Avoiding Common OBIEE Mistakes

Learning from Post-Implementation Assessments
Agenda

- Agenda
- BI First Impressions
- BI Defined
- Transformation Components
- Case Studies
  - Data Storage
  - Metadata Definitions
  - Dashboards & Reports
  - User Analysis
- Summary
- Questions
First Impressions of Business Intelligence

Business intelligence is brilliant!

Raw Data -> Better Business Decisions

Let's install it right away!
Forrester’s Definition

business intelligence is defined as:

- Strategic Insights
- Operational Insights
- Tactical Insights

Transformation occurs through:
- Methodologies
- Processes
- Architectures
- Technologies

✓ Best Practices = BI Success
BI Transformation Components

How it all comes together

Data Storage → Metadata Definitions → Dashboards & Reports → User Analysis
Data Storage
Wayne Enterprises

An Overview

<table>
<thead>
<tr>
<th>Applications</th>
<th>Siebel Marketing, Call Center &amp; Analytics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Unit</td>
<td>Marketing</td>
</tr>
</tbody>
</table>

### The Problem

Wayne Enterprises’ marketing department could not execute their 20 daily email campaigns within 24 hours.

### The Cause

Frequently requested, 3rd party data was being stored in a remote area of the marketing database causing slow running marketing programs.

### The Catch

The 3rd party data was correctly being stored in a proven Oracle “out of the box” data schema.
Technical Terms often heard at Wayne Enterprises

**Target Level**
- A list of fields that can be used to create a segment

**Segment**
- Contains business logic that describes the required criteria of a marketing campaign

**Qualified List Item (QLI)**
- The targeted entity of a segment
- Email address as Qualified List Item

**Marketing Cache**
- Data that satisfies segment criteria will be stored as the QLI value into a temporary Marketing Cache table

**Campaign Load Format**
- The layout of campaign data exported to the transactional application system

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**Example Fields**
- First Name
- Last Name
- Email Address
- Request ID
- Package ID
- Consumer ID

**MC_TARGET_LEVEL**

<table>
<thead>
<tr>
<th>QLI</th>
<th>GUID</th>
</tr>
</thead>
<tbody>
<tr>
<td><a href="mailto:MichaelTGriffith@example.com">MichaelTGriffith@example.com</a></td>
<td>2801WQS</td>
</tr>
<tr>
<td><a href="mailto:CharlesFVazquez@example.com">CharlesFVazquez@example.com</a></td>
<td>2801WQS</td>
</tr>
<tr>
<td><a href="mailto:LarryDSchulte@example.com">LarryDSchulte@example.com</a></td>
<td>2801WQS</td>
</tr>
<tr>
<td><a href="mailto:MiriamRDietz@example.com">MiriamRDietz@example.com</a></td>
<td>2801WQS</td>
</tr>
</tbody>
</table>
1. Marketing Campaign Segment is scheduled in Siebel Marketing (OLTP) and a query is executed against OLAP database (Siebel Analytics)

2. Query results are stored in MC_Target_Level table

3. Attributes are added to the segment results in MC_Target_Level defined in the campaign load so that it can be loaded into OLTP (Call Center, Siebel Marketing)
**DISCOVERIES**

