

# Analytics Semantic Modeler

A new age of metadata modeling

October 19, 2023

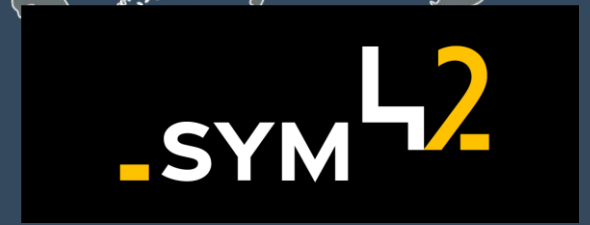
**hroug**   
annual conference

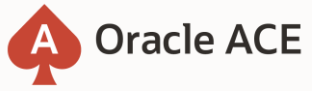
# Gianni Ceresa

Working with *data*,  
Business Analytics  
and EPM tools  
for more than  
15 years



Oracle ACE  
Director





## 400+ technical experts helping peers globally

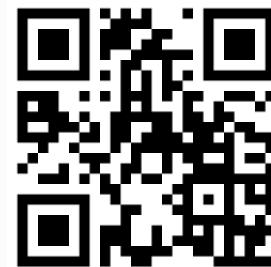
The **Oracle ACE Program** recognizes and rewards community members for their technical and community contributions to the Oracle community



### 3 membership tiers



For more details on Oracle ACE Program:  
[ace.oracle.com](https://ace.oracle.com)



**Nominate**  
yourself or someone you know:  
[ace.oracle.com/nominate](https://ace.oracle.com/nominate)

Connect: [aceprogram\\_ww@oracle.com](mailto:aceprogram_ww@oracle.com)

[Facebook.com/OracleACEs](https://Facebook.com/OracleACEs)

[@oracleace](https://twitter.com/oracleace)



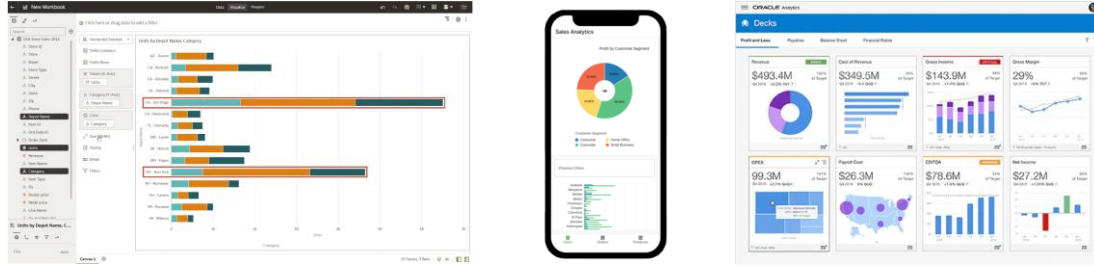
# Analytics Semantic Modeler

A new age of metadata modeling

# Metadata Modeling

**What?**  
**Where?**  
**Why?**

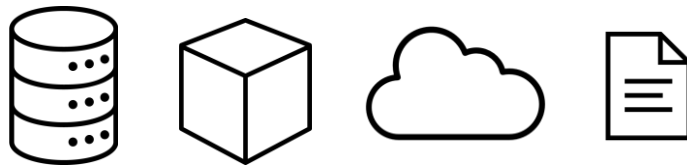
# Oracle Analytics



Front-ends

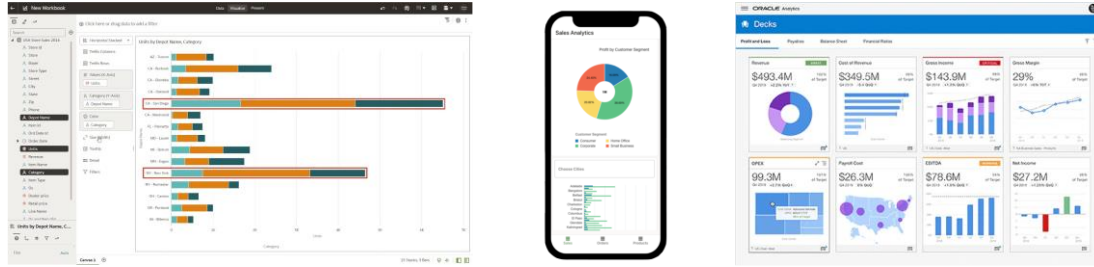


oracle Analytics  
Query Engine

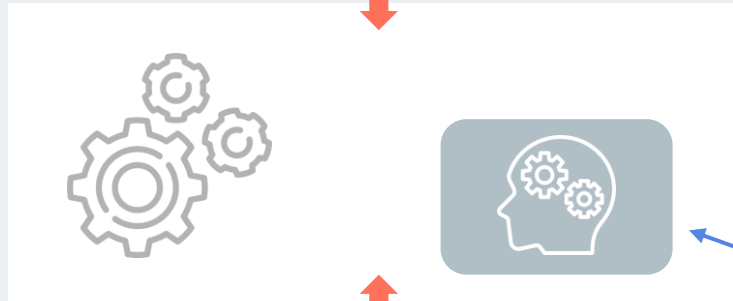


Data Sources

# Oracle Analytics

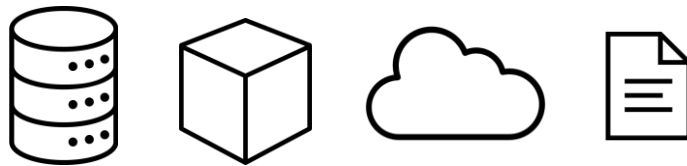


Front-ends



Oracle Analytics  
Query Engine

Semantic Model (RPD)



Data Sources

# Oracle Analytics

In Oracle Analytics you do ***NOT*** write queries!

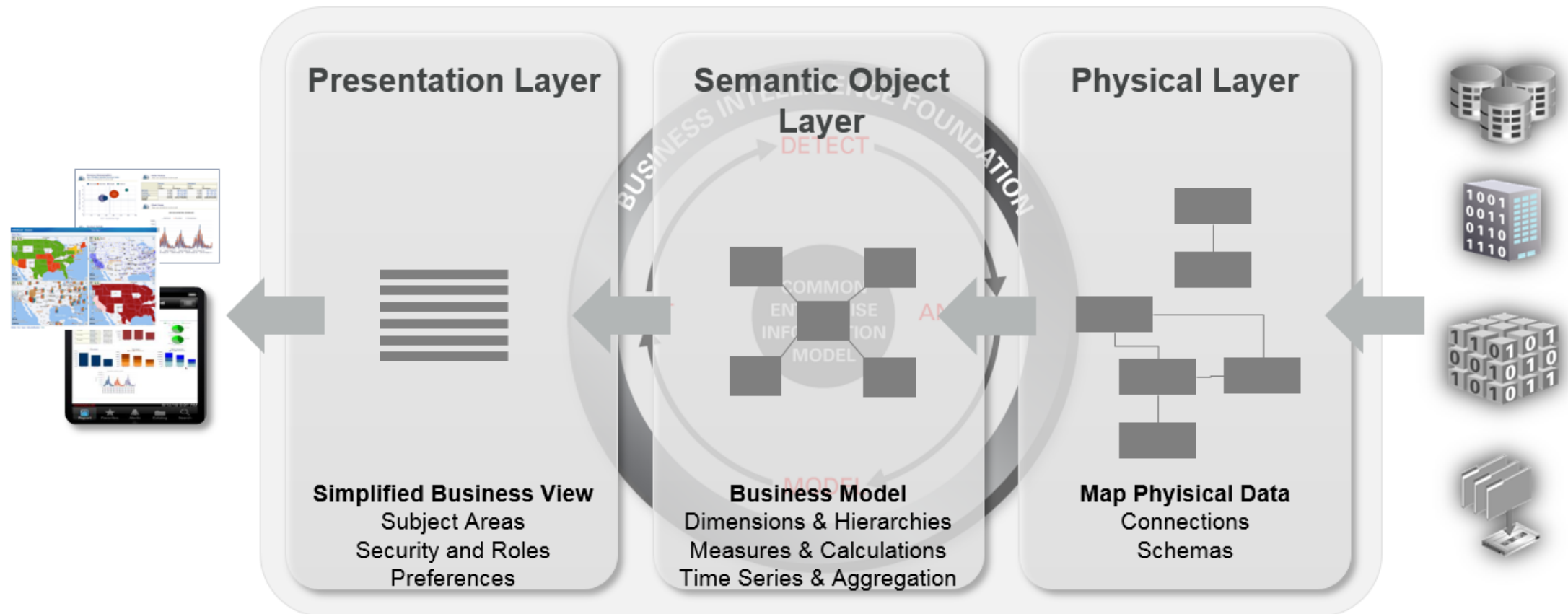
You model things, and the tool generates queries for you.



