



Power BI Optimization

DataSyn GmbH



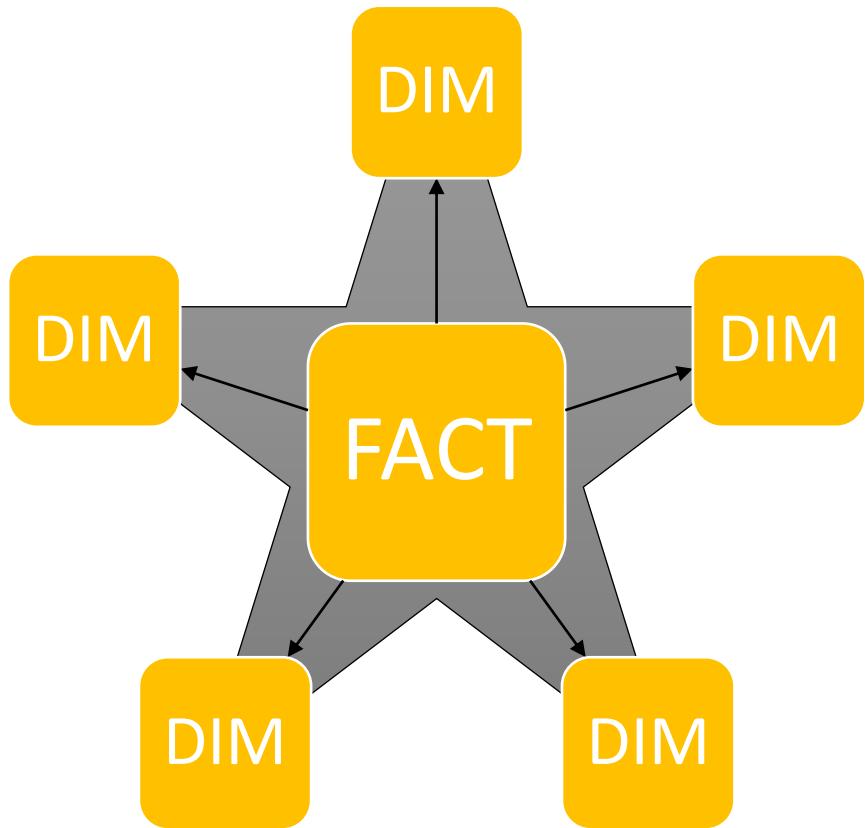


Data Model

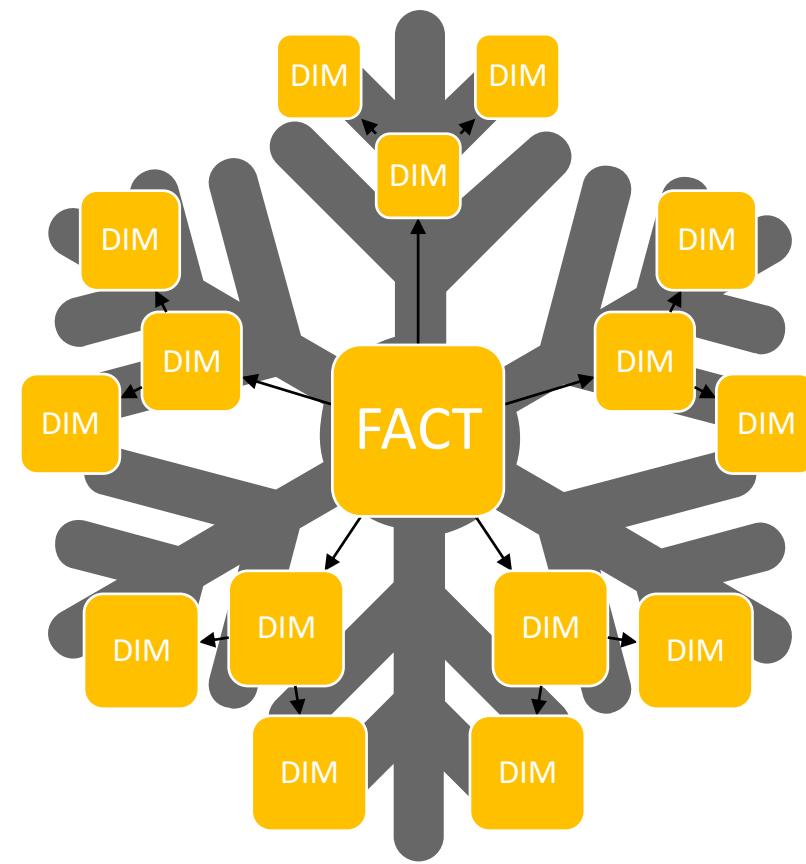
- Star Schema!
- Split large tables (normalize)
- Bidirectional filtering and avoidance of m:n relationships
- Keep it simple!

