

Tableau Experience

Indonesia

13 March 2019

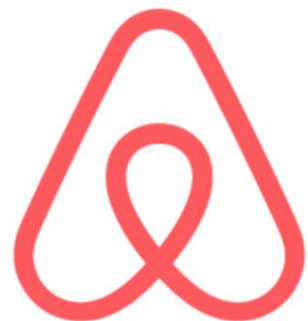
Demystifying Modern Analytics

Suhendra Tandra

Senior Manager, Customer Consulting, APAC

Tableau





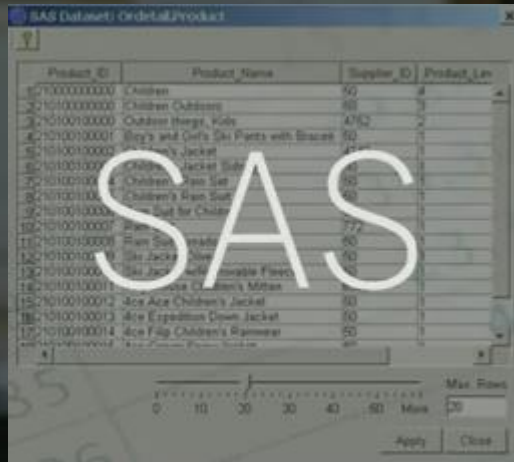
What is Modern really...



the tableau story



Why we started...



SAS

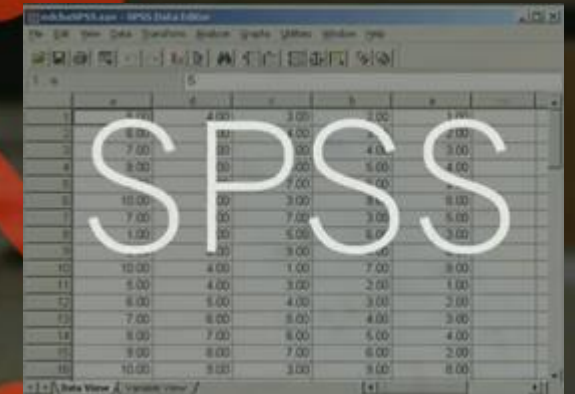
Product ID	Product Name	Supplier ID	Product Len
10100000000	Children	50	4
21010000000	Children Outdoors	50	4
31010000000	Children Hugs, Kubs	4762	4
41010000001	Boys and Girls Ski Pants with Suspenders	50	4
51010000000	Children's Jacket	50	4
61010000000	Children's Jacket Set	50	4
71010000000	Children's Snow Suit	50	4
81010000000	Children's Snow Suit	50	4
91010000000	Children's Snow Suit for Children	50	4
10100000000	Children's Snow Suit	50	4
11100000000	Children's Snow Suit	50	4
12100000000	Children's Snow Suit	50	4
13100000000	Children's Snow Suit	50	4
14100000000	Children's Snow Suit	50	4
15100000000	Children's Snow Suit	50	4
16100000000	Children's Snow Suit	50	4
17100000000	Children's Snow Suit	50	4
18100000000	Children's Snow Suit	50	4
19100000000	Children's Snow Suit	50	4
20100000000	Children's Snow Suit	50	4

Data formats

Data integration

Data analysis UI

Data visualization



SPSS

1	2	3	4	5	6
1	1.000	4.000	3.000	5.000	2.000
2	2.000	3.000	4.000	2.000	3.000
3	3.000	4.000	5.000	3.000	4.000
4	4.000	5.000	2.000	4.000	5.000
5	5.000	2.000	3.000	5.000	2.000
6	2.000	3.000	4.000	2.000	3.000
7	3.000	4.000	5.000	3.000	4.000
8	4.000	5.000	2.000	4.000	5.000
9	5.000	2.000	3.000	5.000	2.000
10	2.000	3.000	4.000	2.000	3.000
11	3.000	4.000	5.000	3.000	4.000
12	4.000	5.000	2.000	4.000	5.000
13	5.000	2.000	3.000	5.000	2.000
14	2.000	3.000	4.000	2.000	3.000
15	3.000	4.000	5.000	3.000	4.000
16	4.000	5.000	2.000	4.000	5.000
17	5.000	2.000	3.000	5.000	2.000
18	2.000	3.000	4.000	2.000	3.000
19	3.000	4.000	5.000	3.000	4.000
20	4.000	5.000	2.000	4.000	5.000



Stata

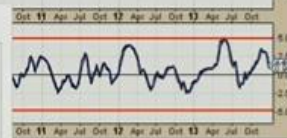
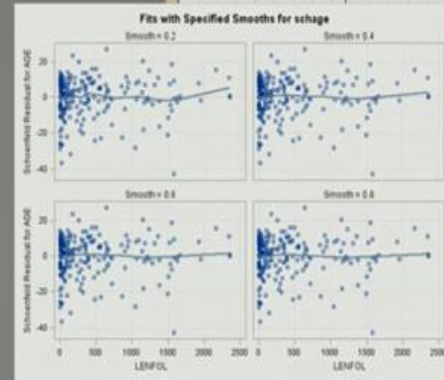
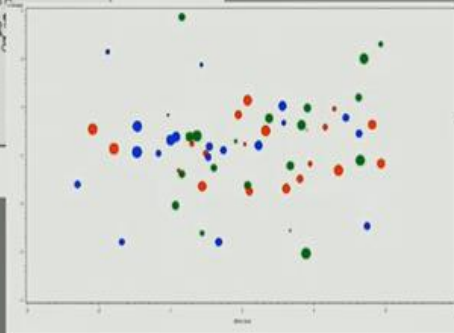
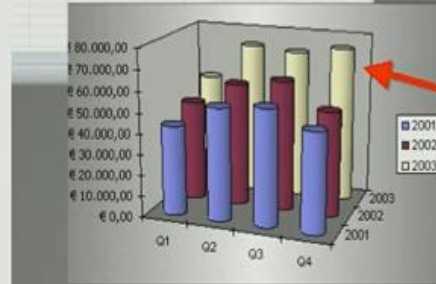
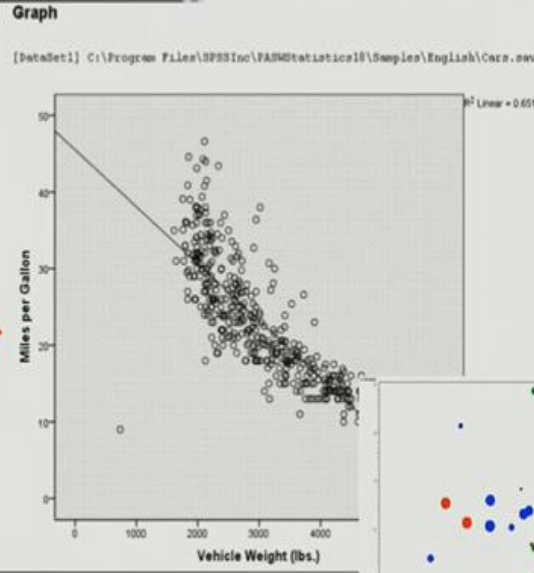
1	2	3	4	5	6
1	1.000	4.000	3.000	5.000	2.000
2	2.000	3.000	4.000	2.000	3.000
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4	4.000	5.000	2.000	4.000	5.000
5	5.000	2.000	3.000	5.000	2.000
6	2.000	3.000	4.000	2.000	3.000
7	3.000	4.000	5.000	3.000	4.000
8	4.000	5.000	2.000	4.000	5.000
9	5.000	2.000	3.000	5.000	2.000
10	2.000	3.000	4.000	2.000	3.000
11	3.000	4.000	5.000	3.000	4.000
12	4.000	5.000	2.000	4.000	5.000
13	5.000	2.000	3.000	5.000	2.000
14	2.000	3.000	4.000	2.000	3.000
15	3.000	4.000	5.000	3.000	4.000
16	4.000	5.000	2.000	4.000	5.000
17	5.000	2.000	3.000	5.000	2.000
18	2.000	3.000	4.000	2.000	3.000
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20	4.000	5.000	2.000	4.000	5.000



