Twelve Tips for Successful OBIEE / Applications Implementations

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12/12/2012
NYOUG
Gartner Survey Lists BI as Top Priority

What’s Driving CIOs – A Look At Technology Priorities

Gartner’s annual survey of CIOs includes 2,300 respondents located in 44 countries, competing in all major industries. As of the last annual survey, the three-highest rated priorities for investment from 2012 to 2015 included Analytics and Business Intelligence (BI), Mobile Technologies and Cloud Computing.

<table>
<thead>
<tr>
<th>CIO Technology Priorities</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Please indicate your top three priorities for 2012 through 2015</td>
<td></td>
</tr>
<tr>
<td>Analytics and BI</td>
<td>1</td>
</tr>
<tr>
<td>Mobile Technologies</td>
<td>2</td>
</tr>
<tr>
<td>Cloud Computing (SaaS, PaaS and IaaS)</td>
<td>3</td>
</tr>
<tr>
<td>Virtualization Desktop, Server and Storage</td>
<td>4</td>
</tr>
<tr>
<td>Collaboration Technologies (e.g., Workflow Mgmt., Team Collaboration)</td>
<td>5</td>
</tr>
<tr>
<td>IT Management Technologies (Program, Project Mgmt., Governance, Change Mgmt.)</td>
<td>6</td>
</tr>
<tr>
<td>Legacy Application Modernization, Upgrade or Replacement</td>
<td>7</td>
</tr>
<tr>
<td>Security Technologies (Access Control, Authentication, etc.)</td>
<td>8</td>
</tr>
<tr>
<td>CRM Applications</td>
<td>9</td>
</tr>
<tr>
<td>Enterprise Resource Applications (Finance, HR, etc.)</td>
<td>10</td>
</tr>
</tbody>
</table>

Note: Survey respondents identified their top three issues (not in any order). These priorities are ordered based on the percentage of respondents that included the issue in their top three.

Twelve Tips for BI – 12 days before Christmas!

1. A Picture Says a Thousand Words - BI is all about Visualization of data
2. Leverage Mobile BI to provides easy access to applications
3. Do not re-invent the wheel, leverage pre-built applications such as Oracle BI Applications
4. OBIEE Socialization – phased approach
5. Extend your DW/BI Solution with Advanced Analytics to take it to the next level of maturity
6. Leverage external data and Big Data
7. Cannot ignore data quality, Testing plan, QA, UAT are not fancy words
8. Security should not be an after thought
9. Consider Engineered systems – same concept as pre-built applications
10. Leverage Cloud hosting/applications – Oracle Fusion Applications on Cloud, SalesForce.com, Workday are not anomaly – new norm!
11. BI CoE - BI Applications need care and enhancements
12. Do not ignore the Human Intelligence on way to Business Intelligence – the emergence of Oracle Data Scientist
Tip 1 – Visualization of Data

• It is all about Visualization of Data

• Picture speaks a thousand words

• A Photo-shopped picture speaks a thousand lies!
About Shyam

• OBIEE Architect with IBM GBS (Oracle BI Practice)
• OCP since 1998 on 4 different DB versions, OBIEE / BI Apps certified (OCS)
• IOUG Board of Director (Product Integration)
• President/Founder of BIWA SIG and Exadata SIG – IOUG Special Interest Groups
• Regular speaker at Oracle Open World (since ’03), IOUG Collaborate (since ’05), ODTUG-KScope (since ’08), BIWA Summit and NYOUG (since ’06) and other regional groups.
• Bachelor’s from IIT-India, MBA and MS from Florida Atlantic University, Boca Raton, FL
Industry Landscape - BI Services and Products

Figure 1. Magic Quadrant for Global Business Intelligence Service Providers

As of January 2011

As of February 2012

Business Intelligence Platform Providers
Typical BI Analysis Question

Show me sales by product by month.

