Oracle Business Intelligence Platform
Value Proposition

Richard Rodriguez, Corporate Technologies
BI Challenges Today

...not easy to achieve!

- Fragmented
- Inconsistent
- Report-centric
- Restricted
- Non-Intuitive

Hasn’t the promise of BI been there for the past decade?
Business Intelligence Value Proposition
Enabling the Insight-Driven Enterprise

1. Empower Everyone – Every person is provided with relevant, complete information tailored to their role.

2. Provide Real-time Intelligence – Deliver insight that predicts the best next step, and deliver it in time to influence the business outcome.

3. Use Insight to Guide Actions – Lead people to take action based on facts to optimize decisions, actions and customer interactions.

Becoming an insight-driven enterprise will drive the next level of value creation and competitive advantage for organizations.
How can Business Intelligence help?

- Process optimization and automation
- Exploit new market opportunities faster
- React quickly to changes

- Real-time business insight, KPIs
- Fast, accurate reporting
- Interactive all-in-1 user portals

- Cost savings
- Reduction of redundancies, manual tasks
- Gain compliance

Agility

Visibility

Efficiencies

INNOVATION

PACE OF BUSINESS

GLOBALIZATION

REDUCE COSTS
Business Intelligence

Product Strategy

• Pervasive
  • Intuitive, role-based intelligence for everyone
  • Enables better decisions, actions, and business process

• Comprehensive
  • Integrate information from disparate sources
  • Financial, Operational, Transactional

• Hot Pluggable
  • Open, integrate with existing investments
  • Best with Oracle and non-Oracle environments
Oracle BI Suite Enterprise Edition
Unified Business Intelligence Infrastructure

Interactive Dashboards
Ad hoc Analysis
Proactive Detection and Alerts
Microsoft Office
Reporting & Publishing
BI Publisher
Financial Reporting
Interactive Reporting
SQR Production Reporting
Web Analysis

Common Enterprise Information Model
Oracle BI Server

OLTP & ODS Systems
Data Warehouse
Data Mart
SAP, Oracle
PeopleSoft, Siebel,
Custom Apps
Files
Excel
XML
Business
Process
Financial
Performance
Management
Applications
Hyperion
Essbase
Oracle BI Server

Next-generation BI and Analytics Server

- Simplified business model view
- Advanced calculation & integration engine
- Intelligent request generation and optimized, distributed data access
- Mission critical scalability and performance
BI EE Answers

- Ad-hoc Report Development

Links provide access to Oracle Business Intelligence functions

Search for saved requests

Select a subject area to create a new request

Use selection pane to access saved requests and dashboards

Workspace provides list of actions and available subject areas

Create a direct database request
BI EE Interactive Dashboards

- Collection of Answers Reports, Folders, BI Publisher Reports and more
BI EE Interactive Dashboards

- **Filters**
  - Reusable entities to limit the results of a query
  - End-user created, can be shared with others
  - Standardize conditional data (e.g. Fiscal Year)

- **Templates**
  - Reusable, customized cosmetic appearance
  - Apply a template to a new or existing requests
  - Standardize look and feel of corporate reports

- **Publications / Subscriptions**
  - Features available to all users with Oracle BI
  - Delivers
  - Publish iBot for subscription
  - Deliver iBot to specified or dynamic users
  - Enables cross-departmental visibility
BI EE Interactive Dashboards

• Dashboard Prompts
  • Filter all requests embedded on a dashboard
  • Constrain choices between columns (Cascading Prompts)
  • Change the measures on requests as well
  • Single dashboard supports multiple analysis points
BI EE Interactive Dashboards

• Personalization
  • Customize a dashboard view, then save your selection
  • Reuse saved selections or share with others
BI EE Web Administration

- Use this page to manage Web groups and users, BI Web Catalog, Interactive Dashboards, and account (users and groups) privileges.
Common Enterprise Information Model

“Model once, deploy everywhere”

End user adoption is about information consistency and availability where and when it’s needed. The Common Enterprise Information Model breaks down data silos and makes information available on-demand.
Intelligent Federation and Navigation

