



# Data Source Management in AiM IQ

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# Topics Covered

**AiM IQ Overview**

**Data Source Creation**

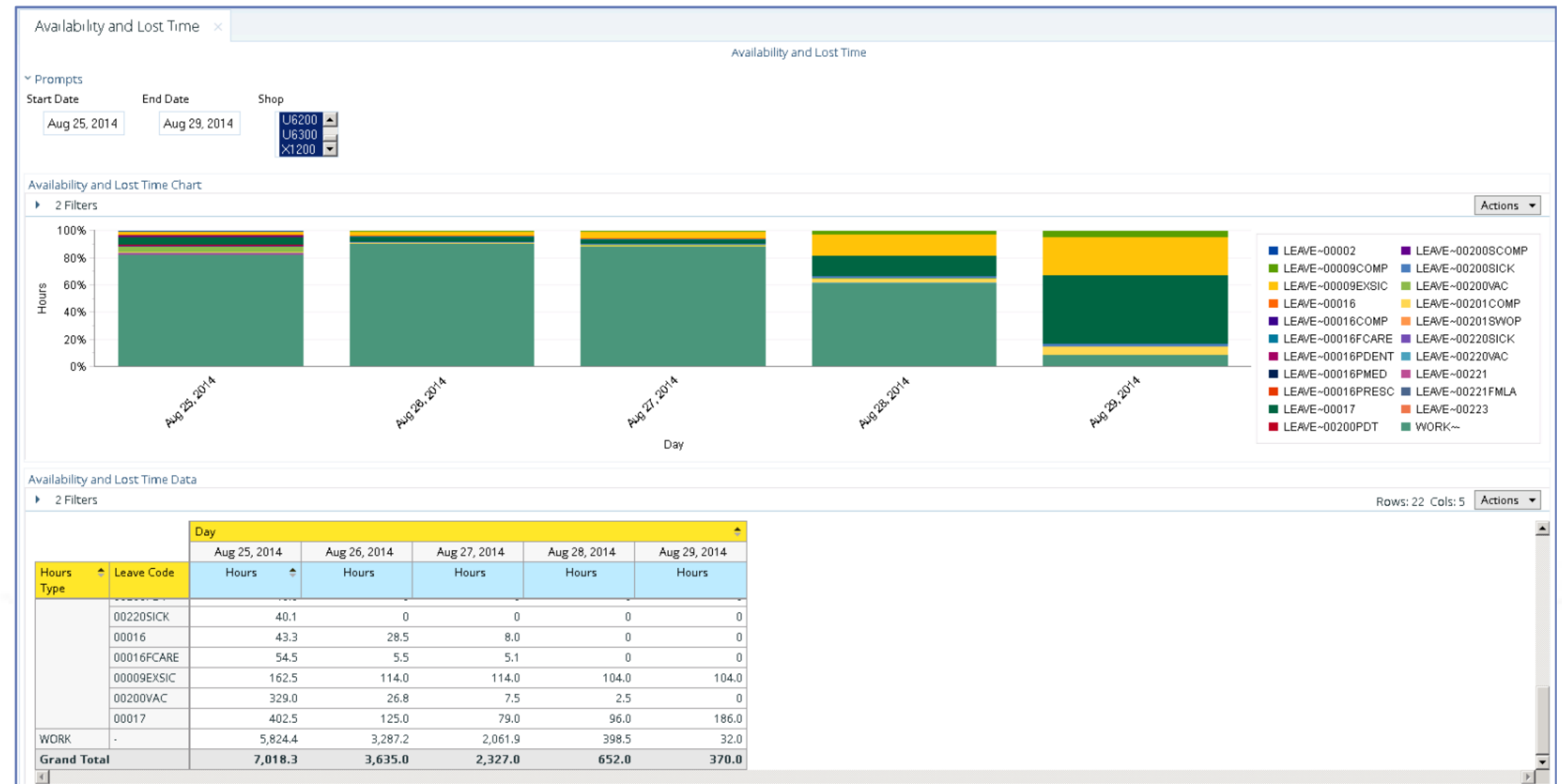
**How They Can Be Used**

**Data Source Modification**



# IQ Overview

- Intelligence Reporting Tool
  - Interactive
  - Analytical
  - Dashboards
- AiM → IQ
  - Data cubes (sources)
  - Report views
- Analyze and track trends