## Semantic Model (RPD)

## Common Enterprise Information Model

Connecting Data with Self Service Analytic Applications



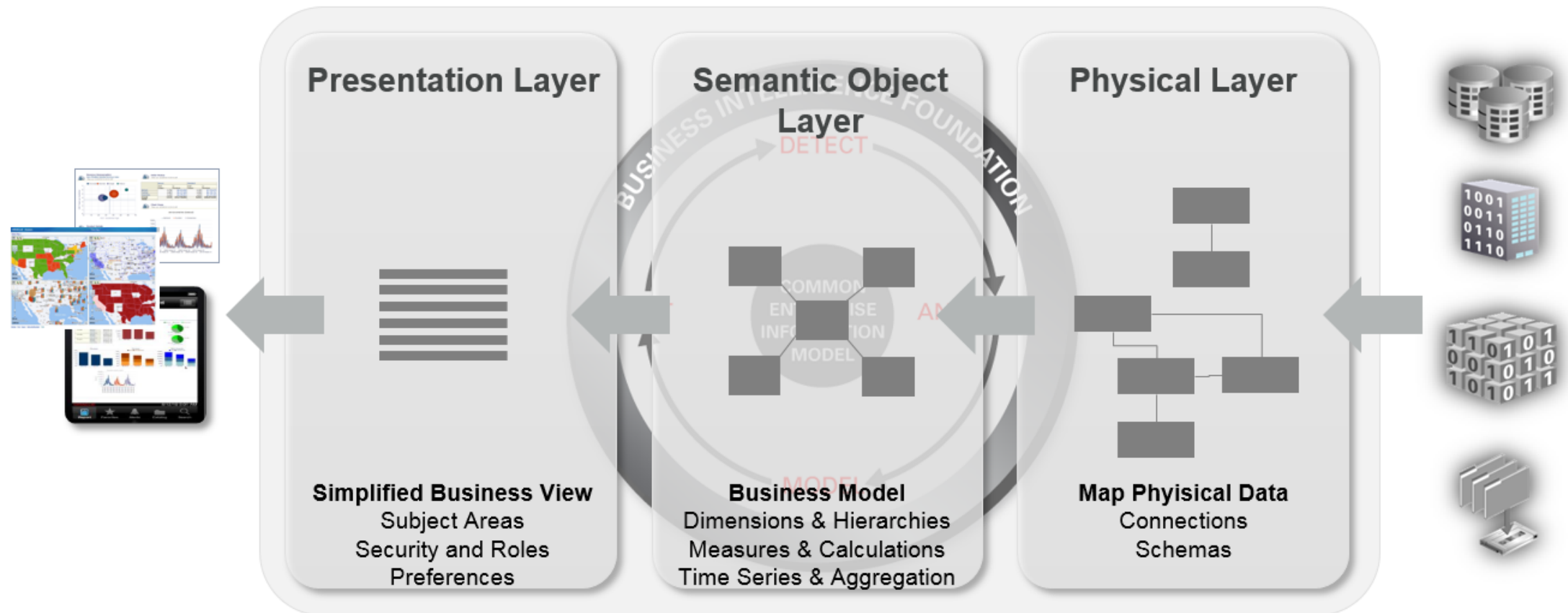
## Common Enterprise Information Model

Connecting Data with Self Service Analytic Applications



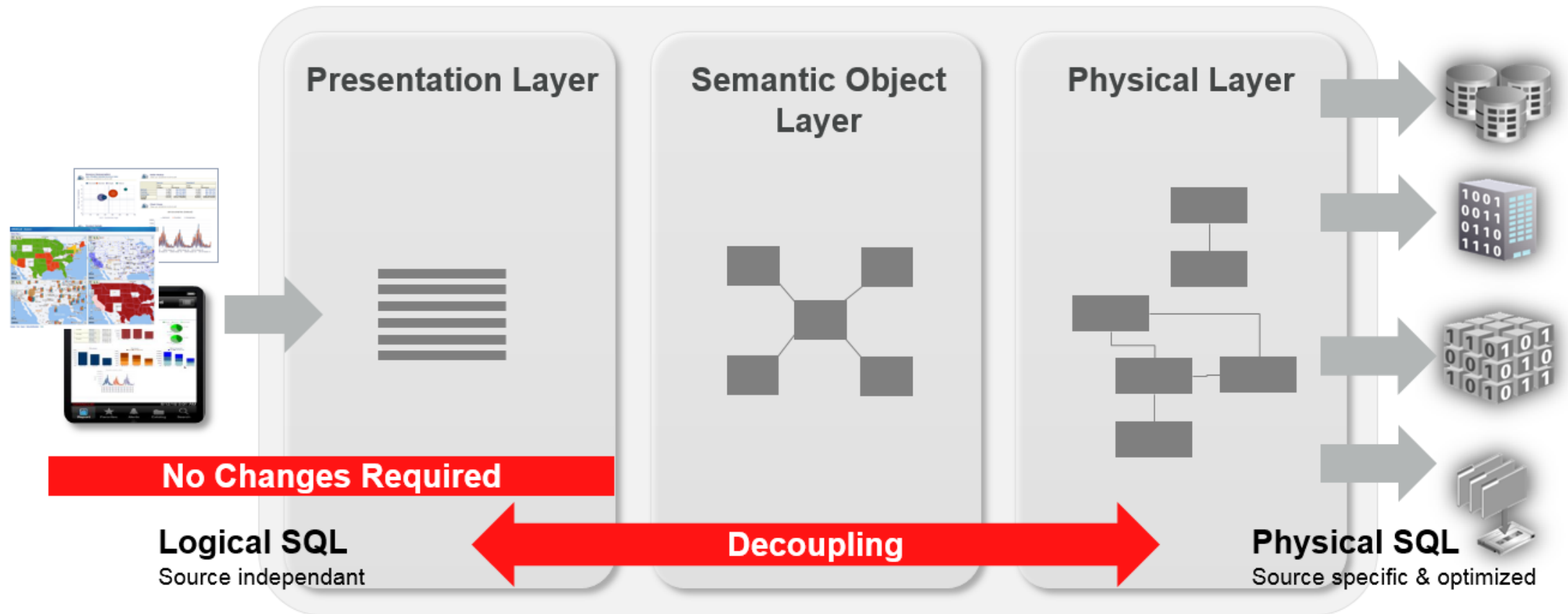
## Common Enterprise Information Model

Connecting Data with Self Service Analytic Applications



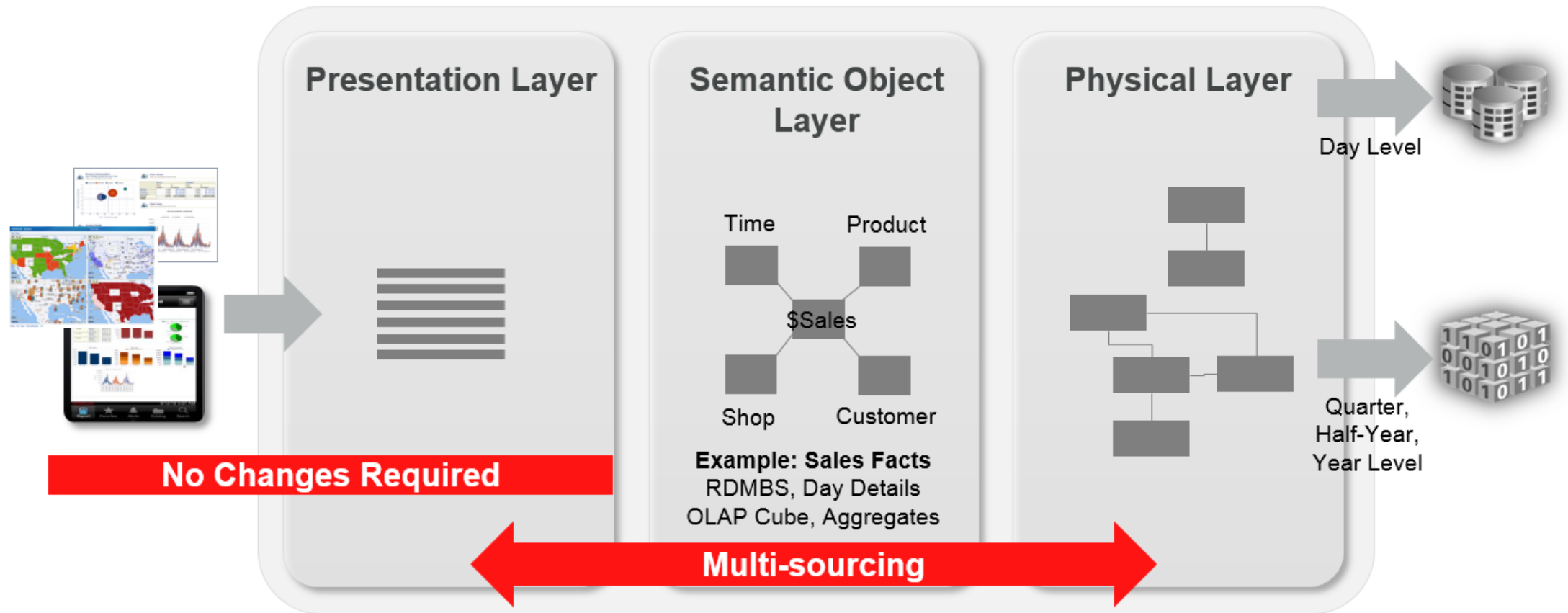
## Common Enterprise Information Model

### Decoupling of Data and Reports



## Common Enterprise Information Model

### Multi-Sourcing and Aggregates



# Semantic Model (RPD)

A quick look at how a Semantic Model (RPD) looks like

# Semantic Model (RPD)

The Semantic Model is a single binary file

To build/develop a Semantic Model you need the “Model Administration Tool”

- Fat client (3+ Gb on disk)
- Windows only (limited list of desktop versions)

Multiple developers? Possible but challenging (compared to what people expects)

Versioning? A single binary file, full replacement of older version

- A XML format exists to help versioning (full of IDs everywhere)



# Semantic Model (RPD) - MDS XML

Name	Date modified	Type
BusinessModel	28/11/2022 12:24	File folder
ConnectionPool	28/11/2022 12:24	File folder
Database	28/11/2022 12:24	File folder
Dimension	28/11/2022 12:24	File folder
LogicalComplexJoin	28/11/2022 12:24	File folder
LogicalTable	28/11/2022 12:24	File folder
LogicalTableSource	28/11/2022 12:24	File folder
PhysicalDisplayFolder	28/11/2022 12:24	File folder
PhysicalTable	28/11/2022 12:24	File folder
PresentationCatalog	28/11/2022 12:24	File folder
PresentationHierarchy	28/11/2022 12:24	File folder
PresentationTable	28/11/2022 12:24	File folder
Schema	28/11/2022 12:24	File folder
User	28/11/2022 12:24	File folder

Name	Date modified	Type
40000000-4524-18db-ac4e-c0a86eb50000.xml	28/11/2022 12:24	XML Document
80000000-4526-18db-ac4e-c0a86eb50000.xml	28/11/2022 12:24	XML Document