**Poor SQL**

**RED highlights show**
- Outer joins to dimension extension tables (_DX)
- Out of the box 3rd party assigned columns

This SQL statement executes for each of the 20 daily campaigns

```sql
(select distinct T259560."ROW_WID" as c1,
 T259555."LAST_NAME" as c2,
 T259555."FST_NAME" as c3,
 T259555."PRSP_CON_UID" as c4,
 T259551."INTEGRATION_ID" as c5,
 T259555."INTEGRATION_ID" as c6,
 T259574."ADDRESS_KEY" as c7,
 T259574."PERSISTENT_ID" as c8,
 T259555."ROW_WID" as c9,
 concat(coalesce(cast(T259555."INTEGRATION_ID" as VARCHAR(20)) , ''), coalesce('~' , '')) as c10,
 T259552."ADDRESS_KEY" as c11,
 T259551."ROW_WID" as c12,
 T259551."ST_ADDRESS" as c13,
 T259552."ST_ADDRESS2" as c14,
 T259551."CITY" as c15,
 T259551."STATE" as c16,
 T259551."ZIPCODE" as c17,
 T259551."COUNTRY" as c18,
 T259557."INTEGRATION_ID" as c20,
 T259558."PROVIDED_MODEL_NUM" as c21,
 T259557."SERIAL_NUM" as c22,
 T259557."ROW_WID" as c23,
 concat(coalesce(cast(T259557."INTEGRATION_ID" as VARCHAR(20)) , ''), coalesce('0' , '')) as c24
from
 "SIEBEL"."W_PERSON_D" T259555,
 "SIEBEL"."W_PERSON_DX" T259574,
 "SIEBEL"."W_ORG_DX" T259552,
 "SIEBEL"."W_ORG_D" T259551,
 "SIEBEL"."W_ASSET_D" T259557,
 "SIEBEL"."W_ASSET_F" T259560
where

  (and T259555."ROW_WID"= T259551."ROW_WID"
  and T259551."ROW_WID"= T259557."ROW_WID"
  and T259551."ROW_WID"= T259552."ROW_WID"
  and T259555."ROW_WID"= T259560."ROW_WID"
 and T259555."FST_NAME" is not null
 and T259555."PRSP_CON_UID" is not null
 and T259555."LAST_NAME" is not null

  )
```
Technical Solution

Moving the 3rd Party data

- All 3rd party data in the campaign load format was moved from the dimension extension tables to the dimensions themselves.
- Wayne Enterprise’s marketing programs were completing in 1/3 of the original execution time, allowing for all daily campaigns to be completed.
The Origin of the Problem

Preventative measures

Both Business and IT failed to communicate

The Business failed to communicate workload of marketing campaigns.

The Business also felt IT’s first priority was not to help enable business activities.

IT followed best practices by limiting any customization to out of the box data mappings.

IT failed to understand how 3rd party was going to be used.

Organizational Solution

SME’s from IT and business created weekly check in meetings to more closely understand each other’s issues and discover areas for improvement.
Metadata Definitions
Vandelay Industries

Problems with the Metadata

The Problem
Dashboard reports are showing that customers are requesting movies from one trilogy but receiving movies from another trilogy.

The Cause
The dashboard reports were comparing consumer requests (at the request level) to consumer fulfillment (at the consumer level).

The Catch
The issue occurred when segment results of two target levels with different granularity are stored in the same history table.
MOVIE TRILOGY SPECIAL!

START NOW BY PICKING A MOVIE TRILOGY

receive your 1st movie in a few days
your 2nd movie will arrive in a week
in two weeks, you’ll receive the 3rd
Keanu Reeves entered ‘The Matrix’… Trilogy

Data stored in customer order fact

<table>
<thead>
<tr>
<th>ORDER ID</th>
<th>ORDER DATE</th>
<th>CUSTOMER ID</th>
<th>CUSTOMER</th>
<th>SOURCE</th>
<th>REQUEST</th>
</tr>
</thead>
<tbody>
<tr>
<td>1000</td>
<td>1/12/2011</td>
<td>34</td>
<td>SEAN ASTIN</td>
<td>TRILOGY PROMO</td>
<td>LORD OF THE RINGS</td>
</tr>
<tr>
<td>1001</td>
<td>3/8/2011</td>
<td>14</td>
<td>KEANU REEVES</td>
<td>TRILOGY PROMO</td>
<td>THE MATRIX</td>
</tr>
<tr>
<td>1002</td>
<td>2/20/2011</td>
<td>27</td>
<td>HARRISON FORD</td>
<td>TRILOGY PROMO</td>
<td>INDIANA JONES</td>
</tr>
<tr>
<td>1003</td>
<td>2/18/2011</td>
<td>27</td>
<td>HARRISON FORD</td>
<td>TRILOGY PROMO</td>
<td>STAR WARS</td>
</tr>
</tbody>
</table>
The Matrix Segment chooses Keanu

How Keanu gets his first movie

Order ID triggers the first movie to be sent

<table>
<thead>
<tr>
<th>ORDER ID</th>
<th>CUSTOMER</th>
<th>SOURCE</th>
<th>REQUEST</th>
</tr>
</thead>
<tbody>
<tr>
<td>1001</td>
<td>KEANU REEVES</td>
<td>TRILOGY PROMO</td>
<td>THE MATRIX</td>
</tr>
</tbody>
</table>

Marketing Cache (segment results)