# IQ Overview



Real Estate  
and Property  
Management



Space  
Management



Operations and  
Maintenance



Capital Planning  
and Project  
Management

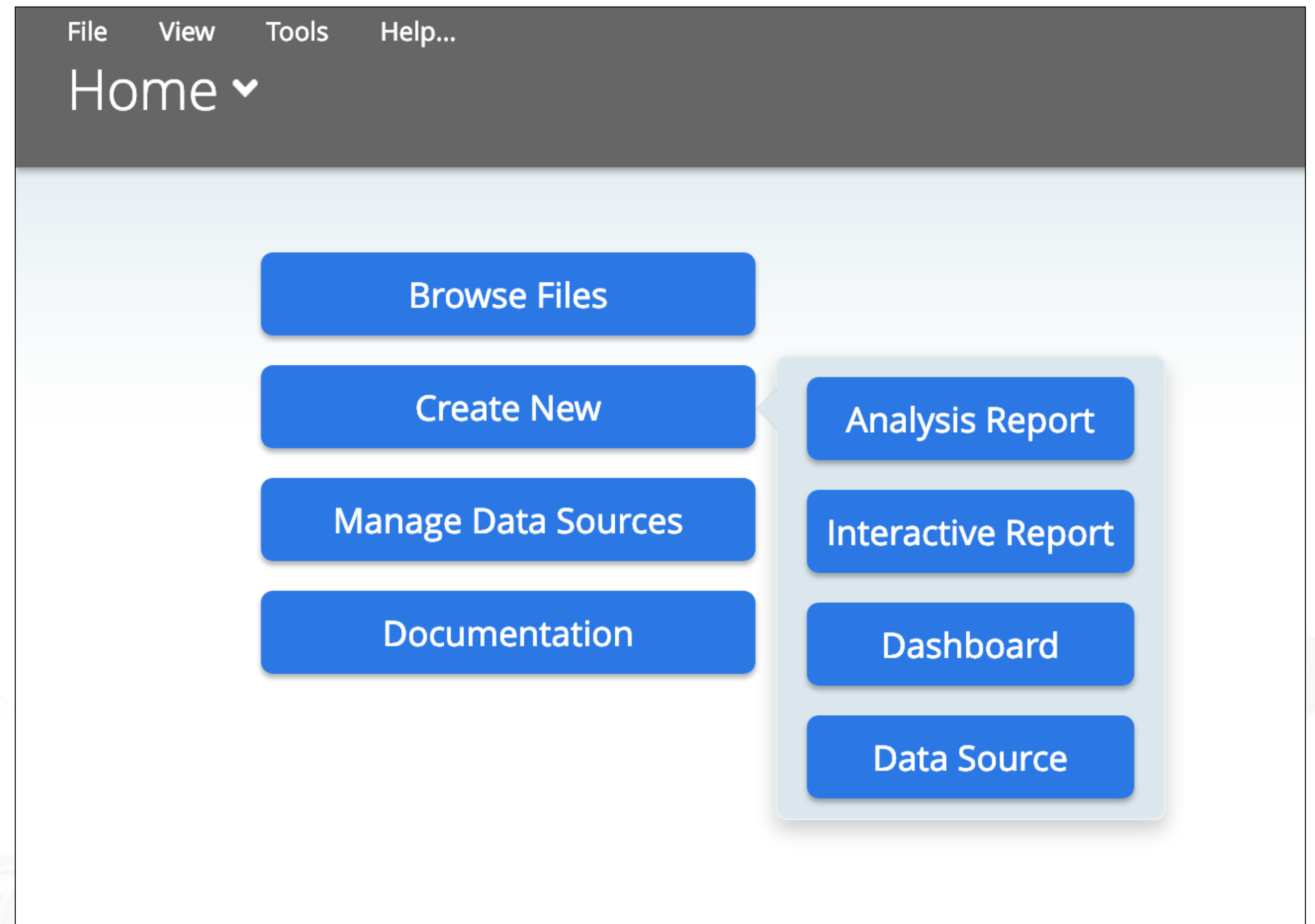


Energy  
Management



# Creating a Data Source

- IQ User Console
  - Create New → Data Source
  - Manage Data Sources → Create New
- Data Options
  - SQL Query
  - Table Listing
  - Spreadsheet



# Creating a Data Source: SQL Query

Data Source Wizard

> Select Source Type

Data Source Name:

Source Type:

SQL Query

Connection:

Audit

SampleData

aim

aimiq

aimstaging

pentaho\_operations\_mart

SQL Query:

SELECT \* FROM AE\_P\_PHS\_E

Limit: 10 Data Preview

< Back

Next >

Finish

Cancel

# Creating a Data Source: SQL Query

```
Select * from ae_p_pro_e as e  
Inner join ae_p_phs_e as p  
on p.proposal = e.proposal
```