Data Model: Star Schema vs Snowflake Schema

Star Schema



vs Snowflake Schema





Power Query

- Use the right data source
 - Data Warehousing
 - Direct Query?
 - SQL native Query
- Clean data
- Compress steps
- PBI can easily handle millions of rows, but the transformations cost performance!
- Creating aggregated tables will increase performance
- = Table.Buffer(TableName): saves a table in memory and can accelerate the query
- Disable „Enable load“ to prevent unwanted tables to be loaded into the data model and consume memory

Power Query: SQL native query

Classic M Query

```
let  
    Source = Sql.Databases("Demo"),  
    ContosoRetailDW = Source{[Name="ContosoRetailDW"]}[Data],  
    DataModeling_Customer =  
    ContosoRetailDW{[Schema="DataModeling",Item="Customer"]}[Data]  
in  
    DataModeling_Customer
```



Native Query

```
let  
    Source = Sql.Database("ContosoRetailDW.database.windows.net,  
    "Demo", [Query = „SELECT * FROM DataModel.Customer WHERE City  
    IS Tokyo“])
```

Power Query: query compression

The image shows two 'ANGEWENDETE SCHRITTE' (Applied Steps) panes from Power Query, illustrating the concept of query compression. The left pane shows a full history of steps, while the right pane shows a compressed version where identical steps are grouped together.

Left Pane (Full History):

- Source
- Filtered Hidden Files1
- Invoke Custom Function1
- Renamed Columns1
- Removed Other Columns1
- Expanded Table Column1
- Changed Type
- Removed Duplicates
- Removed Blank Rows
- Split Column by Delimiter
- Removed Columns**
- Split Column by Delimiter1
- Removed Columns1**
- Replaced Value16
- Custom1
- Replaced Value**
- Replaced Value4**
- Replaced Value8**
- Replaced Value15**
- Renamed Columns
- Duplicated Column
- Calculated Text Length
- FIL Lenght
- Removed Columns2
- Logarithmus zur Basis 10 eing...**