80000000-4529-18db-ac4e-c0a86eb50000.xml	28/11/2022 12:24	XML Document
c0000000-4527-18db-ac4e-c0a86eb50000.xml	28/11/2022 12:24	XML Document

# Semantic Model (RPD) - MDS XML

Name	Date modified	Type
Business Model	28/11/2022 12:24	File folder

```
1 <?xml version="1.0" encoding="UTF-8"?>
2 <LogicalTable mdsid="m80000000-4526-18db-ac4e-c0a86eb50000" name="Dim Customer" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns="http://www.oracle.com/obis/repository" sub
3   <LogicalColumn mdsid="m4000000c-45a6-18db-ac4e-c0a86eb50000" name="# Customer id" isWriteable="false">
4     <AttributeDefn mdsid="m00000001-01f4-0000-b8f3-9da300000000" name="AttributeDefn">
5       <ExprText>
6         <![CDATA["%1"]]>
7       </ExprText>
8       <ExprTextDesc>
9         <![CDATA["ORCL"."SH"."Dim - Customers"."CUST_ID"]]>
10      </ExprTextDesc>
11      <ObjectRefList>
12        <RefObject refId="m00000001-01f4-0000-b8f3-9da300000000-m00000008-44ed-18db-ac4e-c0a86eb50000" objectTypeId="3003" objectRef="/oracle/bi/server/base/PhysicalTable/0000
13      </ObjectRefList>
14    </AttributeDefn>
15  </LogicalColumn>
16  <LogicalColumn mdsid="m40000008-45a6-18db-ac4e-c0a86eb50000" name="Customer name" isWriteable="false">
17    <AttributeDefn mdsid="m00000002-01f4-0000-8ab9-199000000000" name="AttributeDefn">
18      <ExprText>
19        <![CDATA["%1" || ' ' || "%2" ]]>
20      </ExprText>
21      <ExprTextDesc>
22        <![CDATA["ORCL"."SH"."Dim - Customers"."CUST_FIRST_NAME" || ' ' || "ORCL"."SH"."Dim - Customers"."CUST_LAST_NAME" ]]>
23      </ExprTextDesc>
24      <ObjectRefList>
25        <RefObject refId="m00000002-01f4-0000-8ab9-199000000000-m00000011-44ed-18db-ac4e-c0a86eb50000" objectTypeId="3003" objectRef="/oracle/bi/server/base/PhysicalTable/0000
26        <RefObject refId="m00000002-01f4-0000-8ab9-199000000000-m00000012-44ed-18db-ac4e-c0a86eb50000" objectTypeId="3003" objectRef="/oracle/bi/server/base/PhysicalTable/0000
27      </ObjectRefList>
28    </AttributeDefn>
29  </LogicalColumn>
```

