Bussiness Intelligence and Data Warehouse

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Schedule

- Business Intelligence (BI)
  - BI tools
  - Oracle vs. Microsoft
- Data warehouse
  - History
  - Tools
  - Oracle vs. Others
- Discussion
Business Intelligence (BI)

- Products (technologies and applications) used for collecting, analyzing and interpreting data
- Main goals
  - analyze and report data
  - qualified decisions
  - improve business processes
- Real-time reports
BI Prerequisites

- Secure computer system
- Sufficient data capacity
- Plan for data retention
BI tools

- Data mining
- Dashboards
- OLAP (Online Analytical Processing)
- Reporting software
- BPM (Business Performance Management)
- DSS (Decision Support System)
- Data Warehousing
Oracle products

- Oracle BI Standard Edition (SE)
- Oracle BI Standard Edition One
- Oracle BI Suite Enterprise Edition (EE) Plus
Oracle BI tools

- **Business Intelligence Server**
  - business model and layer of abstraction
- **Business Intelligence Interactive Dashboards**
  - accessing content of applications
- **Business Intelligence Answers**
  - querying and analyzing tool
- **Business Intelligence Publisher**
  - reporting tool
Oracle Dashboards

**Current Period Sales Analysis**

- **Multi-Target Drill**
- **Region** | **Sales** | **Forecasted Sales** | **% of Forecast**
- CENTRAL REGION | $365,343 | 262,296 | 139%
- EASTERN REGION | $430,913 | 543,169 | 60%
- SOUTHERN REGION | $209,506 | 245,571 | 85%
- WESTERN REGION | $142,768 | 331,032 | 43%
- **Grand Total** | $1,154,530 | 1,382,867 | 83%

*You are currently below forecast for the year. Research brand penetration within customer base.*

**Brand Analysis**
- Color Ranking by Units Sold
- Color Summary for Current Year
- Finish Sales Trend for Current Year
- Finish Sales Trend Targets
- Sales by Brand for Current Year Trend
- Sales Summary for Current Year

**Top 5 Performing Markets**

<table>
<thead>
<tr>
<th>Market</th>
<th>Sales Measurea</th>
<th>Price Per Unit</th>
<th>Sales Facts</th>
<th>Top 5 Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>BOSTON</td>
<td>2,480,361</td>
<td>3.04</td>
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<tr>
<td>CHICAGO</td>
<td>1,861,167</td>
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<td>LOS ANGELES</td>
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<td>CLEVELAND</td>
<td>850,819</td>
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</table>

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Microsoft tools

- **SQL Server 2005 Integration Services**
  - extracting and loading tools
- **SQL Server 2005 Reporting Services**
  - reporting tools
- **SQL Server 2005 Analysis Services**
  - data mining tools
- **SQL Server 2005 Management Studio**
  - management tools
Microsoft

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Data Warehouse

- Main storage of company`s data
- Material for DSS (Decision Support System)
- Formally defined by Bill Immon as:
  - Subject-oriented
  - Time-variant
  - Non-volatile
  - Integrated
Data Warehouse Progress

- Off line Operational Databases
- Off line Data Warehouse
- Real Time Data Warehouse
- Integrated Data Warehouse
Data Warehouse tools

- Database
  - Oracle, SQL Server, DB2...

- OLAP
  - MOLAP (Multidimensional OLAP)
  - ROLAP (Relational OLAP)
  - HOLAP (Hybrid OLAP)

- ETL (Extract, Transform and Load)

- Reporting (presentation layer)
Data Warehouse vs. Data mart

- **Data Warehouse**
  - collects all information from entire enterprise
  - large

- **Data mart**
  - smaller
  - focused on specific task
  - may be part of bigger data warehouse
Summary of Data Warehouse

- Access to large amount of data ✔️
- Place for combination of data from different locations
- Create reports without slowing down operational systems
- Extracting cost time ✗
- Active managing is required
- Problems with compatibility
- Security problems (web access)

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Oracle Data Warehousing tools

- **Oracle Warehouse Builder**
  - management, transformation, optimization
  - design ETL processes
  - more data sources supported
- **Oracle Data Mining (ODM)**
  - optional to Oracle DB 11g
  - Oracle Data Mining JDeveloper and SQL Developer Extensions
- **Oracle OLAP**
Other products

- **Microsoft**
  - SQL Server 2005 Business Intelligence Development Studio

- **IBM**
  - DB2 Data Warehouse Edition

- **SAP**
  - SAP NetWeaver BI
Web pages (references)

- Oracle Business Intelligence Blog
  http://oraclebi.blogspot.com

- Practical Guide to Data Warehousing in Oracle
  http://www.databasejournal.com/article.php/3304801

- Business Intelligence diagram
  http://www.avanco.com/_assets/img/gfx-bi_diagram.gif

- Oracle Business Intelligence EE Plus
Web pages (references)

- Data Warehousing
  http://www.1keydata.com/datawarehousing/datawarehouse.html
Summary

- **Business Intelligence**
  - could improve business processes
  - summaries, reports, predictions
  - many available commercial products

- **Data warehousing**
  - information gathered from different data source (large size)
  - performing complex queries
  - no effect on performance of operational systems
Discussion

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