Fact  Dimension  Dimension

Show me Spend by Category by Vendor
(On OLTP side you enter Invoices, GL accounts etc.)
Introduction to Star Schema

- Dollars, Units, Shipments by Product
- Customer
- Dollars, Units, Shipments by Customer
- Product
- Sales
- Program
- Dollars, Units, Shipments by Time
- Time
- Dollars, Units, Shipments by Program
Visualization of Data using Dashboard / Reports

Graph Sliders

Visualizations

Playback option
Visualizing Human Resource – Payroll Data
Tip 2 - Leverage Mobile BI
Why BI Mobile is Important?

• Demo of iPad App
• Inversion of Desktop / Mobile usage

In India, Mobile Internet Traffic Surpassed Desktop Internet Usage in May, 2012 - Other Countries to Follow...
Tip 3 – Leverage Pre-Built Solutions

**Build - BI/ DW Grounds Up**
- Built to requirements
- Build Data Model
  - Utilize DW features of Oracle DB
- Build ETL framework
  - Choices ODI / OWB
  - Informatica / DataStage
- OBIEE Metadata (RPD)
- Performance Considerations
  - Summary Tables / OLAP
  - Parallelism, Partitioning
  - Visualization / In-memory
- In-house Maintenance
  - Functionality upgrade
  - ERP upgrade
  - Platform Upgrade
  - OS, DB etc.

**Buy – Start using Packaged Analytics**
- Leverage pre-built application like OBIA for Oracle ERP shops
- Standard ERP/CRM in use like EBS, PSFT, JDE, Siebel, Fusions Apps, SAP etc
- Quick install and Socialization phase
- Focus on Fit-Gap
  - Available Analytical Apps
  - Other sources
  - Dims, Hierarchies
  - Reports
- Performance Considerations
  - Best Practices
  - Custom Tweaks
- Align upgrades to OBIA Roadmap
Oracle BI Enterprise Edition Plus (OBIEE+) w/ BI Applications

Oracle BI Applications
- Sales
- Service & Contact Center
- Marketing
- Order Mgmt & Fulfillment
- Supply Chain
- Financials
- Human Resources

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
- DW Schema
- Packaged ETL Maps

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

ETL Maps
Extend
Oracle BI Apps Release 7.9.6.3 / OBIEE 11g

How can Oracle ERP Shops Check Applicability of BI Apps?

<table>
<thead>
<tr>
<th>Oracle’s JD Edwards EnterpriseOne¹²</th>
<th>8.11SP1, 8.12, 9.0</th>
<th>Oracle Financial Analytics Fusion Edition</th>
<th>Oracle’s JD Edwards EnterpriseOne Financial Management</th>
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</thead>
<tbody>
<tr>
<td>Oracle’s JD Edwards EnterpriseOne</td>
<td>8.12¹³, 9.0¹³</td>
<td>Oracle Supply Chain and Order Management Analytics¹⁴</td>
<td>Oracle’s JD Edwards EnterpriseOne Inventory Management</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Oracle’s JD Edwards EnterpriseOne Product Data Management</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Oracle’s JD Edwards EnterpriseOne Sales Order Management</td>
</tr>
<tr>
<td>Universal Source</td>
<td>N/A</td>
<td>All available Oracle Business Intelligence applications</td>
<td>N/A</td>
</tr>
<tr>
<td>Vendor and Product</td>
<td>Version</td>
<td>Oracle Business Intelligence Application</td>
<td>Associated Source Application or Module</td>
</tr>
<tr>
<td>------------------------------------</td>
<td>--------------------------</td>
<td>----------------------------------------------------------------</td>
<td>-------------------------------------------------------------</td>
</tr>
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<td>Oracle iProcurement</td>
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<td>Oracle iRecruitment</td>
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<td>Oracle Project Billing</td>
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<td></td>
<td></td>
<td>Oracle Service Analytics Fusion Edition</td>
<td>Oracle Teleservice⁹</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Oracle iSupport⁹</td>
</tr>
</tbody>
</table>
OBIA – High Level Flow

- Includes infrastructure components and:
  - OBAW and ETL components to load it
  - Informatica, DAC, and BI Server metadata
OBI EE Plus vs BI Applications

Oracle Business Intelligence Enterprise Edition Plus

Oracle Business Intelligence Applications – Prebuilt Metadata
ETL Considerations: JD Edwards Tables