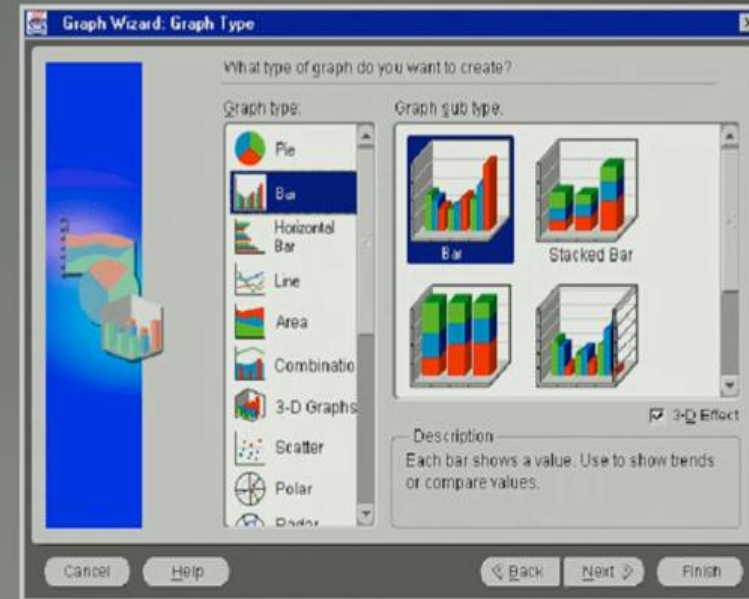
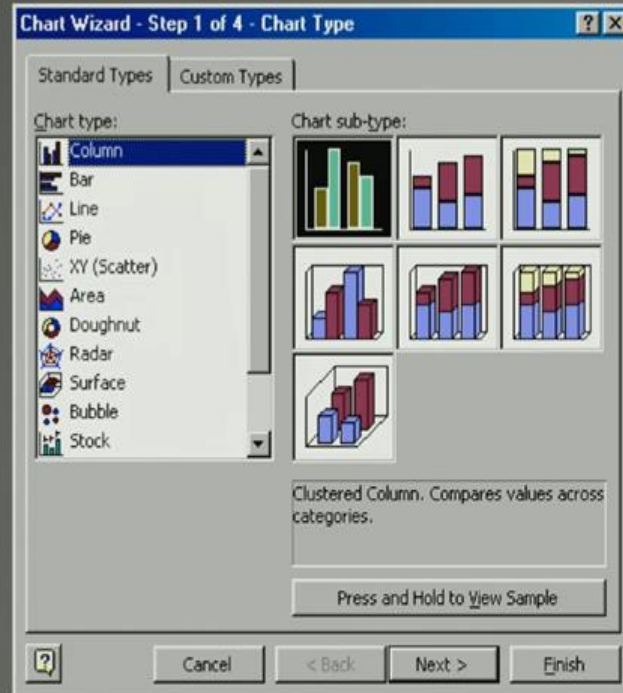
SQL

1	2	3	4	5	6
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2	2.000	3.000	4.000	2.000	3.000
3	3.000	4.000	5.000	3.000	4.000
4	4.000	5.000	2.000	4.000	5.000
5	5.000	2.000	3.000	5.000	2.000
6	2.000	3.000	4.000	2.000	3.000
7	3.000	4.000	5.000	3.000	4.000
8	4.000	5.000	2.000	4.000	5.000
9	5.000	2.000	3.000	5.000	2.000
10	2.000	3.000	4.000	2.000	3.000
11	3.000	4.000	5.000	3.000	4.000
12	4.000	5.000	2.000	4.000	5.000
13	5.000	2.000	3.000	5.000	2.000
14	2.000	3.000	4.000	2.000	3.000
15	3.000	4.000	5.000	3.000	4.000
16	4.000	5.000	2.000	4.000	5.000
17	5.000	2.000	3.000	5.000	2.000
18	2.000	3.000	4.000	2.000	3.000
19	3.000	4.000	5.000	3.000	4.000
20	4.000	5.000	2.000	4.000	5.000

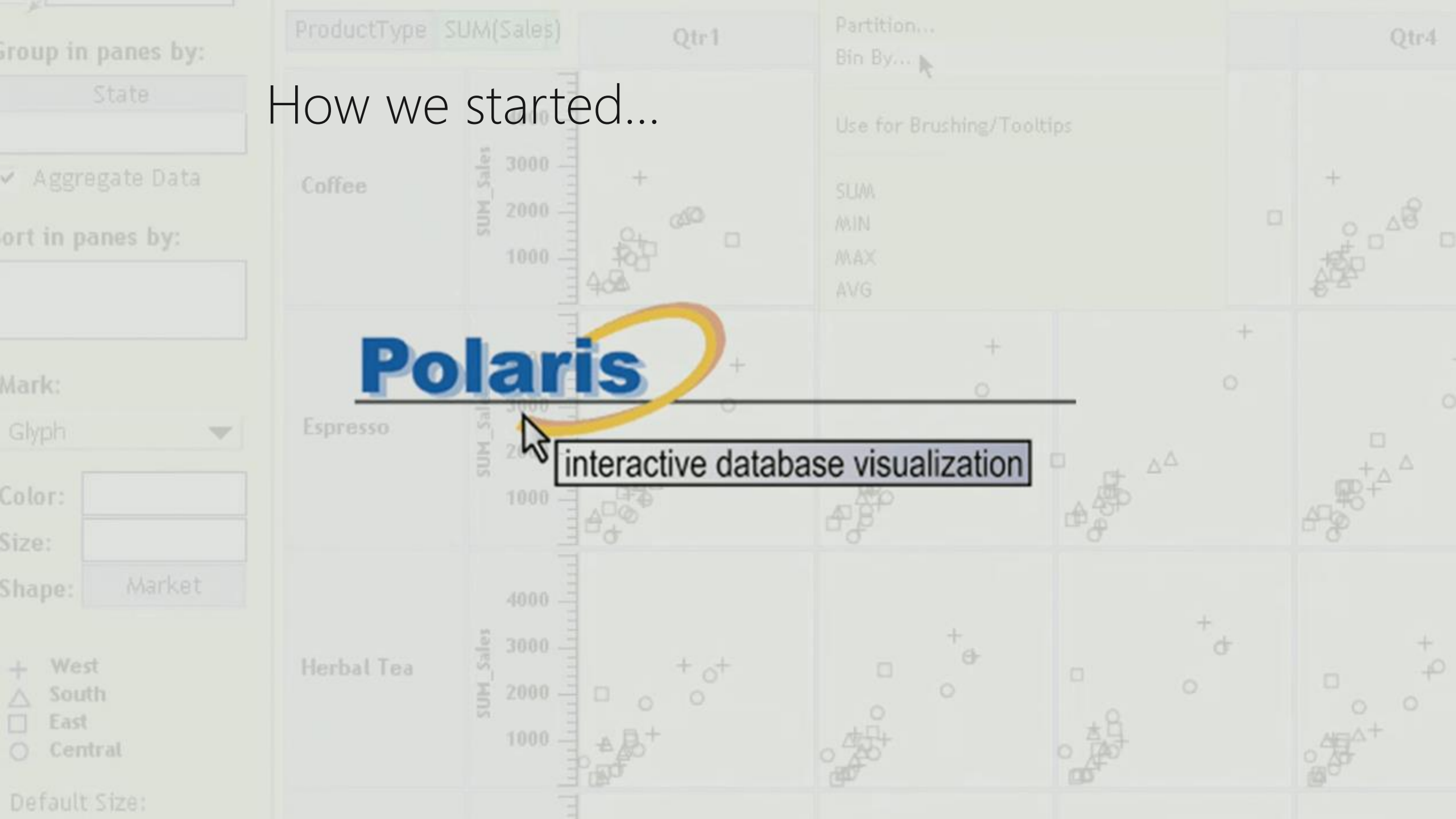
Charts and Graphs were nothing new...



Charts and Graphs were nothing new...



How we started...



How we started...

Data Cube Schema:
The user drags dimension levels or measures from the schema to shelves to define the visual specification.

Dimension Hierarchy:
A tree view on the left showing the hierarchy of dimensions: Time (Year, Quarter, Month), Products (Producttype, Product), and Location (Market, State).