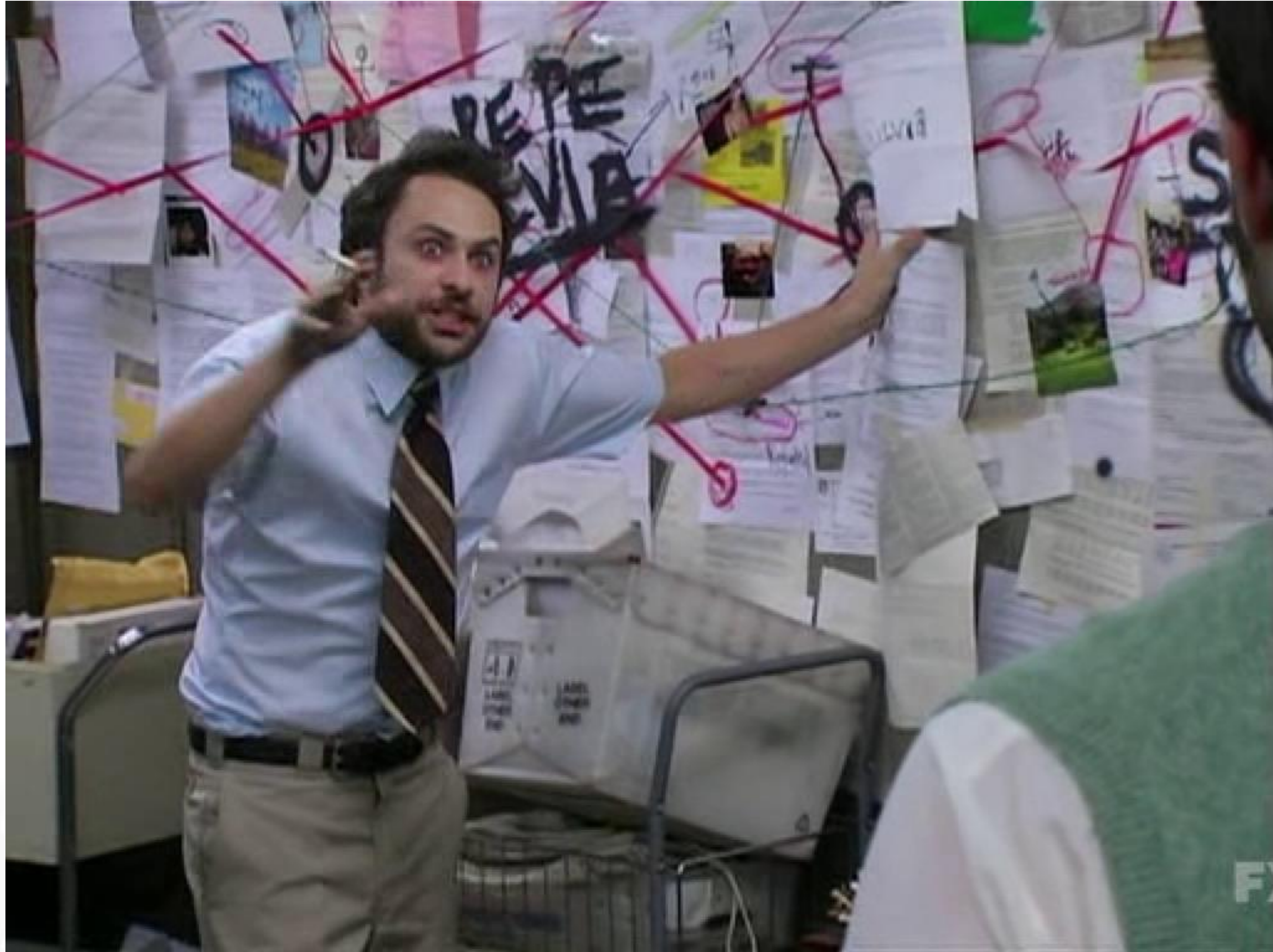
```
Select e.proposal,  
e.description,  
p.sort_code,  
p.description  
from ae_p_pro_e as e  
inner join ae_p_phs_e as p  
on p.proposal = e.proposal
```

**DatasourceServiceImpl.ERROR\_0009**

Query validation failed: Query validation failed: {0}

Close







# New Data Source

Preview Results

multitenant_id	proposal	sort_code	description	esti
1	16-005001	001	GOVERNMENTAL	
1	16-005002	001	AHU MONTHLY II	
1	16-005003	001	AHU MONTHLY II	
1	16-005004	001	AHU MONTHLY II	
1	16-005005	001	AHU MONTHLY II	
1	16-005006	001	AHU MONTHLY II	
1	16-005007	001	AHU MONTHLY II	
1	16-005008	001	AHU MONTHLY II	

Close



**New data  
source created.**



- ⚙ Results may look correct
- ⚙ Always customize to use as an analyzer data source.