- The JD Edwards table names are quite cryptic
- This shows that for building custom OBIEE solutions, deep ERP knowledge is required
- Need for data modeler, ETL/OBIEE architect and developers
- Resolved ETL mappings with help of views on JDE side, flat files from main frame.
How we Solve Company’s Business Questions by Implementing / Customizing OBIA

- **How’s the revenue as compared to the plan?** [Source: Projects]
- **Are expenses under control?** [Source: Procurement]
- **Who owes us money. Where do I have to take action?** [Source: Financials]
- **What are our top service sales opportunities?** [Source: CRM]
- **How’s our utilization?** (Future) [Source: Projects]
- **Where do we need people and how quickly are we finding them?** [Source: HCM]
Implementation Steps: BI Applications (Financial Analytics)

1. Start with Pre-built warehouse and star-schemas for analysis and reporting on financial analytics

2. Customize ETL to extract data from different operational tables and load it into the DW, as needed

3. Modify OBIEE metadata, calculations and metrics for financial analysts, executives and other business users, as needed
   - Presentation layer
   - Logical business model
   - Physical sources

4. Deploy the dashboards, reports for different Finance Stakeholders
ETL Mapping Can Be Customized Using Informatica (Future ODI)

<table>
<thead>
<tr>
<th>Source Table</th>
<th>Source Qualifier</th>
<th>Expression Transformation</th>
<th>Mapplet output to Extract Mapping</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oracle EBS</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Q. How many of my top customers bought products from my worst suppliers?

Q. Which of my top suppliers are also my top customers?
Tip 4 – Agile BI (Phased Approach)

• Large DW projects are risky
• Plan smaller increments – one subject area at a time (90-120 day cycles)
• Stage of OBIEE Socialization with users
• Leverage success of one Department to introduce BI to the rest of the company
• BI Projects are often Line of Business Driven
Tip 5 – BI is a Journey – Add Advanced Analytics to Drive Competitive Intelligence
Predictive Analytics in Use Everyday

- Twitter sends me emails about users with similar profile as mine
- E.g. of Market basket analysis
- If better recommendations, I am more likely to “follow”
- Build a better network
- More user adoption and enhanced experience
Procurement and Spend

Oracle Business Intelligence

Spend Analyzer

Spend by Top Categories

<table>
<thead>
<tr>
<th>Rank</th>
<th>Top Category Name</th>
<th>Spend</th>
<th>% Spend</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Unspecified</td>
<td>$692,899,771</td>
<td>62.6%</td>
</tr>
<tr>
<td>2</td>
<td>PRODUCTN</td>
<td>$210,282,089</td>
<td>19.0%</td>
</tr>
<tr>
<td>3</td>
<td>MISC</td>
<td>$154,947,896</td>
<td>14.0%</td>
</tr>
<tr>
<td>4</td>
<td>HARDWARE</td>
<td>$21,146,680</td>
<td>1.9%</td>
</tr>
<tr>
<td>5</td>
<td>PROFESSIONAL SERVICES</td>
<td>$15,511,654</td>
<td>1.4%</td>
</tr>
<tr>
<td>6</td>
<td>SUPPLIES</td>
<td>$7,203,113</td>
<td>0.7%</td>
</tr>
<tr>
<td>7</td>
<td>TEMPLABOR</td>
<td>$1,656,746</td>
<td>0.2%</td>
</tr>
<tr>
<td>8</td>
<td>MERCHAND</td>
<td>$1,319,052</td>
<td>0.1%</td>
</tr>
<tr>
<td>9</td>
<td>COMPUTER</td>
<td>$873,107</td>
<td>0.1%</td>
</tr>
<tr>
<td>10</td>
<td>CAPITAL</td>
<td>$331,844</td>
<td>0.0%</td>
</tr>
<tr>
<td>11</td>
<td>OTHERS</td>
<td>$382,400</td>
<td>0.1%</td>
</tr>
</tbody>
</table>