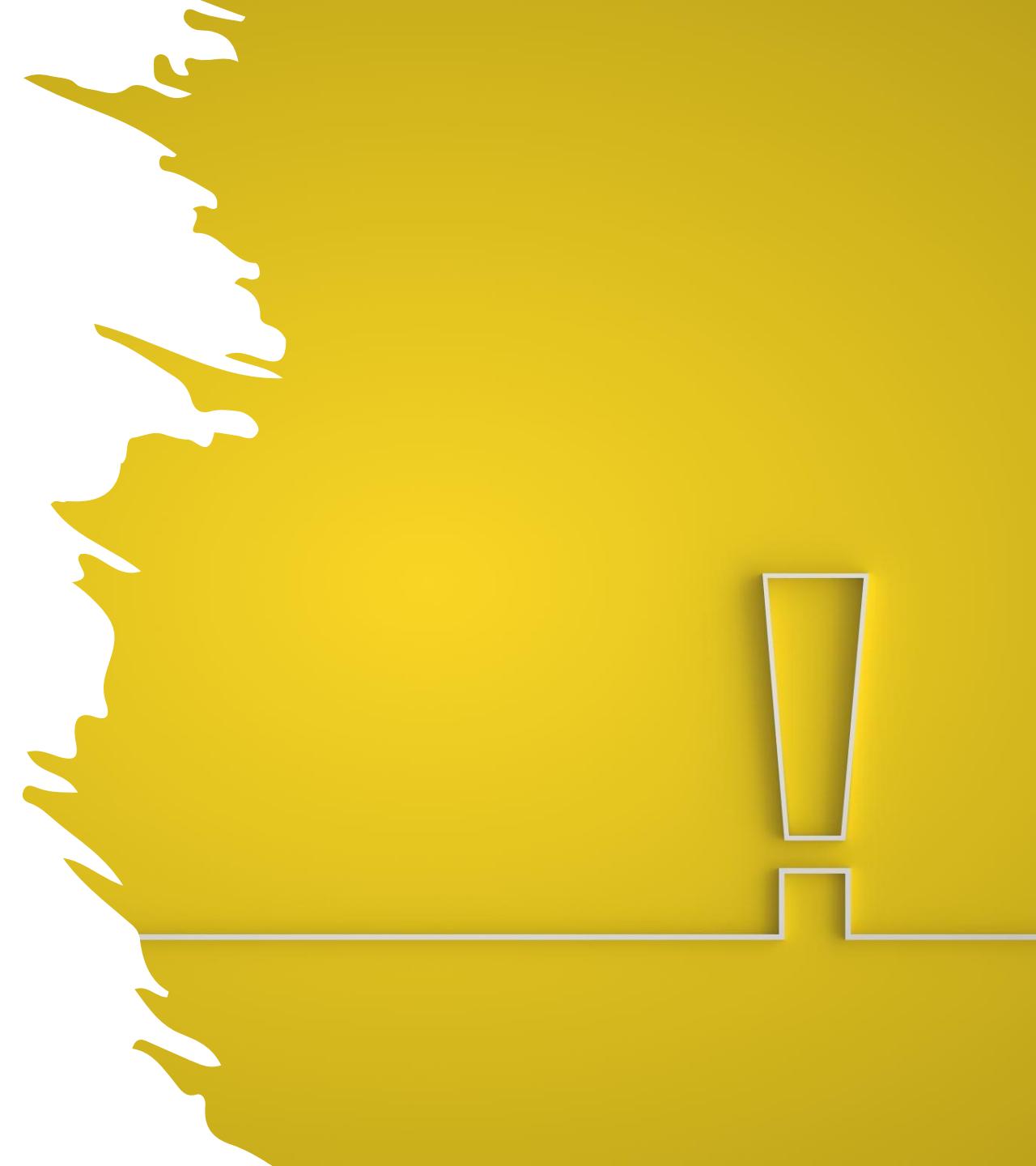
Right Pane (Compressed History):

- Source
- Filtered Hidden Files1
- Invoke Custom Function1
- Renamed Columns1
- Removed Other Columns1
- Expanded Table Column1
- Changed Type
- Removed Duplicates
- Removed Blank Rows
- Split Column by Delimiter
- Removed Columns**
- Split Column by Delimiter1
- Removed Columns1**
- Custom1
- Replaced Value**
- Duplicated Column**
- Calculated Text Length
- FIL Lenght
- Logarithmus zur Basis 10 eing...

Yellow boxes highlight the steps that are being compressed: 'Removed Columns', 'Removed Columns1', and the four 'Replaced Value' steps. Arrows point from the right side of the first three highlighted steps in the left pane to the corresponding grouped step in the right pane.

DAX

- Avoid complex measures & aggregations
- Large model with simple DAX code better than smaller model with complex DAX code!



Report

- Keep pages small
- Use few meaningful visuals
- Limit the number of slicers
- Avoid unnecessary interactions between visuals
- No redundancies