80000000-4526-18db-ac4e-c0a86eb50000.xml	28/11/2022 12:24	XML Document
80000000-4529-18db-ac4e-c0a86eb50000.xml	28/11/2022 12:24	XML Document
c0000000-4527-18db-ac4e-c0a86eb50000.xml	28/11/2022 12:24	XML Document

# Semantic Model (RPD)

The Semantic Model is a single binary file

To build/develop a Semantic Model you need the “Model Administration Tool”

- Fat client (3+ Gb on disk)
- Windows only (limited list of desktop versions)

Multiple developers? Possible but challenging (compared to what people expects)

Versioning? A single binary file, full replacement of older version

- A XML format exists to help versioning (full of IDs everywhere)

*Old-school tool, old-school design, old-school development methods*

## **Model Administration Tool: Evolution over the years**

**Back in 2007 with the release of OBIEE 10g**

## Presentation

- + CSW - Admissions and Recruiting - Admission Application
- + CSW - Admissions and Recruiting - Admission Application Status
- + CSW - Admissions and Recruiting - External Academic Summary
- + CSW - Admissions and Recruiting - External Test Scores
- + CSW - Admissions and Recruiting - Prospects to Applicants to Enrollees
- + CSW - Admissions and Recruiting - Recruiting
- + CSW - Campus Community - Service Indicators
- + CSW - Student Financials Services - Award Disbursement
- + CSW - Student Financials Services - Award Snapshot
- + CSW - Student Financials Services - Bill Summary
- + CSW - Student Financials Services - Pending Payments
- + CSW - Student Financials Services - Student Financials Transactions
- + CSW - Student Records - Academic Plan Summary
- + CSW - Student Records - Academic Program Detail
- + CSW - Student Records - Class
- + CSW - Student Records - Class Enrollment
- + CSW - Student Records - Class Instructor
- + CSW - Student Records - Class Meeting Pattern
- + CSW - Student Records - Enrollment Requests
- + CSW - Student Records - Institution Summary
- + CSW - Student Records - Student Degrees
- + CSW - Student Records - Term Enrollment

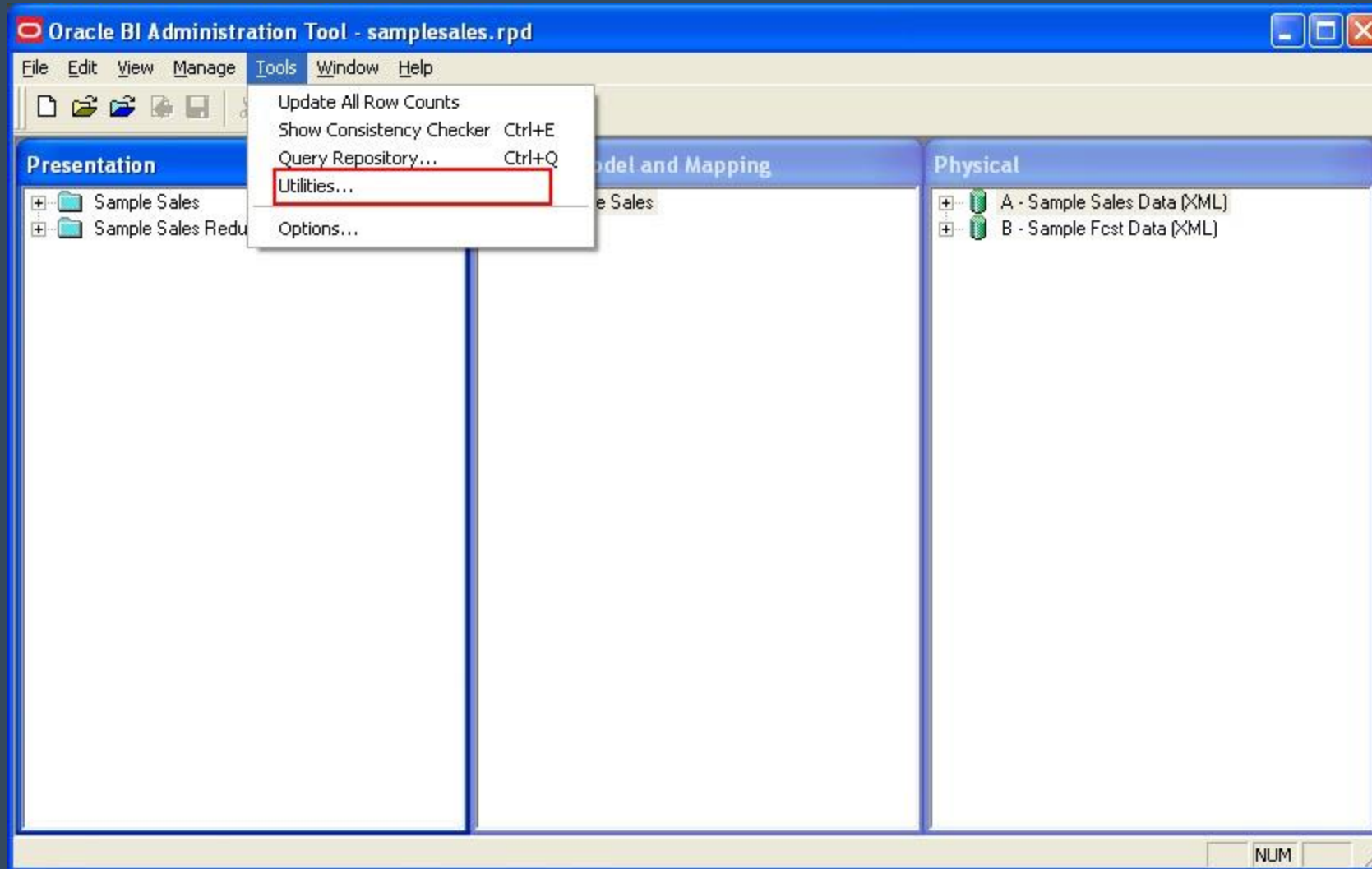
## Business Model and Mapping

- + CSW - Admissions and Recruiting - Admission Application
- + CSW - Admissions and Recruiting - Admission Application Status
- + CSW - Admissions and Recruiting - External Academic Summary
- + CSW - Admissions and Recruiting - External Test Scores
- + CSW - Admissions and Recruiting - Prospects to Applicants to Enrollees
- + CSW - Admissions and Recruiting - Recruiting
- + CSW - Campus Community - Service Indicators
- + CSW - Student Financials Services - Award Disbursement
- + CSW - Student Financials Services - Award Snapshot
- + CSW - Student Financials Services - Bill Summary
- + CSW - Student Financials Services - Pending Payments
- + CSW - Student Financials Services - Student Financials Transactions
- + CSW - Student Records - Academic Plan Summary
- + CSW - Student Records - Academic Program Detail
- + CSW - Student Records - Class
- + CSW - Student Records - Class Enrollment
- + CSW - Student Records - Class Instructor
- + CSW - Student Records - Class Meeting Pattern
- + CSW - Student Records - Enrollment Requests
- + CSW - Student Records - Institution Summary
- + CSW - Student Records - Student Degrees
- + CSW - Student Records - Term Enrollment