BI Server

Common Enterprise Information Model

<table>
<thead>
<tr>
<th></th>
<th>Revenue</th>
<th>Quota</th>
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<tbody>
<tr>
<td>2005 Data</td>
<td>Oracle OLAP</td>
<td></td>
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<tr>
<td></td>
<td>Option</td>
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<tr>
<td>Jan-June 2006 Data</td>
<td>Star Schema</td>
<td></td>
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<td></td>
<td>Data warehouse</td>
<td></td>
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<td>July 2006</td>
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<td></td>
<td>Disparate System</td>
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<tr>
<td>Quota</td>
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<td>Disparate Systems</td>
</tr>
<tr>
<td></td>
<td>Region Quota Spread sheet</td>
<td></td>
</tr>
</tbody>
</table>

Aggregated Data

Detail Data (Transaction Level)
Intelligent Federation and Navigation

“Show me Revenue against Quota for All Regions in 2005”
Intelligent Federation and Navigation

“Show me Revenue against Quota for All Regions in 2005”

Oracle Dashboard
Oracle Answers
Oracle XML Publisher
3rd Party Reporting

BI Server

Common Enterprise Information Model

2005 Data
Jan-June 2006 Data
July 2006
Quota

Aggregated Data

Detail Data (Transaction Level)

Oracle OLAP Option
Star Schema Data warehouse
Transaction ERP System

Revenue
Quota

Region Quota Spreadsheet

Disparate System
Disparate System
Disparate Systems

Oracle Answers
Oracle XML Publisher
3rd Party Reporting
Intelligent Federation and Navigation

“Show me Revenue against Quota for All Regions in **June 2006**”
Intelligent Federation and Navigation

“Show me Revenue against Quota for All Regions in June 2006”

Common Enterprise Information Model

- Revenue
- Quota

2005 Data
- Oracle OLAP Option

Jan-June 2006 Data
- Star Schema Data warehouse
- Disparate System

July 2006
- Disparate System

Quota
- Disparate Systems

- Region Quota Spreadsheet

BI Server

Aggregated Data

Detail Data (Transaction Level)
Intelligent Federation and Navigation

“Show me Revenue against Quota for All Regions in July 2006”
Intelligent Federation and Navigation

“Show me Revenue against Quota for All Regions in July 2006”

BI Server

Common Enterprise Information Model

2005 Data
Oracle OLAP Option
Disparate System

Jan-June 2006 Data
Star Schema
Data warehouse
Disparate System

July 2006
Disparate System

Quota
Disparate Systems
Region Quota Spreadsheet

Revenue

Oracle Dashboard
Oracle Answers
Oracle XML Publisher
3rd Party Reporting

Detail Data (Transaction Level)

Aggregated Data
Guided Analytics

*Leading Users from Discovery to Action*

This is no longer about a stack of reports. Guided Analytics drives alignment and actions through the organization by modeling and making accessible discovery and decision making best practices.
Action From Insight
Example: Invoking a business process from BI Dashboard

![Oracle Interactive Dashboard with Execute Action panel]

- **Financial**
  - Objective: Build Enterprise Financial Strength
  - KPI: Cross Sell Ratio
  - Value: 35
  - Target: 30
  - Indicator: Lag Q2

- **Learning and Growth**
  - Objective: Develop and Retain Quality Employees
  - KPI: Employee Turnover (%)
  - Value: 4
  - Target: 3
  - Indicator: Lag Q2

- **KPI Trend Analysis**

**Execute Action** window:
- **Begin Marketing Campaign**
  - Region: West
  - Campaign ID: 42684

**Scorecard Actions**
- Distribute Scorecard
- Investigate Revenue
- Investigate Turnover
- Begin Marketing

The marketing campaign workflow has been initiated.
Sense and Respond

*Real-Time Proactive Monitoring and Response*

Delivers/Analytic Agents provides true real-time in context sense and respond capabilities across systems tailored for any user on any device.
Oracle Disconnected Analytics

Full-Featured Disconnected Client

The user experience is identical to the connected user. Dashboard and Answers functionality will act identically as if the user were connected to the server.

Disconnected BI Server

- Business Model
- Server Cache
- Calculations

Disconnected Metadata & Report Definitions

- Web Catalog
- Presentation Metadata

Oracle Disconnected Data
Oracle Briefing Books

“Pack & Go”

Bring along an electronic “Briefing Book” which is a collection of your most important dashboards. Briefing Books are extremely small, and can be delivered daily for enterprise collaboration.