Grand Total $1,186,831,361 100.0%

Click to view Category Spend Details

Spend by Category

Click to view Year over Year Category Trend

Year Over Year Spend Trend by Category

Spend by Top Suppliers

<table>
<thead>
<tr>
<th>Rank</th>
<th>Top Supplier Name</th>
<th>Spend</th>
<th>% Spend</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>PC Systems</td>
<td>$111,284,451</td>
<td>14.6%</td>
</tr>
<tr>
<td>2</td>
<td>Capp Consulting</td>
<td>$110,856,142</td>
<td>14.5%</td>
</tr>
<tr>
<td>3</td>
<td>Consolidated Supplies</td>
<td>$92,776,765</td>
<td>12.2%</td>
</tr>
<tr>
<td>4</td>
<td>Max Depot</td>
<td>$46,088,651</td>
<td>6.1%</td>
</tr>
<tr>
<td>5</td>
<td>Alpha, Inc.</td>
<td>$33,980,665</td>
<td>4.4%</td>
</tr>
<tr>
<td>6</td>
<td>Hardware Supplies, Inc.</td>
<td>$33,119,263</td>
<td>4.4%</td>
</tr>
<tr>
<td>7</td>
<td>Industrial Bakery Ingredients Ltd.</td>
<td>$29,543,621</td>
<td>4.0%</td>
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<tr>
<td>8</td>
<td>Building Management Inc.</td>
<td>$27,841,001</td>
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<tr>
<td>9</td>
<td>JKS National</td>
<td>$24,102,147</td>
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<tr>
<td>10</td>
<td>Rapid Supplies</td>
<td>$21,575,710</td>
<td>3.0%</td>
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<tr>
<td>11</td>
<td>OTHERS</td>
<td>$229,166,899</td>
<td>30.1%</td>
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</tbody>
</table>

Grand Total $760,386,976 100.0%

Click to view Supplier Spend Details

Click to View Year over Year Supplier Spend

Spend Year Over Year Trend by Supplier

Savings Potential by Top 10 Items

Display | Graph

Click to view details for all the items

Savings Potential by Item

Top Categories by Supplier Count

Display | Graph

Click to view details for all the Categories

Category Spend by Supplier Count

Click to view details for all the Categories

Category Spend by Supplier Count
Procurement and Spend Analytics – Expense Analysis

**Total Expenses Trend**

Select quarter values from table to refresh values in the graph below it.

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Total Expenses</th>
<th>YTD Expenses</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009 Q 1</td>
<td>$801,198</td>
<td>$726,017</td>
</tr>
<tr>
<td>2009 Q 2</td>
<td>$760,043</td>
<td>$739,452</td>
</tr>
<tr>
<td>2009 Q 3</td>
<td>$733,411</td>
<td>$684,839</td>
</tr>
<tr>
<td>2009 Q 4</td>
<td>$926,977</td>
<td>$524,739</td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td><strong>$3,221,630</strong></td>
<td><strong>$2,675,047</strong></td>
</tr>
</tbody>
</table>

Detail graph getting refreshed upon selecting Q3.
What is Spend Classification?

• An automated way to categorize the expenses incurred / or invoices paid into meaningful categories

• The “meaningful categories” can be industry standard UNSPSC codes

  – 90000000  Travel and Food and Lodging and Entertainment Services
  – 90110000  Hotels and lodging and meeting facilities
  – 90111600  Meeting facilities
  – 90111601  Conference centers
Option to OBIA – P&S

• Add-on component to Oracle Business Intelligence Applications – Procurement and Spend Classification
• Add-on screens help to manage Spend Classification
How to Monitor Spend Classification Activities?