## Physical

- Enterprise Warehouse
  - MDW InitBlock Connection Pool
  - MDW Connection Pool
  - CS Dimensions
  - CS Facts
    - F\_ACADPLAN\_SUMM
    - F\_ACAD\_PROG\_DTL
    - F\_ADM\_APPL
    - F\_ADM\_APPL\_STAT
    - F\_AWD\_DISB
    - F\_AWD\_SNPSHT
    - F\_CLASS\_ENRLMT
    - F\_CLASS\_INSTRCT
    - F\_INST\_SUMM
    - F\_SF\_TRAN
    - F\_STU\_RECRT
    - F\_TERM\_ENRLMT
    - F\_BIL\_SNPSHT
    - F\_EXT\_ACAD\_SUMM
    - F\_EXT\_TESTSCORE
    - F\_PYMNT\_PENDING
    - F\_Prospects to Applicants to Enrollees

2007



## **Model Administration Tool: Evolution over the years**

**Today with the latest Oracle Analytics Cloud or  
Oracle Analytics Server 2023**

Oracle BI Administration Tool - SA607 VM BRIX01.rpd

File Edit View Manage Tools Diagram Window Help

**Presentation**

- A - Sample Sales
- B - Sample Sales Exa
- C - Sample Costs
- D - Sample Federated
- E - Sample Essbase
- F - Essbase Interaction
- G - Sample Essbase GL
- H - Sample Olap
- K - Sample Flat Files
- L - Geo Loc
- M - Big Data Movie
- N - Big Data Log Analysis
- O - OAA Integration
- R - ORE Sample
- U - Usage Tracking
- X - Functional Sources -----
- X - Airlines Delay
- X - Airlines Traffic
- X1 - Db Structure
- X2 - Scheduled Jobs
- X3 - Sample BPM
- X5 - OLTP (Fusion Order)
- X6 - Warranty Claims
- Y10 - Movies Demo
- Y11 - Other Demos
- Y12 - Donations
- Y13 - Sports Demo

**Business Model and Mapping**

- 01 - Sample App
  - H0 Time
  - H1 Products
  - H2 Products Ragged SkipLevels
  - H3 Offices
  - H4 Offices and Channels (M:M)
  - H5 Sales Rep
  - H6 Customers
  - H6a Customers (Time Temporal Query)
  - H6b Customers (Time Temporal Session)
  - H7 Orders
  - H7b Orders TimeZone Converted
  - H8 LTV Classification
  - D0 Time
  - D1 Products (Level Based Hier)
  - D2 Products (Ragged SkipLevels Hier)
  - D3 Offices
  - D4 Offices and Channels (M:M Joins)
  - D5 Sales Rep (Parent Child Hier)
  - D6 Customers (Snowflakes)
  - D6a Customers (SCD ViewQuery)
  - D6b Customers (SCD Session)
  - D7 Orders (Facts Attributes)
  - D7b Orders (TimeZone Converted)
  - D8 Data Mining Cust LTV Tree Nodes
  - F0 Sales Base Measures
  - F1 Time Based Fragmentation
  - F2 Fragmented Measures Targets
  - F3 M:M Quotas Base Measures
  - F4 Headcount Base Measures

**Physical**

- 01 - Sample App Data (ORCL)
  - Sample Relational Connection
  - BIFOD
  - BISAMPLE
  - BISAMPLE\_OTHER
  - BISAMPLE\_RT
  - 02 - Sample App Exa Data (ESSB)
  - 02 - Sample App Exa Data (ORCL)
  - 03 - Essbase BI Acceleration
  - 03 - Essbase GL Basic
  - 03 - Essbase GL Sample Flat
  - 03 - Essbase GL Sample Hierarchical
  - 03 - Essbase Sample E1 Flat
  - 03 - Essbase Sample E2 (Default Import)
  - 04 - Sample OLAP AW
  - 07 - ORE Sample
  - 08 - Sample App Xml Target Data
  - 09 - Sample Geo Data (ORCL)
  - 10 - BI Publisher Audit
  - 10 - System DB (ORCL)
  - 20 - Big Data Movie (Hive)
  - 21 - Big Data Movie (Impala)
  - 22 - Big Data Movie (BDSQL)
  - 23 - Big Data Movie (Spark)
  - 24 - Big Data Movie (AGGS)
  - 25 - Big Data Log Analysis
  - X - Functional Sources Examples -----
  - X0 - Airlines Demo Dbs (ESSB)
  - X0 - Airlines Demo Dbs (ORCL)
  - X1 - ORCL Database Admin

Database: "01 - Sample App Data (ORCL)"



## **Model Administration Tool: Evolution over the years**

**Side by side comparison of 16 years of evolutions**

# 2007 - 2023 : 16 years

The screenshot displays the Oracle BI Administration Tool interface, showing three main panels: Presentation, Business Model and Mapping, and Physical. The interface is titled "Oracle BI Administration Tool - SA607 VM BRIX01.rpd".

- Presentation Panel:** Lists various presentation objects such as "A - Sample Sales", "B - Sample Sales Exa", "C - Sample Costs", "D - Sample Federated", "E - Sample Essbase", "F - Essbase Interaction", "G - Sample Essbase GL", "H - Sample Olap", "K - Sample Flat Files", "L - Geo Loc", "M - Big Data Movie", "N - Big Data Log Analysis", "O - OAA Integration", "R - ORE Sample", "U - Usage Tracking", and "X - Usage Tracking".
- Business Model and Mapping Panel:** Shows a hierarchical structure for "01 - Sample App" with sub-objects like "H0 Time", "H1 Products", "H2 Products Ragged SkipLevels", "H3 Offices", "H4 Offices and Channels (M:M)", "H5 Sales Rep", "H6 Customers", "H6a Customers (Time Temporal Query)", "H6b Customers (Time Temporal Session)", "H7 Orders", "H7b Orders TimeZone Converted", "H8 LTV Classification", "D0 Time", and "D1 Products (Level Based Hier)".
- Physical Panel:** Displays the physical data sources, including "01 - Sample App Data (ORCL)", "Sample Relational Connection", "BIFOD", "BISAMPLE", "BISAMPLE\_OTHER", "BISAMPLE\_RT", "02 - Sample App Exa Data (ESSB)", "02 - Sample App Exa Data (ORCL)", "03 - Essbase BI Acceleration", "03 - Essbase GL Basic", "03 - Essbase GL Sample Flat", "03 - Essbase GL Sample Hierarchical", "03 - Essbase Sample E1 Flat", "03 - Essbase Sample E2 (Default Import)", and "04 - Sample OLAP AW".