Manage Data Sources

### Data Source Created

The data source was created successfully.

Note

To enable reporting and analysis, a default metadata model was automatically created for this data source. You can edit the data source at any time by going to File > Manage > Data Sources.

☒ Keep default model

☐ Customize model now

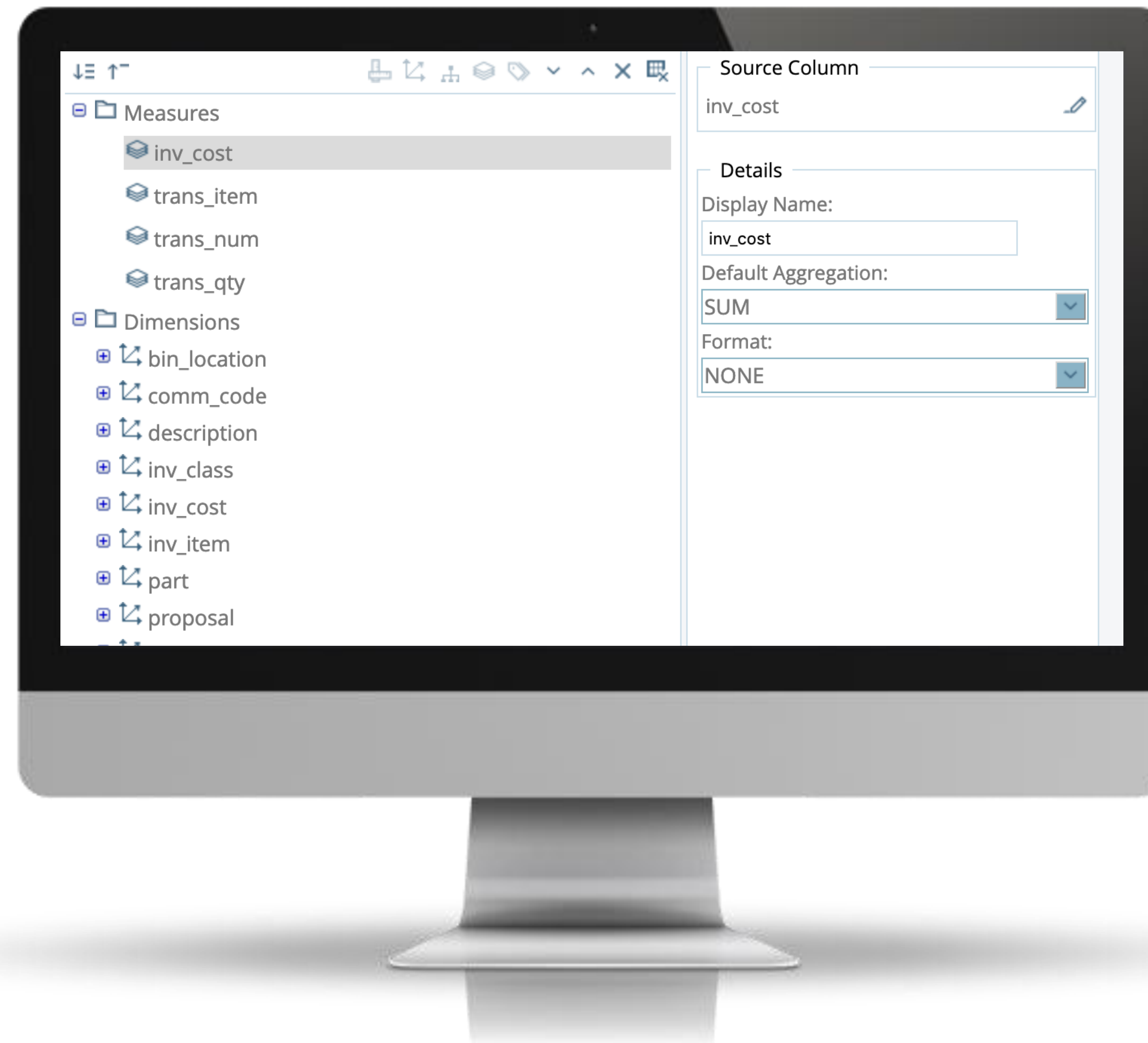
OK

# New Data Source

Default set of  
reporting dimensions,  
measures and  
categories



Dimensions and  
Measures for Analysis.  
Categories for  
Interactive.