Level of Detail Shelf:
The dimension levels placed here determine (along with the axis shelves) the level of detail in each pane.

Mark Pulldown:
Relations in each pane are mapped to marks of the selected type.

Retinal Property Shelves:
The fields placed here determine how data is encoded in the retinal properties of the marks.

Legends:
Legends enable the user to see and modify the mappings from data to retinal properties.

Drill Down/Roll Up:
Pulldown menus on each dimension level provide the ability to quickly drill down or roll up the data.

Axis Shelves:
The fields placed here determine the structure of the table and the types of graphs in each table pane.

Context Menu:
The context menu provides access to the data transformation and interaction capabilities of Polaris as well as dimension level qualification.

The screenshot shows the Polaris v3.0 interface with a 4x4 grid of scatter plots. The rows represent product types (Coffee, Espresso, Herbal Tea, Tea) and the columns represent quarters (Qtr1, Qtr2, Qtr3, Qtr4). The y-axis is Sales (0 to 8K) and the x-axis is Profit (0 to 2000). A context menu is open over the top-right plot, showing options like Filter..., Qualification..., Ad hoc Grouping..., Sort by..., and Threshold... The interface includes a menu bar (Schema, Import, Back, Forward, Filter, Send, Clear) and a toolbar with icons for these actions.

Our approach...

Visualization Language





property	marks	ordinal/nominal mapping	quantitative mapping
shape	glyph	○ □ + △ S U	
size	rectangle, circle, glyph, text	● ● ● ●	● ● ● ● ● ● ● ● ● ●
orientation	rectangle, line, text	— / / \ \	— — — — — — — — — —
color	rectangle, circle, line, glyph, y-bar, x-bar, text, gantt bar		min max

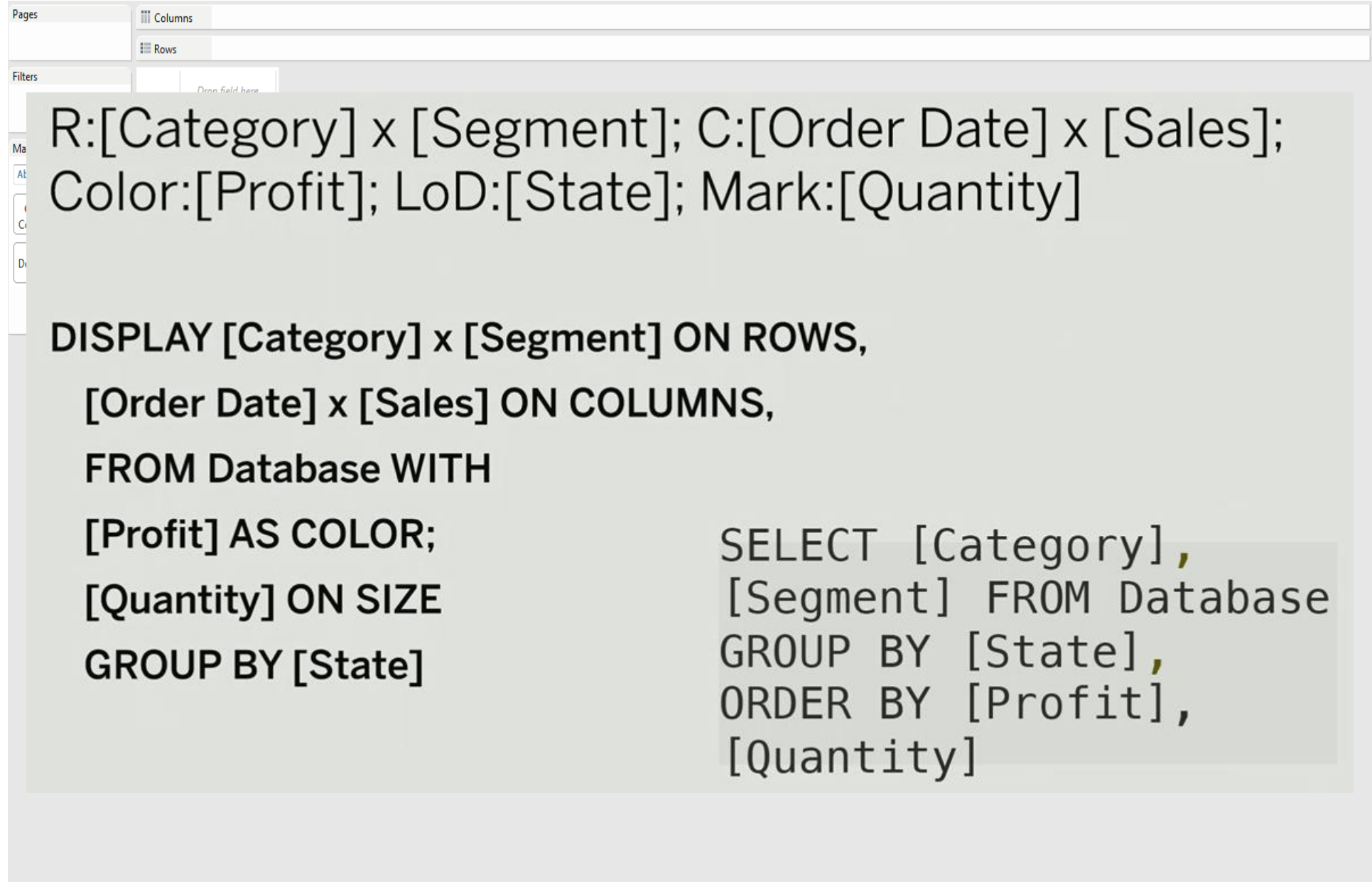
And then we provided a blank canvas...

The image shows a screenshot of a data visualization tool interface. The main area is a large, light gray blank canvas. On the left side, there is a sidebar with several sections:

- Pages:** A section at the top left of the sidebar.
- Columns:** A section below Pages, containing a grid icon and the text "Columns".
- Rows:** A section below Columns, containing a grid icon and the text "Rows".
- Filters:** A section below Rows, currently empty.
- Marks:** A section below Filters, containing a dropdown menu set to "Abc Automatic".
- Color:** A button with a color wheel icon.
- Size:** A button with a circular arrow icon.
- Abc 123 Text:** A button with a text icon.
- Detail:** A button with a magnifying glass icon.
- Tooltip:** A button with a speech bubble icon.

In the top-left corner of the main canvas area, there is a small white box containing a 2x2 grid of cells, each with the text "Drop field here".

And then we provided a blank canvas...



The image shows a screenshot of a BI tool interface. At the top, there are tabs for 'Pages', 'Columns', and 'Rows'. Below that is a 'Filters' section with a placeholder 'Drop field here'. On the left side, there is a vertical menu with options like 'Ma', 'At', 'C', and 'D'. A large, semi-transparent grey box is overlaid on the center of the screen, containing SQL and visualization configuration code.

```
R:[Category] x [Segment]; C:[Order Date] x [Sales];  
Color:[Profit]; LoD:[State]; Mark:[Quantity]
```

```
DISPLAY [Category] x [Segment] ON ROWS,  
[Order Date] x [Sales] ON COLUMNS,  
FROM Database WITH  
[Profit] AS COLOR;  
[Quantity] ON SIZE  
GROUP BY [State]
```

```
SELECT [Category],  
[Segment] FROM Database  
GROUP BY [State],  
ORDER BY [Profit],  
[Quantity]
```

And then we provided a blank canvas...

```
R:[Category] x [Segment]; C:[Order Date] x [Sales];  
Color:[Profit]; LoD:[State]; Mark:[Quantity]
```

```
DISPLAY [Category] x [Segment] ON ROWS,  
[Order Date] x [Sales] ON COLUMNS,  
FROM Database WITH  
[Profit] AS COLOR;  
[Quantity] ON SIZE  
GROUP BY [State]
```



A nighttime cityscape featuring a prominent skyscraper with a green top and other illuminated buildings. In the foreground, a highway shows light trails from traffic. A large, semi-transparent blue circular graphic with concentric arcs is overlaid on the scene. The text "What is Modern Analytics" is centered in white.