<table>
<thead>
<tr>
<th>Name</th>
<th>Taxonomy</th>
<th>Status</th>
<th>Knowledge Base Type</th>
<th>Start Date</th>
<th>End Date</th>
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</thead>
<tbody>
<tr>
<td>KB16K1</td>
<td>UNSPSC</td>
<td>COMPLETED</td>
<td>Standard</td>
<td>18-Sep-2012 03:3</td>
<td>18-Sep-2012 03:3</td>
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<tr>
<td>B2_V2</td>
<td>UNSPSC</td>
<td>COMPLETED</td>
<td>Standard</td>
<td>13-Sep-2012 06:2</td>
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</table>

<table>
<thead>
<tr>
<th>Batch Number</th>
<th>Batch Description</th>
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<th>Taxonomy</th>
<th>Status</th>
<th>Start Date</th>
<th>End Date</th>
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<tbody>
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<td>61 - 16Kapplied2API</td>
<td>KB16K1</td>
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<td>22</td>
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<td>B2_V2</td>
<td>UNSPSC</td>
<td>Errored</td>
<td>14-Sep-2012 03:3</td>
<td>14-Sep-2012 03:3</td>
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<tr>
<td>21</td>
<td>21 - AP2_V2</td>
<td>B2_V2</td>
<td>UNSPSC</td>
<td>Reset</td>
<td>13-Sep-2012 06:2</td>
<td>13-Sep-2012 10:3</td>
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<tr>
<td>3</td>
<td>3 - BATCH_2A</td>
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<td>Completed</td>
<td>Completed</td>
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<td>06-Sep-2012 06:0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Select</th>
<th>Batch Number</th>
<th>Batch Description</th>
<th>Knowledge Base</th>
<th>Taxonomy</th>
<th>Approval Status</th>
<th>Approval Date</th>
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<td></td>
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<tr>
<td></td>
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<td>21 - AP2_V2</td>
<td>B2_V2</td>
<td>UNSPSC</td>
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<th>Search Criteria</th>
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<tbody>
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<td>41</td>
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<td>Success</td>
<td>B2V2_Try2</td>
<td>21</td>
</tr>
<tr>
<td>BATCH</td>
<td></td>
<td>21</td>
<td></td>
<td>Success</td>
<td>AP2_V2</td>
<td>1</td>
</tr>
</tbody>
</table>
Tip 6 - Leverage External Data and Big Data

• External Data is often needed to improve the Data from internal systems like ERP, CRM system
• Customer MDM solution (Dun & Bradstreet)
• Supplier Hierarchy
• Twitter feeds for Sentiment Analysis
Types of Big Data

• ERP, CRM and similar OLTP applications generated data

• Machine generated
  – Sensors
  – High speed Camera / Video in manufacturing plant

• Third party – Currency rates, Stock prices, Weather predictions, Economic Data, Syndicated Data

• Human generated – social media

• Biometrics, Weblogs, Network logs
Use Case: Retail Smart Mall

Key Business Goals:
- Increase store traffic
- Increase revenue per transaction
- Reduce discount percentages

Key Tools
- Multi-Channel Customer Interactions
- Real-Time, localized, micro-segmented offers driven by customer profile, store stocks, local influencers (weather, birthdays, graduations etc.)
Use Case: Retail Smart Mall

Key Technologies
- Smart Devices with Location Data
- Data Collection Points with real-time decision capabilities
- Data Processing and Storage facilities

Data Sets
- Customer Profiles with Opt-In to coupons
- Customer segmentation
- Customer buying behavior
Use Case: Smart Mall

Customer enters mall area based on Cell Phone location data

Customer Profile:
- 30-35 Female
- 2 kids < 5yrs
- Uses our coupons

Send Coupon:
- 20% of item when used in the next 15 minutes

Point of Sale Capture:
- Coupon used
- 3 items bought (up 1)
- Increased spend (up $10)
Use Case: Smart Mall Data Flows

Collection & Decision Points

NoSQL Lookup

Complex Event Processing (CEP)

Identify User

Deliver Coupon

Decision

Expert Engine

Big Data Appliance

Big Data Connectors

Models

Off-Line offers via email, mail

Collection & Decision Points Points

User Profiles

Social Feeds

Map

Reduce

NoSQL Lookup

Analyse

Complex Event Processing (CEP)

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Decision

Expert Engine

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Decision

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Reduce

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Deliver Coupon

Decision

Expert Engine

Big Data Appliance

Big Data Connectors

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Social Feeds

Map

Reduce

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Oracle Big Data Analytic for Retail: E.g. Merchandise allocation optimization

**Business Question(s):** Can retailers optimize the allocation of merchandise in stores to match demand and *give the best experience to customer*?

