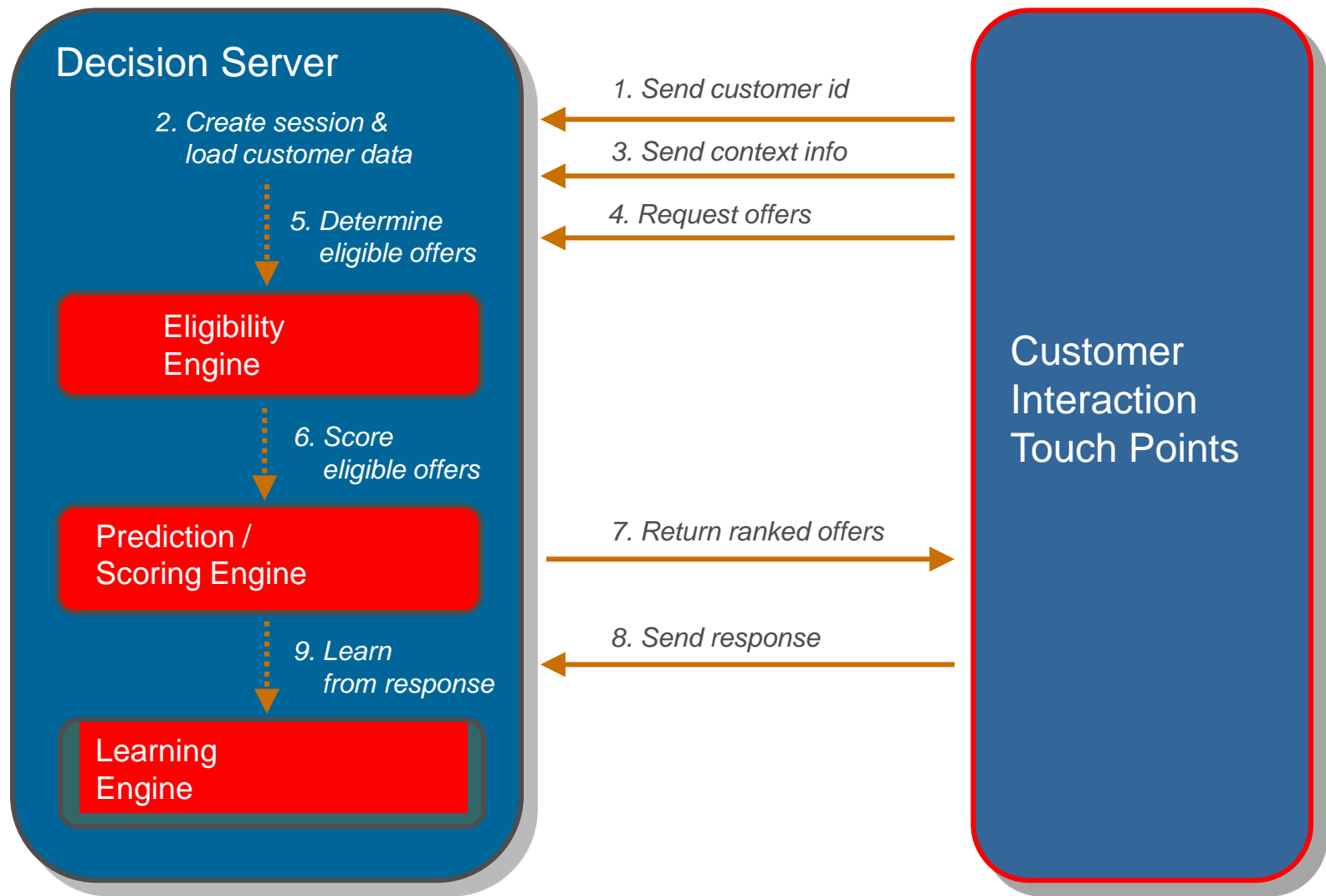
Operational Domain



Millions of
personalized
interactions



Process of Real-time Offer Recommendation



ORACLE®