What is Modern Analytics

Washington State
Convention Center

A nighttime cityscape featuring a prominent skyscraper with a green top and other illuminated buildings. In the foreground, a highway shows light trails from moving vehicles. A large, semi-transparent blue circle with concentric arcs is overlaid on the center of the image, containing the text "Data is everywhere".

Data is everywhere

Washington State
Convention Center

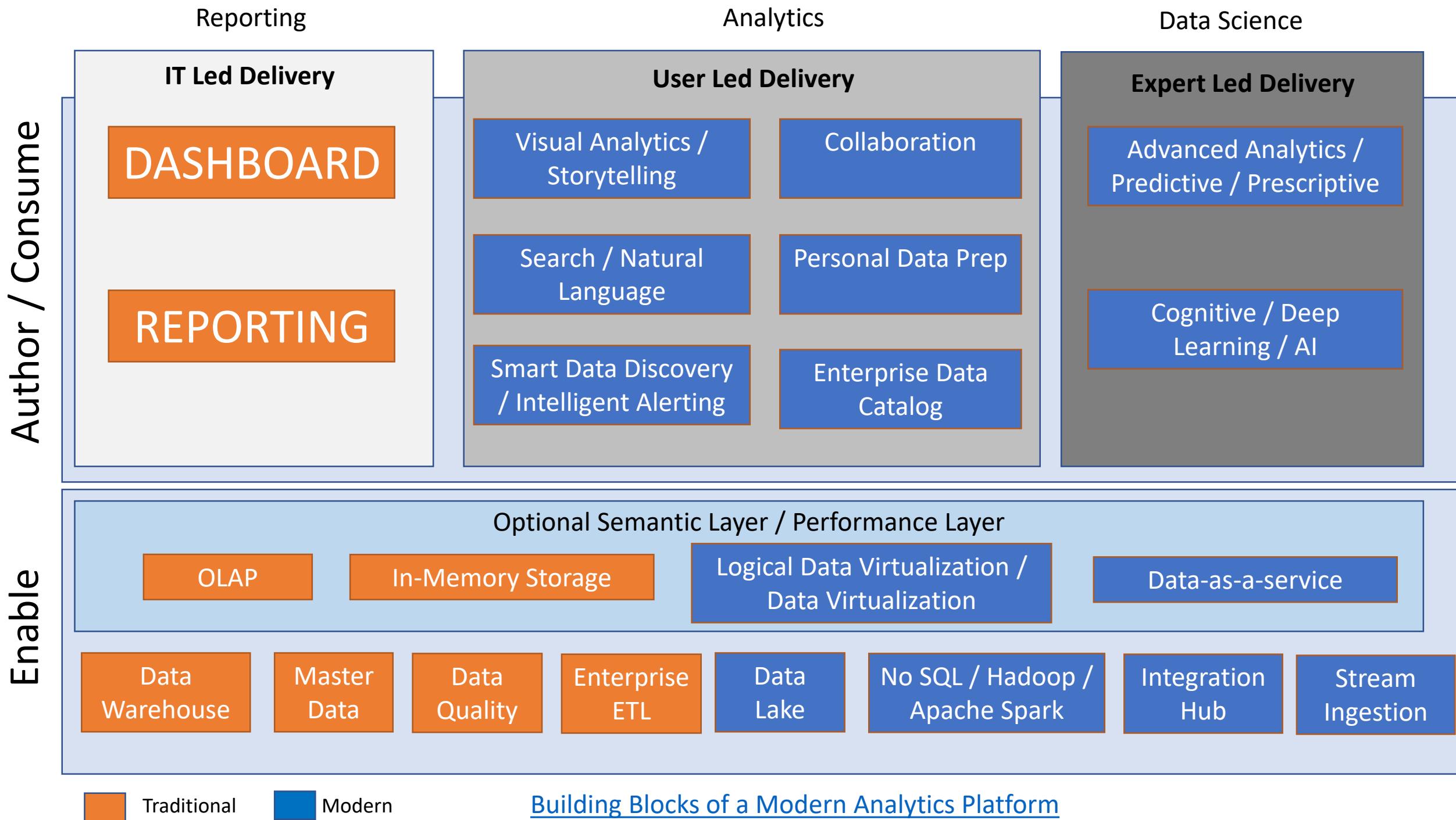


Everyone needs Data

Washington State
Convention Center

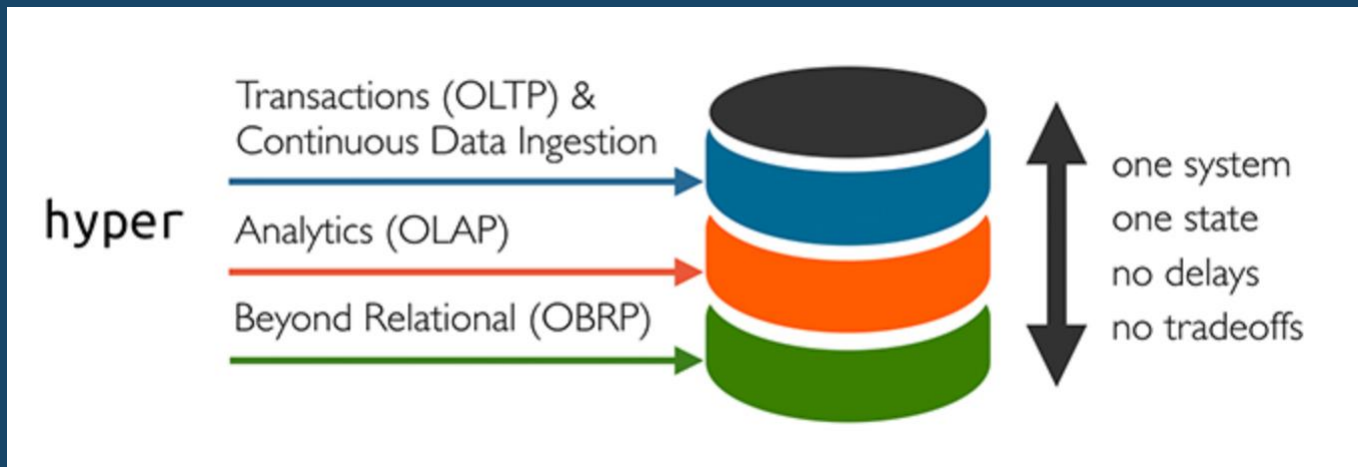


Data is always changing

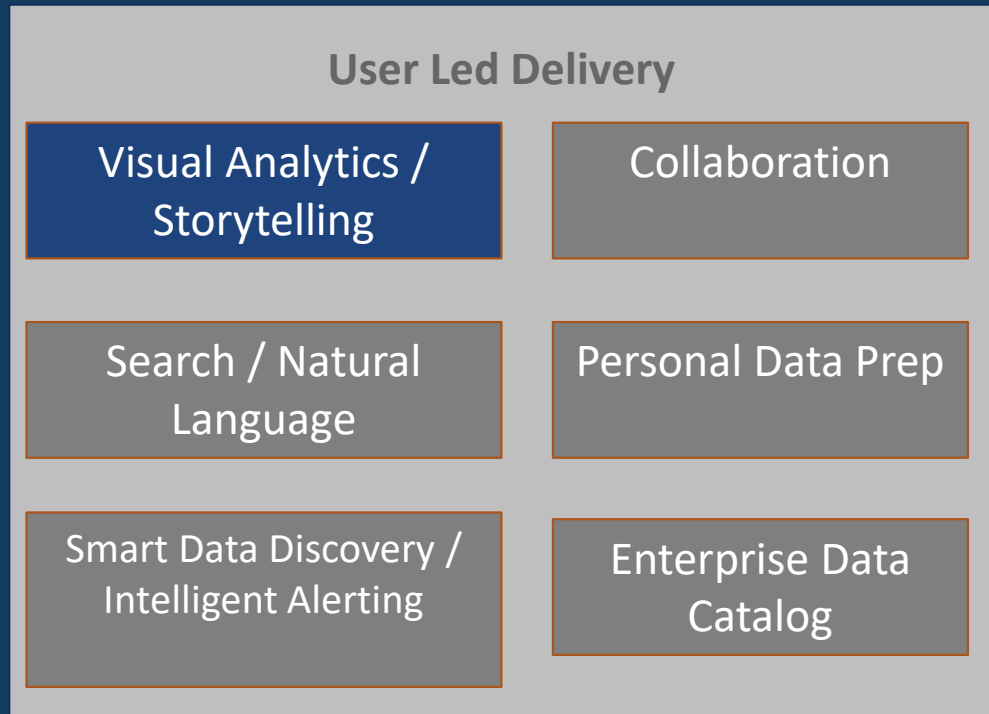


Semantic / Performance Layer

HYPER



Visual Analytics / Storytelling



9.0

Apr 2015

- Data interpreter
- New fresh intuitive look
- Analytics Pane
- Connect to Stats Data