<table>
<thead>
<tr>
<th>QLI</th>
<th>GUID</th>
</tr>
</thead>
<tbody>
<tr>
<td>1001</td>
<td>SEGMENT: Matrix 1 20110308</td>
</tr>
</tbody>
</table>
Campaign Load Format

Using the Order ID, the Campaign Load Format adds Order Attributes

Using the Order ID, the Campaign Load File adds Order Attributes

Shipping Vendor

Shipping Vendor

Campaign Load File

Marketing Cache (segment results)

<table>
<thead>
<tr>
<th>QLI</th>
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</thead>
<tbody>
<tr>
<td>1001</td>
<td>SEGMENT: Matrix 1 20110308</td>
</tr>
</tbody>
</table>

SHIPMENT DETAILS

<table>
<thead>
<tr>
<th>SHIP ID</th>
<th>CUSTOMER</th>
<th>ITEM</th>
<th>SEQUENCE</th>
<th>ORDER ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>1021</td>
<td>KEANU REEVES</td>
<td>THE MATRIX</td>
<td>1 of 3</td>
<td>1001</td>
</tr>
</tbody>
</table>

Saving the History

How Keanu gets his first movie

Vandelay Industries
A Different Matrix Segment Chooses Keanu

... One Week Later

Target **CUSTOMER IDs** where

ITEM = ‘THE MATRIX’
SHIP DATE = TODAY() – 7

Customer ID in Shipping History triggers the 2nd movie to be sent

<table>
<thead>
<tr>
<th>SHIP ID</th>
<th>SHIP DATE</th>
<th>CUSTOMER ID</th>
<th>CUSTOMER</th>
<th>ITEM</th>
<th>SEQUENCE</th>
<th>ORDER ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>1021</td>
<td>3/8/2011</td>
<td>14</td>
<td>KEANU REEVES</td>
<td>THE MATRIX</td>
<td>1 of 3</td>
<td>1001</td>
</tr>
</tbody>
</table>

Marketing Cache (segment results)

<table>
<thead>
<tr>
<th>QLI</th>
<th>GUID</th>
</tr>
</thead>
<tbody>
<tr>
<td>14</td>
<td>SEGMENT: Matrix 2 (Reloaded) 20110315</td>
</tr>
</tbody>
</table>
Saving the History

Campaign Load Format

First Name | Last Name | Source | Order ID | Movie

Using the Order ID, the Campaign Load Format adds Order Attributes

Marketing Cache (segment results)

<table>
<thead>
<tr>
<th>QLI</th>
<th>GUID</th>
</tr>
</thead>
<tbody>
<tr>
<td>27</td>
<td>SEGMENT: Matrix 2 (Reloaded) 20110315</td>
</tr>
</tbody>
</table>

Shipping History

SHIPPING HISTORY

Campaign Load File

Shipping Vendor

SHipment Details

<table>
<thead>
<tr>
<th>SHIP ID</th>
<th>CUSTOMER</th>
<th>ITEM</th>
<th>SEQUENCE</th>
<th>ORDER ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>1021</td>
<td>KEANU REEVES</td>
<td>THE MATRIX</td>
<td>1 of 3</td>
<td>1001</td>
</tr>
<tr>
<td>1045</td>
<td>KEANU REEVES</td>
<td>THE MATRIX RELOADED</td>
<td>2 of 3</td>
<td>1001</td>
</tr>
</tbody>
</table>
### Requests

<table>
<thead>
<tr>
<th>ORDER ID</th>
<th>ORDER DATE</th>
<th>CUSTOMER ID</th>
<th>CUSTOMER</th>
<th>SOURCE</th>
<th>REQUEST</th>
</tr>
</thead>
<tbody>
<tr>
<td>1002</td>
<td>2/16/2011</td>
<td>27</td>
<td>HARRISON FORD</td>
<td>TRILOGY PROMO</td>
<td>INDIANA JONES</td>
</tr>
<tr>
<td>1003</td>
<td>2/18/2011</td>
<td>27</td>
<td>HARRISON FORD</td>
<td>TRILOGY PROMO</td>
<td>STAR WARS</td>
</tr>
</tbody>
</table>