The bottom of every Dashboard page has an “Add to Briefing Book” Link that automatically builds an electronic briefing book that you carry with you.
Oracle Reporting and Publishing

Precision control over report format, layout, and output – enabling creation and distribution of “pixel-perfect” reports regardless of graphical complexity.

Oracle Reporting and Publishing leverages the Common Enterprise Information Model for broad destinations and formats.
Oracle BI Publisher - One Solution for all Business Documents
BI Publisher

- Pixel Perfect Report Development
- Can leverage BI EE Semantic Layer as well as other sources (JDBC, Web Services, SQL, HTML)
Hot Pluggable
Open, Integrate with Existing Investments

Portals
Any JSR 168 Portal

Analytic Tools
BOBJ, COGN MSTR

Reporting
Actuate, Oracle Apache FOS

Desktop Tools
Excel, Outlook, Lotus Notes

BI Server
Common Enterprise Information Model

Security
Oracle Custom MSFT AD iPlanet Novell Others ..

Data Access
Oracle RDBMS Oracle OLAP Option IBM DB2 Microsoft SQL Server & Analysis Services Teradata SAP BW XML, Excel, Text Others ..

ETL
Oracle Informatica Ascential Sunopsis Others ..
Oracle BI Suite Enterprise Edition

**Common BI Infrastructure**

All Oracle BI Suite Modules:

- Oracle Interactive Dashboards
- Oracle Answers
- Oracle Delivers
- Oracle Disconnected Analytics
- Oracle Briefing Books
- Oracle BI Server
- Oracle BI Administration Tool

**Share Common:**

- ✔ Security Services
- ✔ Metadata Services
- ✔ Reporting Objects (Views)
- ✔ Query Intelligence Engine
- ✔ User Experience
- ✔ Administration
CTI – BI Architecture Practices

Applying data access, data quality and security logic at the right points in the architecture to **protect data access** and **ensure data quality**; deliver coherent and standardized data across each report; provide derived calculation data types and automatic aggregations; dramatically **simplify report data access** and **shield reports from future data model changes**.
Oracle BI - Summary

1. Oracle BI enables you to create **interactive reports, dashboards, and ad-hoc queries** against **any data sources** within your business.

2. Oracle BI is a **general purpose BI system**, even in non-Oracle environments.

3. Oracle BI **helps organizations become aligned** to ensure more intelligent decision making.
Appendix
Architecture
Oracle BI EE Architecture

Oracle BI Server
- Logical SQL ODBC/JDBC (Logical Business Model)
- Load Balancer
- Session Management
- Intelligent Request Generation
  - Logical Request Generation
  - Navigator
  - Cache Services
  - Multi-Pass / Sub-Request Logic
  - Fragmentation
  - Optimization
  - Aggregate
  - Navigator
  - Optimized Query Rewrites
  - Execution Engine

Oracle BI Web
- SOAP Web Services, XML and URL Interface
- Oracle Interactive Dashboards
- Oracle Answers
- User Profiling, Security and Session Mgmt
- Cache Services (Web) & Connection Mgmt

Oracle Delivers Server
- Scheduling/Event Services
- Agent Execution Logic
- Device Adaptive Content

Oracle BI Administration
- Metadata Management Services
- Multi-User Development Services
- Metadata Documentation Services
- Server Management Services

External Applications and Portals
- HTML, SOAP over HTTP/HTTPS

Web Browser
- Javascript for Usability & Interactivity

Web Server
- (IIS, Tomcat, Websphere, iPlanet)
- SAW Bridge (J2EE/ISAPI)
- TCP/IP (SSL)

OABD, CLI, OCI, XML, MDX

ODBC over TCP/IP (SSL)

XML, HTML, XLS, PDF, TXT over HTTP/HTTPS

Oracle BI Web
- Web Catalog Service
- XML Framework

Oracle BI Cluster Controller
- TCP/IP (SSL)
Oracle BI EE Architecture

Oracle BI Web
- SOAP Web Services, XML and URL Interface
- Oracle Interactive Dashboards
- User Profiling, Security and Session Management
- Cache Services (Web) & Connection Management
- Metadata Interchange Services
- Logical SQL ODBC/JDBC (Logical Business Model)
- Query Services
- Security Services
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- ODBC over TCP/IP (SSL)