Drag and Drop



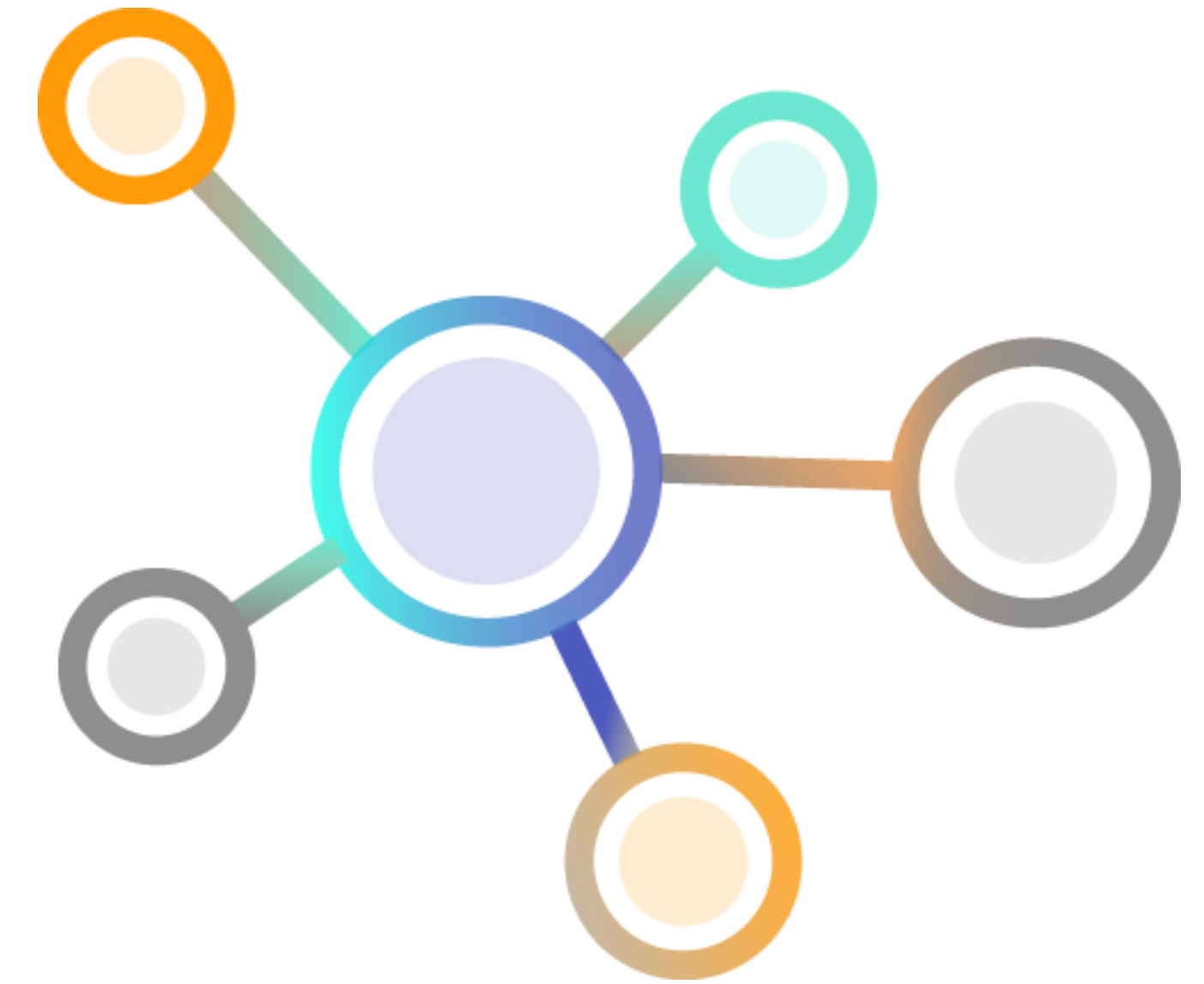
Create your own

# New Process for a New Data Source

- Draw out what you are looking for
- Design Select SQL in SQL Editor
- Create table(s) using SQL Editor in Data Warehouse
- Create AiM IQ Data Integration Transformation to populate new table
- Schedule DI Transformation to update on a nightly basis
- Create new Agile Data Source – using Table option
- Design Model



# Conceptualize Your Data Model



- Part Listing
  - Part Table
  - Bin Table
- Purchase Request Details
  - Part Table
  - Bin Table
  - Purchase Request Header
  - Purchase Request Lines
  - Property tables
- Counter Release Details
  - Part Table
  - Bin Table
  - Counter Release Header
  - Counter Release Lines