2019.1

Feb 2019

- Set Actions
- Dashboard Extension
- Viz in Tooltip
- Linux support
- Connect data on the web

Visual Analytics / Storytelling

User Led Delivery

Visual Analytics /
Storytelling

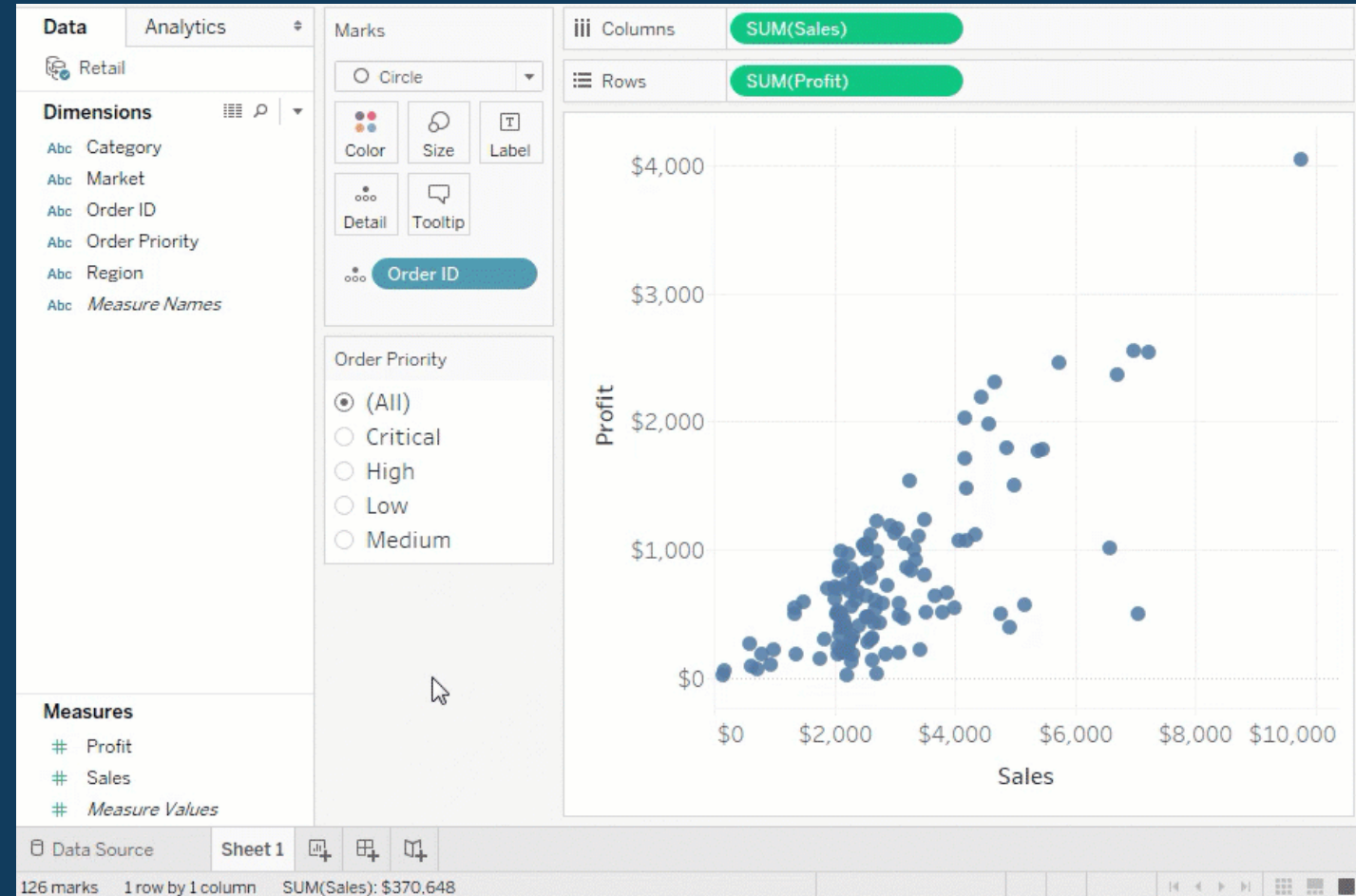
Collaboration

Search / Natural
Language

Personal Data Prep

Smart Data Discovery /
Intelligent Alerting

Enterprise Data
Catalog



Collaboration

Tableau Server / Tableau Online is a place where people collaborate..

User Led Delivery

Visual Analytics /
Storytelling

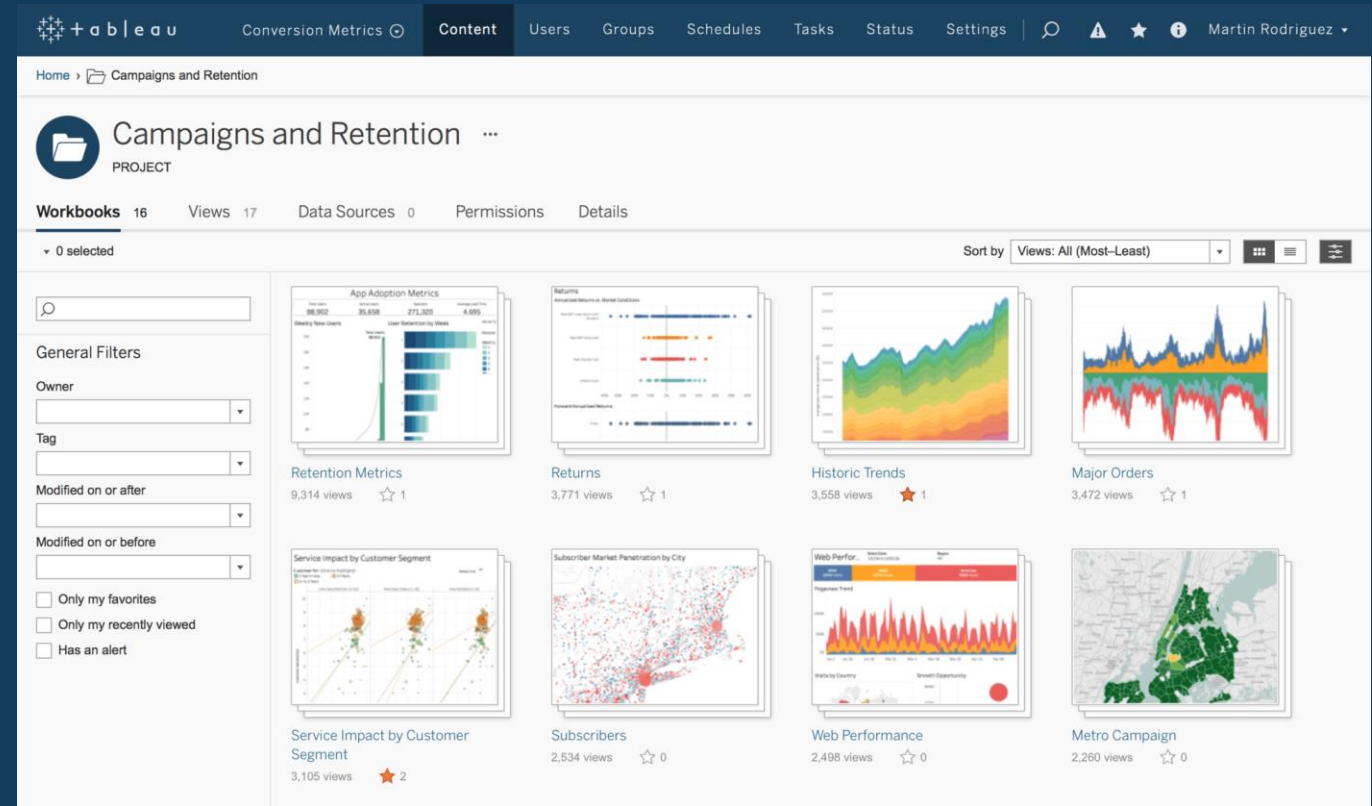
Collaboration

Search / Natural
Language

Personal Data Prep

Smart Data Discovery /
Intelligent Alerting

Enterprise Data
Catalog



Collaboration

Tableau Server / Tableau Online is a place where people can trust their data...