A dark, jagged horizontal line is drawn across the middle of the interface, separating the top and bottom sections of the screenshot. The year "2023" is written in red on the right side of the Physical panel, and "2007" is written in red on the right side of the bottom section.

2023

2007

# 2007 - 2023 : 16 years

Oracle BI Administration Tool - SA607 VM BRIX01.rpd

File Edit View Manage Tools Diagram Window Help

**Presentation**

- A - Sample Sales
- B - Sample Sales Exa
- C - Sample Costs
- D - Sample Federated
- E - Sample Essbase
- F - Essbase Interaction
- G - Sample Essbase GL
- H - Sample Olap
- K - Sample Flat Files
- L - Geo Loc
- M - Big Data Movie
- N - Big Data Log Analysis
- O - OAA Integration
- R - ORE Sample
- U - Usage Tracking
- X - Usage Tracking

**Business Model and Mapping**

- 01 - Sample App
  - H0 Time
  - H1 Products
  - H2 Products Ragged SkipLevels
  - H3 Offices
  - H4 Offices and Channels (M:M)
  - H5 Sales Rep
  - H6 Customers
  - H6a Customers (Time Temporal Query)
  - H6b Customers (Time Temporal Session)
  - H7 Orders
  - H7b Orders TimeZone Convert
  - H8 LTV Classification
  - D0 Time
  - D1 Products (Level Based Hierarchy)
  - D2 Products (Ragged Skip Levels)

**Physical**

- 01 - Sample App Data (ORCL)
  - Sample Relational Connection
  - BIFOD
  - BISAMPLE
  - BISAMPLE\_OTHER
  - BISAMPLE\_RT
  - 02 - Sample App Exa Data (ESSB)
  - 02 - Sample App Exa Data (ORCL)
  - 03 - Essbase BI Acceleration
  - 03 - Essbase GL Basic
  - 03 - Essbase GL Sample Flat
  - 03 - Essbase GL Sample Hierarchical
  - 03 - Essbase Sample E1 Flat
  - 03 - Essbase Sample E2 (Default Import)
  - 04 - Sample OLAP AW
  - 07 - ORE Sample
- CS Dimensions
- CS Facts
  - F\_ACADPLAN\_SUMM
  - F\_ACAD\_PROG\_DTL
  - F\_ADM\_APPL
  - F\_ADM\_APPL\_STAT
  - F\_AWD\_DISB
  - F\_AWD\_SNPSHT
  - F\_CLASS\_ENRLMT
  - F\_CLASS\_INSTRCT
  - F\_INST\_SUMM
  - F\_SF\_TRAN
  - F\_STU\_RECRT
  - F\_TERM\_ENRLMT
  - F\_BIL\_SNPSHT
  - F\_EXT\_ACAD\_SUMM
  - F\_EXT\_TESTSCORE
  - F\_PYMNT\_PENDING
  - F\_Prospects to Applicants to Enrollees

2022

NEW ICONS!!

2007

## 2007 - 2023 : 16 years

There are also other things...

- New rules enforced by the tool
- Connection to cloud instances
- Some support for versioning
- Changes in physical and logical joins
- Etc.

Is it a bad thing that, in 16 years, little changed in the way of developing a semantic model (RPD)?

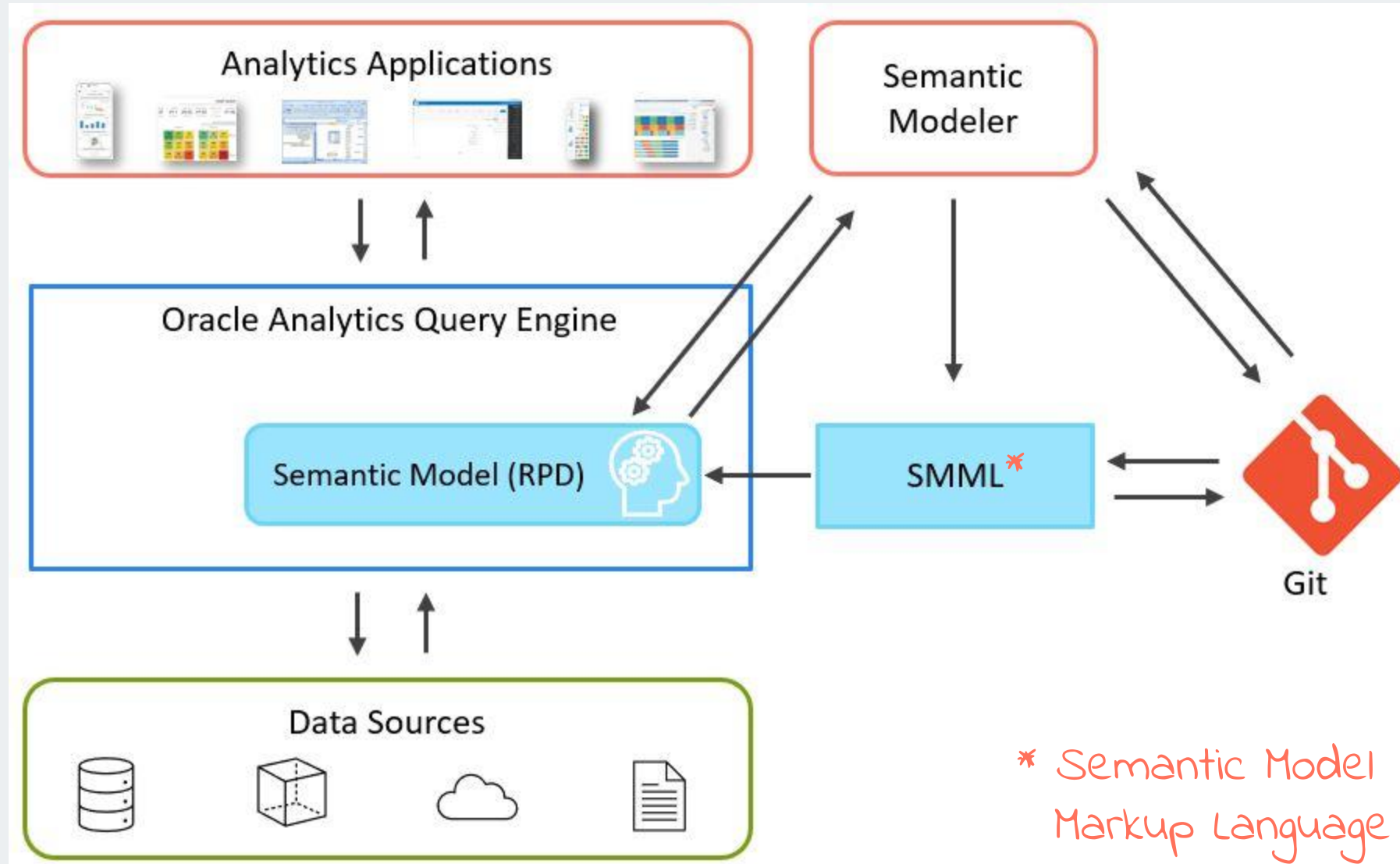
Not at all! It does work, it does the job

But...