## Why not one giant table?

1. No consistent direct correlation between Purchase Request... and Counter Release
2. Massive data sources are not user friendly to end user

# Create Your Reporting Table

MANAGEMENT

- Server Status
- Client Connections
- Users and Privileges
- Status and System Variables
- Data Export
- Data Import/Restore

INSTANCE

- Startup / Shutdown
- Server Logs
- Options File

PERFORMANCE

- Dashboard
- Performance Reports
- Performance Schema Setup

SCHEMAS

Filter objects

aim90

- Tables
- Views
- Stored Procedures
- Functions

iq9\_dw

iq9\_staging

se\_data

test

1234567891011121314151617181920212223242526272829303132333435363738394041424344454647484950

```
create table iq9_dw.caltech_inventory_part as

select
    /*Part Details*/
    pv.multitenant_id,
    pv.pa_part part_number,
    pv.pa_part_desc description,
    pv.pa_class part_class,
    pv.pa_class_desc part_class_desc,
    pv.pa_commodity_code part_commodity,
    pv.pa_commodity_code_desc part_commodity_desc,
    pv.pa_item part_item_type,
    pv.pa_item_desc part_item_type_desc,
    pv.pa_cycle_code part_cycle_code,
    pv.pa_manufacturer_code part_mfr,
    pv.pa_manufacturer_code_desc part_mfr_desc,
    pv.pa_model part_model,
    pv.pa_active part_active_yn,
    pv.pa_uom part_uom,
    pv.pa_uom_fractional part_fractional_uom,
    /* Part Edit Date*/
    date_format((pv.pa_edit_date), '%Y/%m/%d') part_edit_date_full_date,
    date_format((pv.pa_edit_date), '%Y') part_edit_date_Year,
    date_format((pv.pa_edit_date), '%m') part_edit_date_Month,
    date_format((pv.pa_edit_date), '%d') part_edit_date_Day,
    /* Part Cost and Qty*/
    ifnull(pv.pa_onhand_value,0.00) part_onhand_value,
    ifnull(pv.pa_onhand_quantity,0.00) part_onhand_qty,
    ifnull(pv.pa_average_cost,0.00) part_avg_cost,
    /* Part bin details*/
    pal.pal_warehouse part_warehouse,
    pal.pal_warehouse_desc part_warehouse_desc,
    pal.pal_bin_location part_bin,
    pal.pal_bin_location_desc part_bin_desc,
    ifnull(pal.pal_part_quantity,0.00) part_bin_qty,
    ifnull(pb.inv_minlev,0.00) part_bin_min_level,
    ifnull(pb.inv_maxlev,0.00) part_bin_max_level,
    ifnull(pb.reorder_level,0.00) part_bin_reorder_level,
    ifnull(pb.reorder_qty,0.00) part_bin_reorder_qty

from part pv
join part_location pal on pv.pa_part = pal.pal_part
join ae_i_loc_e pb on pal.pal_part = pb.part and pal.pal_bin_location = pb.bin_location

order by 2;
```

100%

46:1

Action Output

	Time	Action	Response	Duration / Fetch Time
57	14:22:05	select * from iq9_dw.caltech_inventory_part.counterrelease LIMIT 0, 10000	0 row(s) returned	0.00069 sec / 0.000...
58	14:24:01	select * from iq9_dw.caltech_inventory_part LIMIT 0, 10000	116 row(s) returned	0.00048 sec / 0.000...
59	14:24:04	select * from iq9_dw.caltech_inventory_part.pickticket LIMIT 0, 10000	285 row(s) returned	0.00056 sec / 0.002...
60	14:24:06	select * from iq9_dw.caltech_inventory_part.shoppingcart LIMIT 0, 10000	67 row(s) returned	0.00038 sec / 0.000...
61	14:24:08	select * from iq9_dw.caltech_inventory_part.counterrelease LIMIT 0, 10000	304 row(s) returned	0.00040 sec / 0.0016...

Query Completed





# Build Your Transformation

Spoon - [enterprise] 2 - Load Inventory Reporting Data v1.0

File Edit View Action Tools Help

Perspective: Data Integration

Steps table

- Input
  - Get table names
  - Table input
- Output
  - Delete
  - Microsoft Access Output
  - Table output
  - Update
- Transform
  - Closure Generator
- Utility
  - Table Compare
- Flow
  - Scripting
  - BA Server
- Lookup
  - Check if a column exists
  - Table exists
- Joins
- Data Warehouse
- Validation
- Statistics
- Data Mining
- Big Data
  - Cassandra Input
  - Cassandra Output
  - HBase Input
  - HBase Output
  - SSTable Output
- Agile
  - Table Agile Mart
- Cryptography
- Palo