User Led Delivery

Visual Analytics /
Storytelling

Collaboration

Search / Natural
Language

Personal Data Prep

Smart Data Discovery /
Intelligent Alerting

Enterprise Data
Catalog

The screenshot shows the Tableau Server interface with the 'Data Sources' page selected. The navigation bar includes 'Content', 'Users', 'Groups', 'Schedules', 'Tasks', 'Status', and 'Settings'. The main content area displays a list of data sources with columns for Name, Views, Workbooks, and Connects to. A 'General Filters' sidebar is visible on the left.

Name	Views: All	Workbooks	Connects to
TS View Performance	1,952	2	mysql.test.tsi.lan +3
BugCaseDW	1,912	1	mysql.test.tsi.lan +3
LoadingFile	1,823	5	World Indicators.tde
ProductTeamCity	1,819	3	mssql2008.test.tsi.lan
with auth none	1,774	2	mssql2008.test.tsi.lan
DNSInfo	1,717	1	AwardsNomWins.xlsx
Bike Trips	1,619	5	Bowery.csv
eo_0808	1,547	2	wildlife.accdb
TFS-Alpo-Case	1,541	3	tfsdbro.tsi.lan +1
DSJ Superstore	1,539	5	googleapis.com/bigquery

Collaboration

Tableau Server / Tableau Online is a place where people can ask their own questions...

User Led Delivery

Visual Analytics /
Storytelling

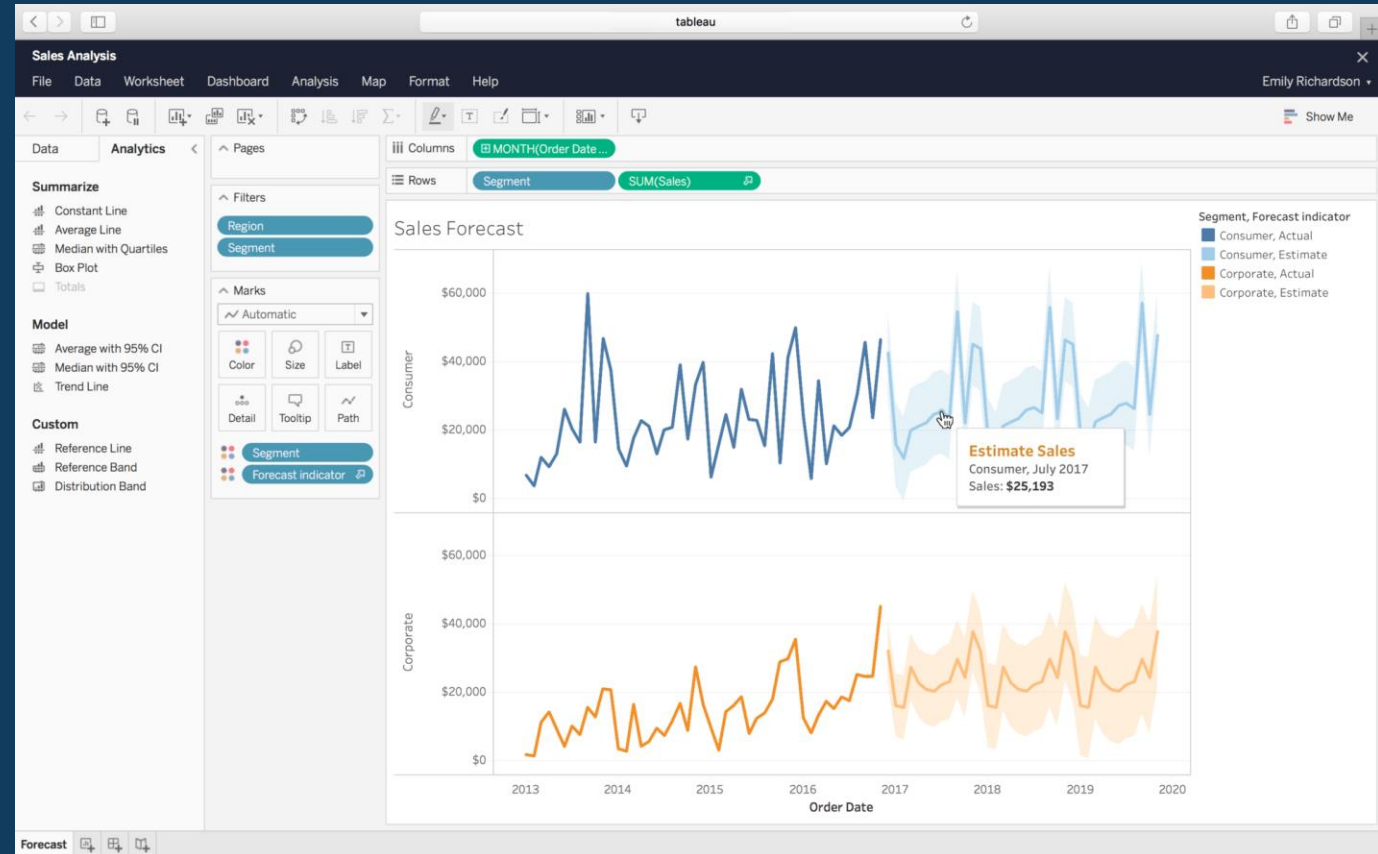
Collaboration

Search / Natural
Language

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Intelligent Alerting

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Catalog



Search / Natural Language

User Led Delivery

Visual Analytics /
Storytelling

Collaboration

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Enterprise Data
Catalog

2017 Superstore

Analysis complete ⓘ Refresh <

Search 🔍

Dimensions

- Abc Category
- 🌐 City
- 🌐 Country
- Abc Customer Name
- 📅 Order Date
- Abc Order ID
- T|F Order Profitable?
- 🌐 Postal Code
- Abc Product Name
- Abc Region
- Abc Segment
- 📅 Ship Date
- Abc Ship Mode
- Abc Ship Status
- 🌐 State
- Abc Sub-Category

Measures

- # Days to Ship Actual
- # Days to Ship Scheduled
- # Discount
- # Number of Records
- # Profit
- # Profit per Order
- # Profit Ratio
- # Quantity
- # Sales

Ask a question about this data...

Try asking these questions:

- top **Country** by sum of **Number of Records**
- sum of **Sales**
- by **Country**
- sort **Country** in alphabetical order
- Sales** at least \$0.44