### Shipping History

<table>
<thead>
<tr>
<th>SHIP ID</th>
<th>SHIPPED DATE</th>
<th>CUSTOMER ID</th>
<th>ITEM</th>
<th>SEQUENCE</th>
<th>ORDER ID</th>
<th>ORDER REQUEST</th>
</tr>
</thead>
<tbody>
<tr>
<td>957</td>
<td>2/17/2011</td>
<td>27</td>
<td>RAIDERS OF THE LOST ARK</td>
<td>1 of 3</td>
<td>1002</td>
<td>INDIANA JONES</td>
</tr>
<tr>
<td>962</td>
<td>2/19/2011</td>
<td>27</td>
<td>STAR WARS</td>
<td>1 of 3</td>
<td>1003</td>
<td>STAR WARS</td>
</tr>
<tr>
<td>989</td>
<td>2/25/2011</td>
<td>27</td>
<td>TEMPLE OF DOOM</td>
<td>2 of 3</td>
<td>1003</td>
<td>STAR WARS</td>
</tr>
<tr>
<td>992</td>
<td>2/27/2011</td>
<td>27</td>
<td>THE EMPIRE STRIKES BACK</td>
<td>2 of 3</td>
<td>1003</td>
<td>STAR WARS</td>
</tr>
<tr>
<td>1007</td>
<td>3/5/2011</td>
<td>27</td>
<td>THE LAST CRUSADE</td>
<td>3 of 3</td>
<td>1002</td>
<td>INDIANA JONES</td>
</tr>
<tr>
<td>1014</td>
<td>3/7/2011</td>
<td>27</td>
<td>RETURN OF THE JEDI</td>
<td>3 of 3</td>
<td>1002</td>
<td>INDIANA JONES</td>
</tr>
</tbody>
</table>

????????!!!
Using Customer ID to create Campaign Load File

The Harrison Ford Problem explained

Campaign Load Format

<table>
<thead>
<tr>
<th>First Name</th>
<th>Last Name</th>
<th>Source</th>
<th>Order ID</th>
<th>Movie</th>
</tr>
</thead>
</table>

Marketing Cache (segment results)

<table>
<thead>
<tr>
<th>QLI</th>
<th>GUID</th>
</tr>
</thead>
<tbody>
<tr>
<td>27</td>
<td>SEGMENT: IND. JONES 2 (Temple of Doom) 20110315</td>
</tr>
</tbody>
</table>

Customer ID cannot accurately select the Order ID if there are multiple. The system selects one, often times incorrectly.

Campaign Load File

<table>
<thead>
<tr>
<th>SHIP ID</th>
<th>SHIPPED DATE</th>
<th>CUSTOMER ID</th>
<th>ITEM</th>
<th>SEQUENCE</th>
<th>ORDER ID</th>
<th>ORDER REQUEST</th>
</tr>
</thead>
<tbody>
<tr>
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<td>1002</td>
<td>INDIANA JONES</td>
</tr>
<tr>
<td>962</td>
<td>2/19/2011</td>
<td>27</td>
<td>STAR WARS</td>
<td>1 of 3</td>
<td>1003</td>
<td>STAR WARS</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CUSTOMER ID</th>
<th>ITEM</th>
<th>ORDER ID</th>
<th>ORDER REQUEST</th>
</tr>
</thead>
<tbody>
<tr>
<td>27</td>
<td>TEMPLE OF DOOM</td>
<td>1003</td>
<td>STAR WARS</td>
</tr>
</tbody>
</table>
Fixing the Harrison Ford Problem

Change the Target of the Segment

SEGMENT: IND. JONES 2 (Temple of Doom)

Target CUSTOMER IDs ORDER IDS where

ITEM = ‘RAIDERS OF THE LOST ARK’
SHIP DATE = TODAY() – 7

Marketing Cache (segment results)

<table>
<thead>
<tr>
<th>QLI</th>
<th>GUID</th>
</tr>
</thead>
<tbody>
<tr>
<td>1002</td>
<td>SEGMENT: IND. JONES 2 (Temple of Doom) 20110315</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SHIP ID</th>
<th>SHIPPED DATE</th>
<th>CUSTOMER ID</th>
<th>ITEM</th>
<th>SEQUENCE</th>
<th>ORDER ID</th>
<th>ORDER REQUEST</th>
</tr>
</thead>
<tbody>
<tr>
<td>957</td>
<td>2/17/2011</td>
<td>27</td>
<td>RAIDERS OF THE LOST ARK</td>
<td>1 of 3</td>
<td>1002</td>
<td>INDIANA JONES</td>
</tr>
<tr>
<td>962</td>
<td>2/19/2011</td>
<td>27</td>
<td>STAR WARS</td>
<td>1 of 3</td>
<td>1003</td>
<td>STAR WARS</td>
</tr>
</tbody>
</table>
The Other Issue