Execution Results

#	Stepname	Copynr	Read	Written	Input	Output	Updated
1	Get Part Data	0	0	116	116	0	0
2	Store Part Reporting Data Mapping	0	116	116	0	0	0
3	Store Part Reporting Data	0	116	116	0	116	0
4	Get PickTicket Data	0	0	285	285	0	0
5	Store PickTicket Reporting Data Mapping	0	285	285	0	0	0
6	Store PickTicket Reporting Data	0	285	285	0	285	0
7	Get ShoppingCart Data	0	0	67	67	0	0
8	Store ShoppingCart Reporting Data Mapping	0	67	67	0	0	0
9	Store ShoppingCart Reporting Data	0	67	67	0	67	0
10	Get CounterRelease Data	0	0	304	304	0	0
11	Store CounterRelease Reporting Data Mapping	0	304	304	0	0	0
12	Store CounterRelease Reporting Data	0	304	304	0	304	0

Table input

Step name: Get Part Data

Connection: aim

SQL

```
select
/*Part Details*/
pv.multitenant_id,
pv.pa_part part_number,
pv.pa_part_desc description,
pv.pa_class part_class,
pv.pa_class_desc part_class_desc,
pv.pa_commodity_code part_commodity,
pv.pa_commodity_code_desc part_commodity_desc,
pv.pa_item part_item_type,
pv.pa_item_desc part_item_type_desc,
pv.pa_cycle_code part_cycle_code,
pv.pa_manufacturer_code part_mfr,
pv.pa_manufacturer_code_desc part_mfr_desc,
pv.pa_model part_model,
pv.pa_active part_active_yn,
pv.pa_uom part_uom,
pv.pa_uom_fractional part_fractional_uom,
/* Part Edit Date*/
date_format((pv.pa_edit_date), '%Y/%m/%d') part_edit_date_full_date,
date_format((pv.pa_edit_date), '%Y') part_edit_date_Year,
date_format((pv.pa_edit_date), '%m') part_edit_date_Month,
date_format((pv.pa_edit_date), '%d') part_edit_date_Day,
/* Part Cost and Qty*/
ifnull(pv.pa_onhand_value,0.00) part_onhand_value,
ifnull(pv.pa_onhand_quantity,0.00) part_onhand_qty,
ifnull(pv.pa_average_cost,0.00) part_avg_cost,
/* Part bin details*/
pal.pal_warehouse part_warehouse,
pal.pal_warehouse_desc part_warehouse_desc,
pal.pal_bin_location part_bin,
pal.pal_bin_location_desc part_bin_desc,
ifnull(pal.pal_part_quantity,0.00) part_bin_qty,
ifnull(pb.inv_minlev,0.00) part_bin_min_level,
ifnull(pb.inv_maxlev,0.00) part_bin_max_level,
ifnull(pb.reorder_level,0.00) part_bin_reorder_level,
ifnull(pb.reorder_qty,0.00) part_bin_reorder_qty
from part pv
```

Line 1 Column 0

Enable lazy conversion ☐

Replace variables in script? ☐

Insert data from step

Execute for each row? ☐

Limit size 0

Help OK Preview Cancel



# Schedule Transformation

The screenshot displays the Spoon - [enterprise] 2 - Load Inventory Reporting Data v1.0 interface. The 'Action' menu is open, showing options like Run, Run Options..., Preview, Debug, Replay, Verify, Impact, Get SQL, Show Last, and Schedule. The 'Schedule' dialog box is open, showing the following settings:

**Start:** Now (selected), Date: 02/08/19, Time: 12:05 AM.

**End:** No end (selected), Date: 03/04/19, Time: 11:59 PM.

**Repeat:** Daily, Every 1 day(s).

**Details:** Enable safe mode (unchecked), Log level: Basic.

**Parameters:**

#	Parameter	Value	Default Value
1	1		

**Variables:**

#	Variable	Value
1	DWH_ODS_PASSWO...	
2	DWH_ODS_DATABA...	
3	DWH_ODS_HOSTNA...	
4	DWH_LOG_PORT	
5	DWH_LOG_USERNA...	
6	DWH_STG_HOSTNA...	
7	DWH_DWH_HOSTN...	
8	Internal.Job.Filenam...	Parent Job File Directory
9	DWH_STG_PORT	
10	DWH_LOG_DATABA...	
11	DWH_LOG_PASSWO...	
12	DWH_DWH_PORT	
13	STEALTH02_PORT	
14	DWH_DWH_PASSW...	
15	DWH_DWH_DATAB...	
16	DWH_STG_USERNA...	
17	STEALTHXX_USERN...	
18	Internal.Job.Filenam...	Parent Job Filename
19	Internal.Entry.Curren...	/home/admin
20	DWH_ODS_USERNA...	
21	Internal.Job.Reposit...	Parent Job Repository Directory
22	STEALTHXX_HOSTN...	