Personal Data Prep

Tableau Prep Builder is **complete**

User Led Delivery

Visual Analytics /
Storytelling

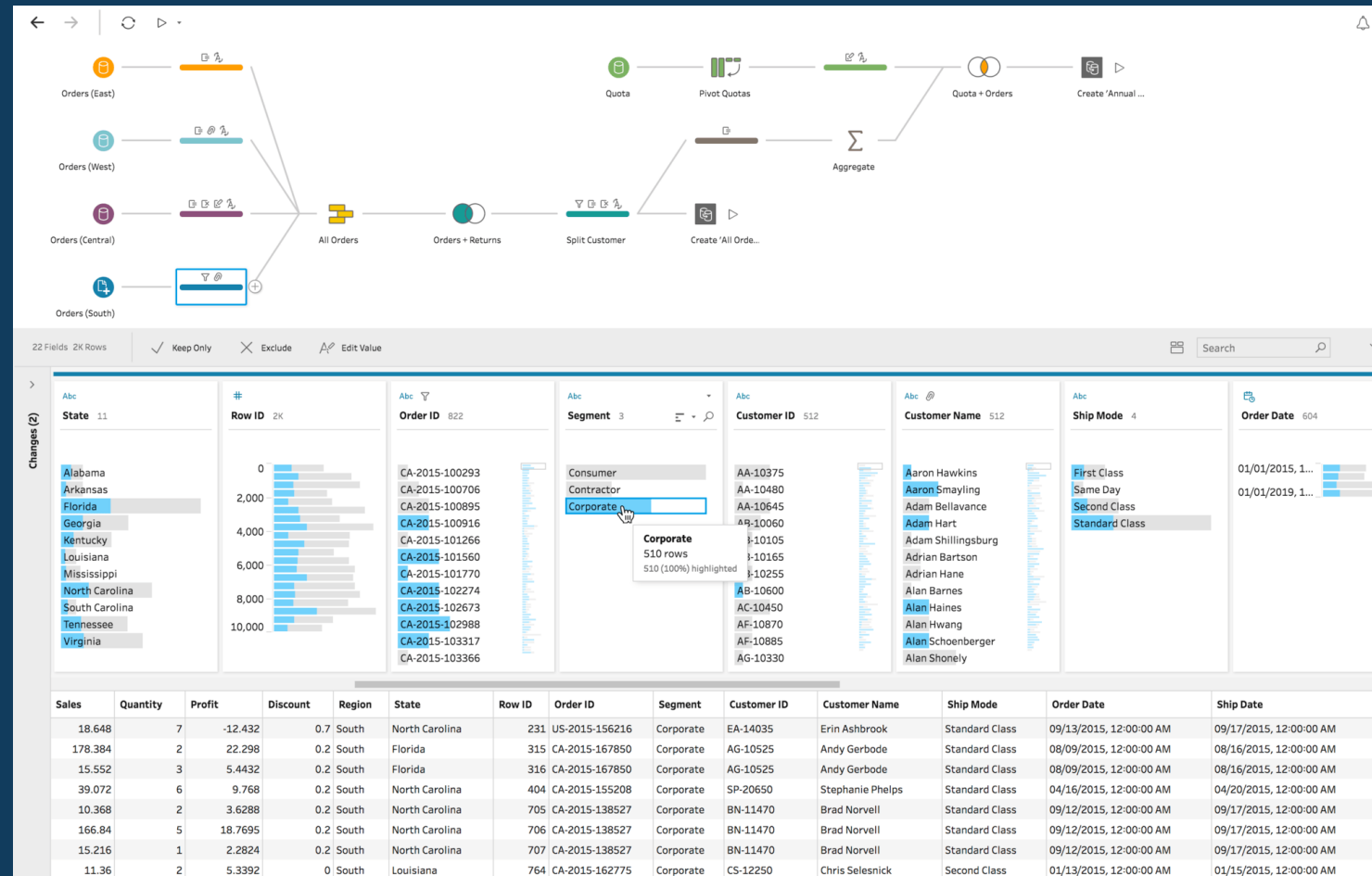
Collaboration

Search / Natural
Language

Personal Data Prep

Smart Data Discovery /
Intelligent Alerting

Enterprise Data
Catalog



Personal Data Prep

Tableau Prep Builder is *immediate*

User Led Delivery

Visual Analytics /
Storytelling

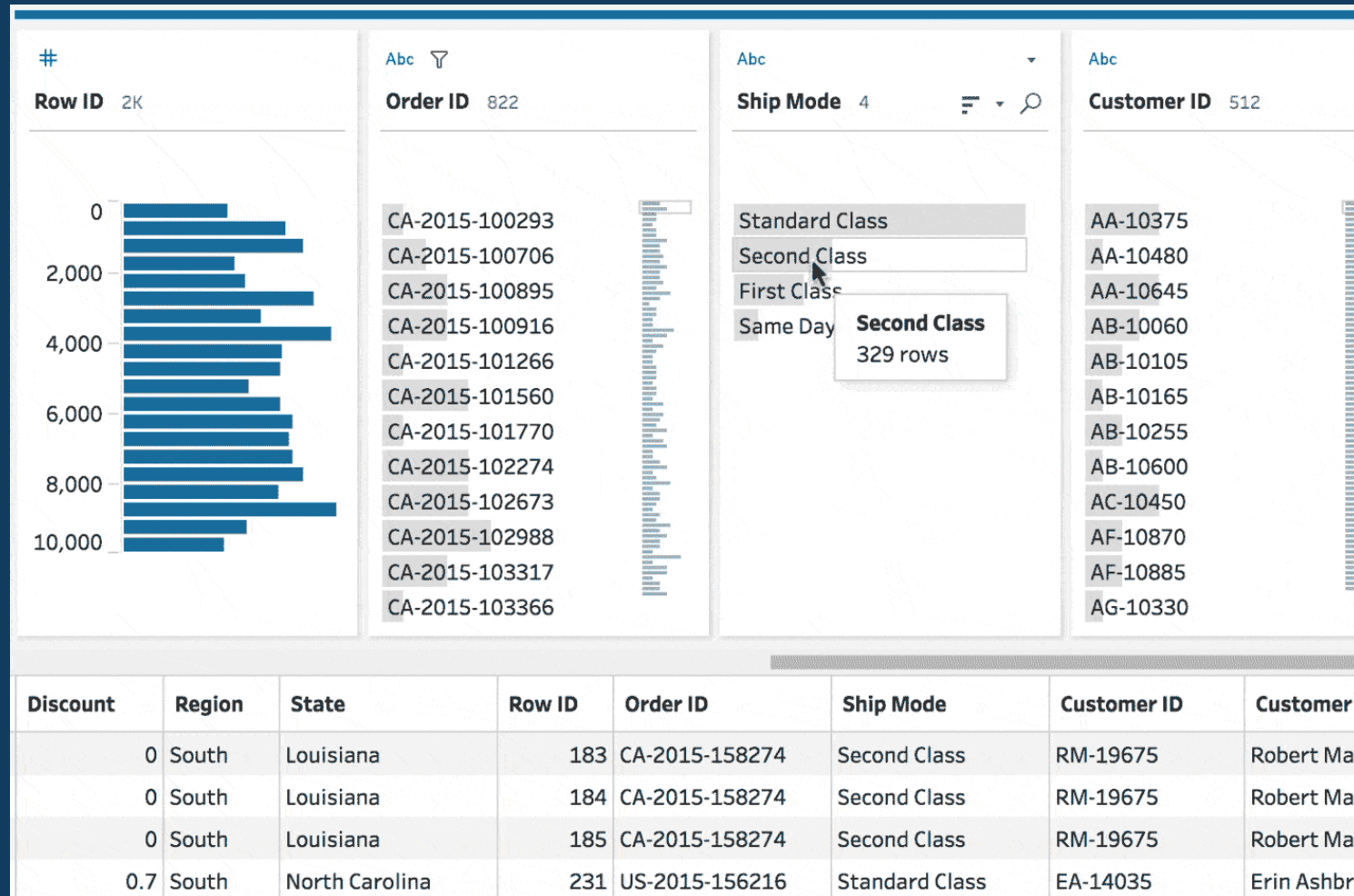
Collaboration

Search / Natural
Language

Personal Data Prep

Smart Data Discovery /
Intelligent Alerting

Enterprise Data
Catalog



Personal Data Prep

Tableau Prep Builder *is smart*

User Led Delivery

Visual Analytics /
Storytelling

Collaboration

Search / Natural
Language

Personal Data Prep

Smart Data Discovery /
Intelligent Alerting

Enterprise Data
Catalog

The screenshot shows the Tableau Prep Builder interface with four data prep steps: Return Notes (135 rows), Approver (30 rows), Order ID (253 rows), and Product ID (237 rows). The Approver field is highlighted with a blue border, and its dropdown menu is open, displaying a list of names: null, C Arnold, c. arnold, C.. Arnold, C/ Arnold, E Williams, E Wi lliams, E Williams, EWilliams, and F Azad.