Preventative measures

Both Business and IT failed to communicate

<table>
<thead>
<tr>
<th>Business</th>
<th>IT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business failed to express importance of requests to movie tracking functionality during implementation</td>
<td>IT failed to recognize the inconsistencies within its own data and understand basic business need</td>
</tr>
</tbody>
</table>

Organizational Solution

Business started hiring more technical SME’s for internal communications with IT
Dashboards & Reports
Quality KPI’s

The Myth

KPI - Inbound Calls

Reaction
“Wow, Brand B is doing great!”

The Truth

KPI – Qualified Leads

Reaction
“The automated messaging system for Brand B is not capturing leads!”

Brand Metrics – Year to Date

Marketing Spend

- Total Marketing Spend: $30,000

- Brand A: 33%
- Brand B: 34%
- Brand C: 33%

Call Center Volume
(inbound calls)

- Brand A
- Brand B
- Brand C

Qualified Leads

- Unique Consumers with a valid address or email

- Brand A
- Brand B
- Brand C
Which Brand is doing better?

Now what do you think?

**Lead Types by Brand**

- **Brand A**
  - Qualified Leads: 72
  - Unqualified: 8

- **Brand B**
  - Qualified Leads: 1734
  - Unqualified: 1666
### Example A.

<table>
<thead>
<tr>
<th></th>
<th>Rounded</th>
<th>Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Premiums earned</td>
<td>405</td>
<td>405,321,632.21</td>
</tr>
<tr>
<td>Net investment income</td>
<td>40</td>
<td>39,989,123.12</td>
</tr>
<tr>
<td>Net realized investment gains/(losses)</td>
<td>-</td>
<td>21,231.00</td>
</tr>
<tr>
<td>Fee and other revenues</td>
<td>3</td>
<td>3,018,897.43</td>
</tr>
<tr>
<td><strong>Total Revenues</strong></td>
<td>448</td>
<td>448,350,883.76</td>
</tr>
</tbody>
</table>

### Example B.

<table>
<thead>
<tr>
<th></th>
<th>Rounded</th>
<th>Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Premiums earned</td>
<td>-</td>
<td>412,987.00</td>
</tr>
<tr>
<td>Net investment income</td>
<td>-</td>
<td>448,345.00</td>
</tr>
<tr>
<td>Net realized investment gains/(losses)</td>
<td>-</td>
<td>401,654.00</td>
</tr>
<tr>
<td>Fee and other revenues</td>
<td>-</td>
<td>422,987.00</td>
</tr>
<tr>
<td><strong>Total Revenues</strong></td>
<td>2</td>
<td>1,685,973.00</td>
</tr>
</tbody>
</table>

If needed, consider rounding to a lower value.
User Analysis
Do you know your End Users?

A few questions to ask yourself

- Do you have smart/proactive end users?  
  **Yes**
- Do they work in a fast, results driven climate?  
  **Yes**
- Do you know what they are responsible for?  
  **I have an idea**
- During their busy peaks do you see a big increase in requests?  
  **A little**

Did you answer anything like this?

It might be time to conduct an internal assessment to uncover some areas for improvement and automation opportunities
Discovering Offline Activities of your Users

Opportunity Gold Mine

Example Financial Reporting Process Map

Discoveries Included
• Group Handoffs
• Manual Calculations
• Reporting off Excel Files (5 Layers Deep)
• Multiple data sources
Technical

- Push all manual activities to the data source & reporting tool
- Review reporting deliverables and make them available in the reports

Preventative Methods

- Determine an agreed upon review period and conduct workshops to expose activity opportunity areas
- Prioritize biggest impact areas first
Lessons Learned

In BI, most problems start because of a lack of understanding between Business and IT.

Below are ways to remove the communication barrier between Business and IT and minimize risk in any Business Intelligence Project:

- Open up communication with IT to help them understand Business Goals and Objectives
- Give purpose behind all IT requests
- Understand at a high level what the effort level is when asking something of IT

- Understand purpose behind all requests by the Business
- Understand all activities of Business Users, even offline.
- Enabling technology for Business activities is the first priority of IT, this outweighs all Best Practices
Questions?

Brian Halloran
BHalloran@archetypeconsulting.com
www.archetypeconsulting.com