**Challenges:** There’re many analytic model to optimize the allocation, but what about this allocation relate to customer purchase experience? Is the passageway too narrow? Too crowd? How to measure?

**Objective**

**Solution:** derive the information from media data (video) --(utilize big data/Hadoop platform), and consolidate into/with ORDM to meet the business scenario.

**Benefit:** [to retailers]-improve customer satisfaction as well as increase gross sales;-- further capability to mining information from video data apply in any industry;
Tip 7 - Ensure Data Quality by Testing

- Cannot ignore data quality till the end of the project
- Develop a Test in the design stages to identify the key business users who will be able to validate data quality
- Data Quality issue can arise in source systems or in the DW
- QA, UAT are not fancy words, they are necessary evil parts of the BI project
Tip 8 - A Robust Security model

The Savvy Business User

Howdy Joe!
I need OBIEE access
Give me access to everything!

Joe, you are the best!

The Naïve System Admin

Mark, which department’s data and dashboards you need to access to?

You got it! Login after 10 minutes.

Welcome!
Security Changes – (OBIEE 11g - 7.9.6.3)

• OBIEE 11g Security Model User>Group>Role

- RPD files now have RPD-specific passwords - used to encrypt the contents.
- Groups no longer exist in the RPD as objects. Data access security is implemented based on application roles to which a user belongs.
How to Configure – OBIIEE Security Provisioning
Weblogic Security Providers

- Weblogic - Security Realms
How to Configure – OBIEE Security Provisioning
Security Users

• Weblogic – Security Users
How to Configure – OBIEE Security Provisioning Security Groups

- Weblogic - Security Groups
How to Configure – OBIEE Security Provisioning Application Roles

• Enterprise Manager
  – Mapping Security Groups and Users to Application Roles
How to Configure – OBIEE Security Provisioning
Subject Area Provisioning

• Metadata: Authorization on Subject Areas
Tip 9 – DW Appliances / Engineered System

• Consider Engineered systems – same concept as pre-built BI applications
• DW Appliances in the industry – Teradata, Netezza (IBM)
• Oracle Exadata and DB “Appliance”
• Emergence of in-memory computing
• Oracle Exalytics, Oracle Big Data Appliance and on so
• Competitor boxes
  like SAP HANA
Tip 10 - Leverage Cloud & Virtualization for BI

- Oracle Fusion Applications on the Oracle Public Cloud, SalesForce (CRM) and Workday (HCM) are the new norm
- BI / DW / Data integration servers can be virtualized (first step)
- OBIEE can be run in Cloud
- Amazon Redshift – DW on Cloud
Tip 11 - Consider a BI Center of Excellence

- Adoption of the BI solution
- Setup standards – naming conventions, vendor or tool-stack selection
- Care and enhancement
Customization: Extension Columns added to the physical group account table
Tip 12: Human Intelligence – Emergence of Oracle Data Scientist

• The human aspect cannot be overlooked in any BI initiative.
• The skills and development of the BI team is very important. Since BI is a cross over area from pure Technology to business insights, there is a new buzz word in the industry calle Data Science.
• DW and BI professionals can look forward to the emergence of the Oracle Data Scientist role.
• Oracle BIWA Summit Jan 9-10, 2013
• Near Oracle HQ in San Francisco, Bay area
• Keynotes by Tom Kyte, Balaji Yelamanchili, Vaishanavi Sashikanth, Ari Kaplan – a Sports Analyst of Major League baseball fame!
• Other Noted Speakers like Mark Rittman, Dan Vlamis etc.
• Tracks like BI, DW, Advanced Analytics, Big Data and EPM Hyperion along with Hands-on Labs
• Registration starts at $249 – http://BIWASummit.org
SAVE THE DATE!

COLLABORATE 13
April 7-11, 2013
Colorado Convention Center
Denver, Colorado

http://collaborate13.ioug.org
Wrap-Up

• Twelve Tips
• Custom v/s pre-built BI Solutions
• Spend Classification – Advanced Analytics
• Q&A
Questions?

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www.IBM.com