**Arguments:**

#	Argument	Value
1	1	

**Execution Results:**

#	Stepname
1	Get Part Data
2	Store Part Reportin
3	Store Part Reportin

# Create Data Source

> Select Source Type

Select Tables

Define Joins

Data Source Name:

CaltechTest Counter Release

Source Type:

Database Table(s)

Select a database connection and click Next to choose from a list of the available database tables.

Connection:

Audit

SampleData

aim

aimiq

aimstaging

pentaho\_operations\_mart

Create data source for:

☐ Reporting only

☒ Reporting and Analysis (Requires Star Schema)

< Back

Next >

Finish

Cancel

> Select Source Type

> Select Tables

Define Joins

Select one table to finish or select multiple tables and click Next to define their joins.

Schema:

testiq

Available Tables:

`testiq`.`caltech\_inventory\_part\_pickticket`

`testiq`.`caltech\_inventory\_part\_shoppingcart`

`testiq`.`caltech\_inventory\_part`

`testiq`.`caltech\_timcard\_v2`

`testiq`.`caltech\_timecard`

`testiq`.`caltech\_timesheet`

`testiq`.`cit\_timesheet`

`testiq`.`iq\_aim\_phase\_cost\_b`

`testiq`.`iq\_aim\_phase\_cost\_c`

`testiq`.`iq\_aim\_phase\_cost\_d`

`testiq`.`iq\_aim\_phase\_cost\_e`

`testiq`.`iq\_aim\_phase\_cost\_f`

`testiq`.`iq\_aim\_phase\_cost\_g`

`testiq`.`iq\_config\_table`

`testiq`.`iq\_control\_load\_date`

`testiq`.`iq\_control\_report\_param`

`testiq`.`iq\_control\_table\_multitenant`

`testiq`.`iq\_control\_table`

`testiq`.`iq\_dash\_etl\_bldg\_zone\_type`

`testiq`.`iq\_dash\_etl\_reporting\_chen`

Selected Tables:

`testiq`.`caltech\_inventory\_part\_counterrelease`

Fact Table:

`testiq`.`caltech\_inventory\_part\_counterrelease`

< Back

Next >

Finish

Cancel

# Modification

Data Source Model Editor

Available

bin\_location

comm\_code

description

inv\_class

inv\_cost

inv\_item

part

proposal

release\_date

release\_day

release\_month

release\_year

sort\_code

trans\_item

.

Analysis

Reporting

Measures

inv\_cost

trans\_item

trans\_num

trans\_qty

Dimensions

bin\_location

comm\_code

description

inv\_class

inv\_cost

inv\_item

part

proposal

sort\_code

trans\_item

Properties

Source Column

trans\_num

Details

Display Name:

trans\_num

Default Aggregation:

SUM

Format:

NONE

OK

Cancel



# Data Source Uses

Available fields (16) for: Inventory Transactions

Find:  View ▼

**Measures**

- inv\_cost
- trans\_item
- trans\_num
- trans\_qty
- bin\_location
- bin\_location
- comm\_code
- comm\_code
- description
- description
- inv\_class
- inv\_class
- inv\_cost
- inv\_cost
- inv\_item
- inv\_item
- part
- part
- proposal
- proposal

**Layout**

Rows

- part
- proposal

Drop Level Here

Columns

Drop Level Here

Measures

- inv\_cost
- trans\_qty

Drop Measure Here

**Properties**

Report Options...

**No Filters**

part	proposal	inv_cost	trans_qty
87OCTANE	TRNSGRD170246...	2	1
ASDF1234	18-002726	50	5
CAN LINER	18-002678		1
	2017-001401		3
	2017-001407		3
	2017-001435		6
CORD	18-002677	227	
	2017-001400	226	
	TRNSGRD170246...	113	2
FILTER	150917-001326	13	
HAMMER	150518-001048	8	2
	150701-001127	7	1
	2017-001435	1	1
NAILS	150518-001048	16	1
OIL	150515-001036	10	1
	150515-001042	30	3
OIL FILTER	150515-001036	4	1
	150515-001042	12	3
SCREWDRIV...	150508-001015	5	3
	150518-001048	5	2
	150518-001050	5	1

**i Both Interactive and Analytical**

**i Use them just like existing sources**

**i Share them between instances. Export and Import**



Thank You!