# **Analytics Semantic Modeler**

**A modern approach to Semantic Model (RPD) development**

# Analytics Semantic Modeler



# Analytics Semantic Modeler

The new Analytics Semantic Modeler is ...




- Web-based, nothing to install and works in any “modern” browser
- Native GIT integration
- New file format: SMML (Semantic Model Markup Language, in JSON)

# Analytics Semantic Modeler - SMML

T

- 🏠
- 📄
- 📄
- 🔗
- 📌
- 📄
- 📄
- 📄
- 📄
- 📄
- 📄
- ✂️
- ⚙️

Dim Customer.json 3.89 KIB

Open in Web IDE ⌵ Replace Delete   

```
1 {
2   "logicalTable" : {
3     "name" : "Dim Customer",
4     "type" : "DIMENSION",
5     "primaryKey" : [ "# Customer id" ],
6     "logicalColumns" : [ {
7       "name" : "# Customer id",
8       "dataType" : "DOUBLE",
9       "writeable" : false,
10      "logicalColumnSource" : {
11        "derivedFrom" : "PHYSICAL_COLUMNS",
12        "physicalMappings" : [ {
13          "logicalTableSource" : "Dim - Customers",
14          "physicalExpression" : {
15            "expressionTemplate" : "%1",
16            "expressionObjects" : [ "physicalColumn:ORCL.SH.Dim - Customers.CUST_ID" ]
17          }
18        } ]
19      },
20      "logicalLevel" : "Customer Detail"
21    }, {
22      "name" : "Customer name",
23      "dataType" : "VARCHAR",
24      "writeable" : false,
25      "logicalColumnSource" : {
26        "derivedFrom" : "PHYSICAL_COLUMNS",
27        "physicalMappings" : [ {
28          "logicalTableSource" : "Dim - Customers",
29          "physicalExpression" : {
30            "expressionTemplate" : "%1 || ' ' || %2",
31            "expressionObjects" : [ "physicalColumn:ORCL.SH.Dim - Customers.CUST_FIRST_NAME", "physicalColumn:ORCL.SH.Dim - Customers.CUST_LAST_NAME" ]
32          }
33        } ]
34      },
35      "logicalLevel" : "Customer Detail"
36    } ]
37  }
38 }
```

 @G\_Ceresa





# Analytics Semantic Modeler - SMML

Dim Customer.json 3.89 KIB

Open in Web IDE Replace Delete

```
1 {
2   "logicalTable" : {
3     "name" : "Dim Customer",
4
5     "expressionObjects" : [
6       {
7         "name" : "Customer id",
8         "isWriteable" : "false",
9         "logicalColumn" : {
10          "name" : "# Customer id",
11          "isWriteable" : "false",
12          "attributeDefn" : {
13            "name" : "AttributeDefn",
14            "expressionText" : "[ORCL"."SH"."Dim - Customers"."CUST_ID"]",
15            "expressionTextDesc" : "[ORCL"."SH"."Dim - Customers"."CUST_ID"]",
16            "objectRefList" : [
17              {
18                "refId" : "m0000001-01f4-0000-b8f3-9da300000000-m0000008-44ed-18db-ac4e-c0a86eb50000",
19                "objectTypeId" : "3003",
20                "objectRef" : "/oracle/bi/server/base/PhysicalTable/00000001-01f4-0000-b8f3-9da300000000-00000008-44ed-18db-ac4e-c0a86eb50000"
21              }
22            ]
23          }
24        }
25      },
26      {
27        "name" : "Customer name",
28        "isWriteable" : "false",
29        "logicalColumn" : {
30          "name" : "Customer name",
31          "isWriteable" : "false",
32          "attributeDefn" : {
33            "name" : "AttributeDefn",
34            "expressionText" : "[ORCL"."SH"."Dim - Customers"."CUST_FIRST_NAME" || ' ' || "ORCL"."SH"."Dim - Customers"."CUST_LAST_NAME"]",
35            "expressionTextDesc" : "[ORCL"."SH"."Dim - Customers"."CUST_FIRST_NAME" || ' ' || "ORCL"."SH"."Dim - Customers"."CUST_LAST_NAME"]",
36            "objectRefList" : [
37              {
38                "refId" : "m0000002-01f4-0000-8ab9-199000000000-m00000011-44ed-18db-ac4e-c0a86eb50000",
39                "objectTypeId" : "3003",
40                "objectRef" : "/oracle/bi/server/base/PhysicalTable/00000002-01f4-0000-8ab9-199000000000-00000011-44ed-18db-ac4e-c0a86eb50000"
41              },
42              {
43                "refId" : "m0000002-01f4-0000-8ab9-199000000000-m00000012-44ed-18db-ac4e-c0a86eb50000",
44                "objectTypeId" : "3003",
45                "objectRef" : "/oracle/bi/server/base/PhysicalTable/00000002-01f4-0000-8ab9-199000000000-00000012-44ed-18db-ac4e-c0a86eb50000"
46              }
47            ]
48          }
49        }
50      }
51     ]
52   }
53   "logicalLevel" : "Customer Detail"
54 }
```

# Analytics Semantic Modeler

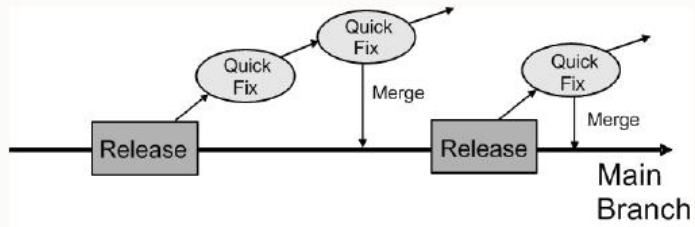
The new Analytics Semantic Modeler is ...

- Web-based, nothing to install and works in any “modern” browser
- Native GIT integration
- New file format: SMML (Semantic Model Markup Language, in JSON)
- Allows to convert from/to a Semantic Model (RPD) file (the binary one)
- Allows to easily deploy a Semantic Model to an Oracle Analytics instance
- Connections’ credentials are now outside the Semantic Model
- Multiple developers are supported with GIT-branching and merging

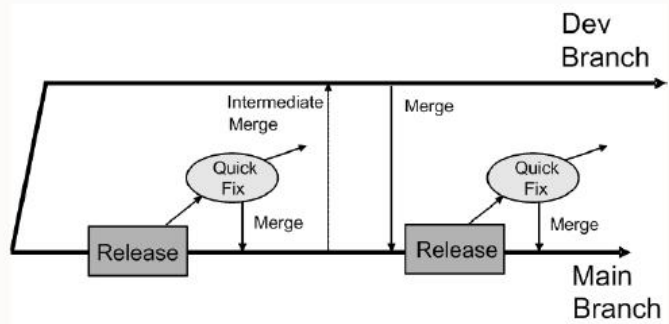
# Analytics Semantic Modeler - Multi-User development