Oracle Delivers Server
- Scheduling/Event Services
- Agent Execution Logic
- Device Adaptive Content

Oracle BI Cluster Controller
- ODBC, CLI, OCI, XML, MDX
- Analytical and Operational Data Sources
Physical Layer – “Intelligent Request Generation”
Reads in system catalog
Multiple sources
Optimized SQL generation
Regardless of Schema
Function ship to appropriate data sources/Compensation

Enterprise Business Model Administration
Enterprise Business Model Administration

**Business Model Layer – “Calculation Engine”**

Physical complexity converted to logical subject areas

Drill-Paths

Complex/Derived Measures (Level-based, time series, dimension-specific, nested)

Aggregate/Fragment Aware
Enterprise Business Model Administration

Presentation Layer

Role-based, in context, personalized presentation – Oracle Answers
Oracle BI Server
Common Enterprise Information Model

The Oracle BI server presents as a logically modeled database enabling the
Common Enterprise Information Model.

This provides powerful calculation,
computation and federation capabilities to
3rd party tools as well as our own.
A Day in the Life of a Query
A Day in the Life of a Query

A logical request comes in asking for:

- Brand,
- Closed Revenue (GL)
- Service Requests (Call Center)
- Share of Revenue (Derivation)
A Day in the Life of a Query

Oracle BI Server Cache

The Server will check to see if this request can be fulfilled via a prior request using Server Cache.

This is an on-demand intelligent shareable and secure cache that can support: Subsets, Aggregations and Derivations
A Day in the Life of a Query Navigator

If it is the request is cannot be fulfilled by cache then the server will intelligently process the request.
A Day in the Life of a Query

Multi-Pass/Sub-Request Logic

Does this analysis require sophisticated analysis such as an OLAP calculation?

[Revenue Share]

The Server will determine the best possible way to provide this calculation/computation.
A Day in the Life of a Query

Fragmentation Optimization

Does this request span across partitions or silos of data?

[Closed Revenue and Service Requests]

The server will determine based on the request if it should navigate to both or only one. It will automatically resolve fan traps.
A Day in the Life of a Query

Aggregate Navigator

Is there an aggregate that can better satisfy this request versus hitting the detail?

{Brand Summary Table}

The Server will apply appropriate summary redirection to provide the quickest response.
A Day in the Life of a Query

Optimized Query Rewrites

What can be function-shipped down to the database versus performed /supplemented by the computation capabilities of the Server.

The server will provide a consistent set of functionality to the user regardless of underlying datasource.
Oracle BI Server

Exploiting Native Database Functionality

[Image of database interface and functionality details]

[Image of database interface and functionality details]
select distinct D1.c2 as c1,
    Rank() OVER ( ORDER BY D1.c1 DESC ) as c2
from
    (select sum(T677."ActlExtnd") as c1,
    T699."District" as c2
    from
    "d1_customer" T699,
    "d1_orders" T677
    where  ( T677."repkey" = T699."SalesRep" )
    group by T699."District") D1
order by 1

select D1.c2 as c1, D1.c1 as c4
from
    (select sum(T1397."ActlExtnd") as c1,
    T1384."District" as c2
    from
    "D1_customer" T1384,
    "D1_orders" T1397
    where  ( T1384."repkey" = T1397."SalesRep" )
    group by T1384."District" ) D1

[Rank Calculation Performed on Oracle BI Server
To Compensate for the Limitations of MS SQL Server]
A Day in the Life of a Query

Oracle BI Server

Logical SQL, ODBC/JDBC (Logical Business Model)

Load Balancer

Session Management

Intelligent Request Generation

Logical Request Generation

Navigator

Fragmentation Optimization

Aggregate Navigator

Optimized Query Rewrites

Execution Engine

Data Source Adapters

ODBC, CLI, OCI, XML, MDX

Analytical and Operational Data Sources

ODBC over TCP/IP (SSL)

Analytical and Operational Data Sources

The request once executed will now be available to other users as a cache entry.
Oracle BI Server

System Services

- **Clustering:** Add stacks as needed in a share nothing clustered environment.

- **Session Management and Governance:** Query throttling via connection pools and authorization.

- **Security Services:** Integration with OID, LDAP with sophisticated data driven personalization mechanisms.