## Multi-User development - Branching

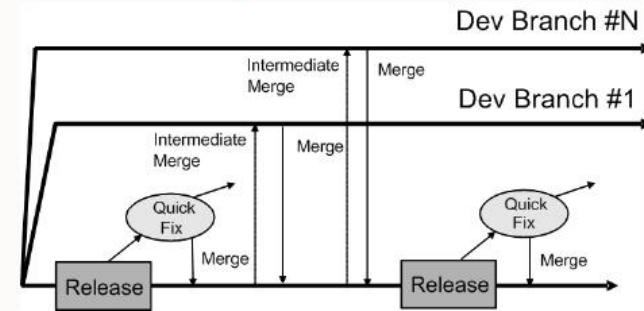
### 1. Simple Development Model



### 2. Small Team Development Model

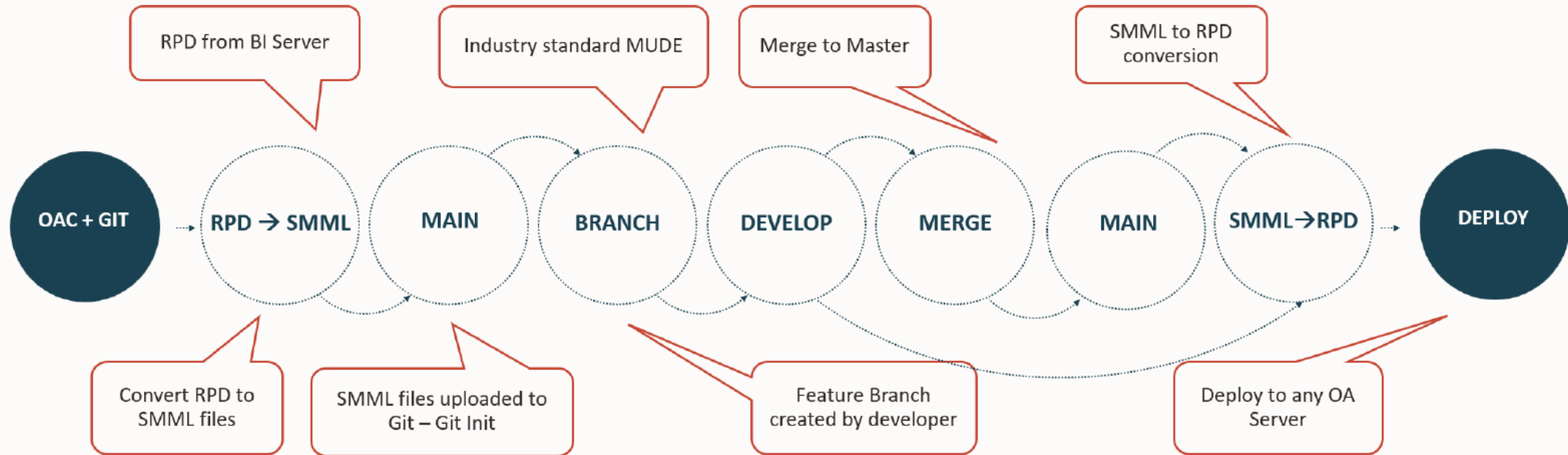


### 3. Multi-Team, Multi-Release Model.



# Analytics Semantic Modeler - Multi-User development

## Development Process



Copyright © 2022 Oracle and/or its affiliates.



# Analytics Semantic Modeler

The new Analytics Semantic Modeler is ...

- Web-based, nothing to install and works in any “modern” browser
- Native GIT integration
- New file format: SMML (Semantic Model Markup Language, in JSON)
- Allows to convert from/to a Semantic Model (RPD) file
- Allows to easily deploy a Semantic Model to an Oracle Analytics instance
- Connections’ credentials are now outside the Semantic Model
- Multiple developers are supported with GIT-branching and merging
- A nicer and easier to use lineage view (limited to the semantic model itself)

# Analytics Semantic Modeler - Lineage

← \* UKOUG22 - sample Branch: main 🔍 ⌵ New 📄 ⌵ ⋮ GC

🏠 📄 (x) 📄

### Presentation Layer

Search  x +

- 📄 Sales History - Fact Sales
  - 📄 **Dim Customer**
    - 📄 Hier - Dim Customer
      - A # Customer id
      - A Customer birthyear
      - A Customer gender
      - A Customer marital status
      - A Customer name
    - 📄 Dim Product
    - 📄 Dim Time
    - 📄 Fact Sales

### Lineage View for Dim Customer

The diagram illustrates the lineage of the 'Dim Customer' table. It shows three stages of data transformation:

- Dim - Customers**: The source table with columns: CUST\_ID (1.2), CUST\_GENDER (1.2), CUST\_YEAR\_OF\_BIRTH (9.9), CUST\_MARITAL\_STATUS (ab), CUST\_LAST\_NAME (ab), and CUST\_FIRST\_NAME (ab).
- Dim Customer**: An intermediate table with columns: CUSTOMER NAME (ab), CUSTOMER MARITAL STATUS (ab), # CUSTOMER ID (1.2), CUSTOMER BIRTHYEAR (9.9), and CUSTOMER GENDER (1.2).
- Dim Customer (Customer name)**: The final table with columns: CUSTOMER NAME (ab), # CUSTOMER ID (1.2), CUSTOMER GENDER (1.2), CUSTOMER MARITAL STATUS (ab), and CUSTOMER BIRTHYEAR (9.9).

Green lines indicate the lineage flow between these tables. The 'Dim Customer' table is highlighted with a green border, and its 'CUSTOMER NAME' column is selected in the final table view.

git

# Analytics Semantic Modeler

The new Analytics Semantic Modeler is ...

- Web-based, nothing to install and works in any “modern” browser
- Native GIT integration
- New file format: SMML (Semantic Model Markup Language, in JSON)
- Allows to convert from/to a Semantic Model (RPD) file
- Allows to easily deploy a Semantic Model to an Oracle Analytics instance
- Connections’ credentials are now outside the Semantic Model
- Multiple developers are supported with GIT-branching and merging
- A nicer and easier to use lineage view (limited to the semantic model itself)

All (most) the issues of the old are corrected, but...

# Analytics Semantic Modeler

The new Analytics Semantic Modeler is also ...

- Web-based: if your browser crash, good luck in guessing what has been saved or not
- Web-based: the 3 layers that were visible all the time are now different pages/tabs, it requires more clicks, there is less global visibility of the whole content
- Web-based: no more keyboard shortcuts, lot more clicks for the same job
- The new JSON format isn't much different than the old XML: a very custom structure and FQN here and there for references
- Limited list of sources supported for now: only relational sources (Essbase is work in progress...)
- Multi-user development is still prone to corruption: GIT-branching and merging will see JSON code, not a semantic model, Oracle Analytics rules aren't enforced

*well, modern doesn't always mean great or perfect...*



# Analytics Semantic Modeler

A quick look at the new Analytics Semantic Modeler

(demo, have a look at

<https://blogs.oracle.com/analytics/post/the-semantic-modeler-in-oracle-analytics-cloud>

if looking at the PDF)

# Analytics Semantic Modeler

The Analytics Semantic Modeler is cloud only, changes and fixes are still being implemented.

It is very different than the old fat client *Model Administration Tool*, experienced users will need some time to transition to the new one (good news both will stay in parallel for some time).

No install required means new users could more easily get into modeling metadata.

A simplified integration in DevOps, CI/CD processes, of the new tool could help more users to adopt these methodologies.

JSON is more and more adopted, having the ability to more easily generate a model (or parts of it) could help in automating the modeling process.

- After any deployment of changes in the database a JSON representing the changes (or the whole database structure) could be generated to skip the import and definition of physical schemas, tables and columns.