Return Notes	Approver	Order ID	Product ID	Return Reason
doesn't need that type of mulch now	S. Kelly	CA-2018-113670	OFF-PA-10000675	No Longer Needed
Appeared to be damaged	E Williams	CA-2016-143238	TEC-AC-10003499	Defective
appeared to be damaged	L Jenkins	CA-2018-145772	TEC-AC-10003038	Defective
appeared to be damaged	L Jenkins	CA-2018-100111	TEC-AC-10001465	Defective

Smart Data Discovery

User Led Delivery

Visual Analytics /
Storytelling

Collaboration

Search / Natural
Language

Personal Data Prep

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Intelligent Alerting

Enterprise Data
Catalog

The screenshot shows a search interface with a search bar containing 'tfs parent'. Below the search bar, there are two main sections: 'Views' and 'Data Sources'. The 'Views' section lists three items: 'Sprint Feature-Stories' (823 views, 2 stars), 'Old Bugs' (306 views, 1 star), and another 'Sprint Feature-Stories' (142 views, 0 stars). The 'Data Sources' section lists three items: 'TFS-CurrentWorkItemWithParents' (30,147 views, 33 shares, 0 stars), 'TFS-CurrentWorkItemParentFeature' (36,841 views, 46 shares, 1 star), and 'CWIParentFeatureTags' (492 views, 1 share, 0 stars). Each item has a small icon representing a data source or view.

Search: tfs parent

Views 15 [See All](#)

- Sprint Feature-Stories
823 views ☆ 2
- Old Bugs
306 views ☆ 1
- Sprint Feature-Stories
142 views ☆ 0

Data Sources 7 [See All](#)

- TFS-CurrentWorkItemWithParents
30,147 views 📄 33 ☆ 0
- TFS-CurrentWorkItemParentFeature
36,841 views 📄 46 ☆ 1
- CWIParentFeatureTags
492 views 📄 1 ☆ 0

Smart Data Discovery

User Led Delivery

Visual Analytics /
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Enterprise Data
Catalog

The screenshot displays a data discovery interface. At the top, a search bar contains the text "tfs parent". Below the search bar, there is a section titled "Views" with a count of 15 and a "See All" link. The main area shows a "Tfs_Warehouse (2)" view. On the left, a "Connections" panel shows a "Microsoft SQL Server" connection. Below that, a "Database" dropdown is set to "Tfs_Warehouse". A "Table" section shows "All 115" tables, with a "Recommended 5" filter. A list of tables is visible, including "_DimAreaOverlay", "_DimIterationOverlay", "_DimTestCaseOverlay", "_LastUpdatedTime", "_PropertyBag", "_TestResultView", "_WarehouseConfig", "_WarehouseTimeOffsets", "_WarehouseUpdate", "_WitFields", "BuildChangesetView", "BuildCoverageView", "BuildDetailsView", "BuildProjectView", "CodeChurnView", and "CurrentWorkItemView". A red arrow points to the table list with the text "Drag tables here". On the right, a "Recommended Data Sources 37" panel shows two recommended data sources: "TFS-DefectSummary" and "TFS-Defects". Each source includes a description, project information, last extract time, and a list of popular fields. The "TFS-DefectSummary" source has 107 items and 1 star, while "TFS-Defects" has 144 items and 0 stars. Both sources have an "Add This Data Source" button.

Smart Data Discovery

User Led Delivery

Visual Analytics /
Storytelling

Collaboration

Search / Natural
Language

Personal Data Prep

Smart Data Discovery /
Intelligent Alerting

Enterprise Data
Catalog

The screenshot displays a data discovery interface. At the top, a search bar contains the text "tfs parent". Below the search bar, a "Views" section shows 15 results, with a "See All" link. The main interface is divided into several sections:

- Connections:** A list of connections, including "Microsoft SQL Server".
- Database:** A dropdown menu showing "Tfs_Warehouse".
- Table:** A list of tables, including "current", "CurrentWorkItemView", "FactCurrentWorkItem", "New Custom SQL", and "New Union".
- Stored Procedures:** A list of stored procedures, including "CreateBugSummary", "LinkData_AddUpdate", "prc_ChangeHostId", "prc_Dimension_..._UpdateOverlay", "prc_Dimension_D...Internal_Update", "prc_Dimension_...Item_AddUpdate", "prc_Dimension_...gory_AddUpdate", "prc_Fact_FactW...Item_AddUpdate", "prc_Fact_WorkI...gory_AddUpdate", and "prc_LastUpdated...DeleteAllJobs".
- Table View:** A table with columns for "#", "vTableau_CurrentWorkItem", "Microsoft VSTS Sc...", and "Microsoft VSTS Sc...".
- Filters:** A section with "Filters" and "Add" buttons.
- Recommended Data Sources:** A section titled "Recommended Data Sources 11" showing a list of recommended data sources. The first entry is "TFS-CurrentWorkItemWithParents" by Oliver Jen, with 33 views and 0 stars. It is described as a "Specialized datasource used for tracing parent-child lineage of work items down the TFSPortfolio Hierarchy (e.g., Project: Internal System and Data Resources. Last extract: Jul 25, 2017, 2:59:52 PM)". Popular fields include "Work Item State", "Work Item Id", "Work Item Title", "Feature Title", and "Work Item Type". A green "Add This Data Source" button is present.
- WorkItemAncestors:** A section showing "Work Item Ancestors" by Oliver Jen, with 5 views and 0 stars. It is described as "Project: Default. Last extract: Jul 25, 2017, 2:52:02 PM". Popular fields include "Work Item State".

Enterprise Data Catalog

User Led Delivery

Visual Analytics /
Storytelling


Collaboration

Search / Natural
Language

Personal Data Prep

Smart Data Discovery
/ Intelligent Alerting

Enterprise Data
Catalog



The screenshot displays a web interface for an Enterprise Data Catalog. It features a sidebar with navigation icons and a main content area. The main area shows a table of data assets with columns for name, size, and other metadata. The table is filtered to show assets with a size of 1GB. The assets listed include 'Data Lake', 'Data Warehouse', 'Data Lakehouse', and 'Data Lakehouse'.

Name	Size	Other Info
Data Lake	1GB	1GB
Data Warehouse	1GB	1GB
Data Lakehouse	1GB	1GB
Data Lakehouse	1GB	1GB

Enterprise Data Catalog

User Led Delivery

Visual Analytics /
Storytelling

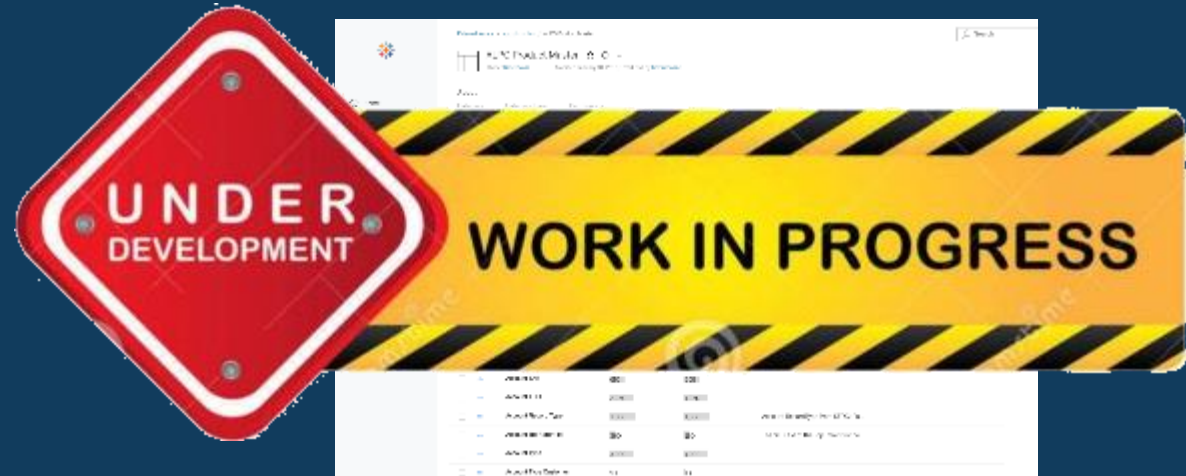
Collaboration

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Enterprise Data
Catalog



Enterprise Data Catalog

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Visual Analytics /
Storytelling

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Personal Data Prep

Smart Data Discovery
/ Intelligent Alerting

Enterprise Data
Catalog



Advanced Analytics / Deep Learning / AI

Expert Led Delivery

Advanced Analytics /
Predictive / Prescriptive

Cognitive / Deep
Learning / AI



RScript



Advanced Analytics / Deep Learning / AI

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RScript



TabPy

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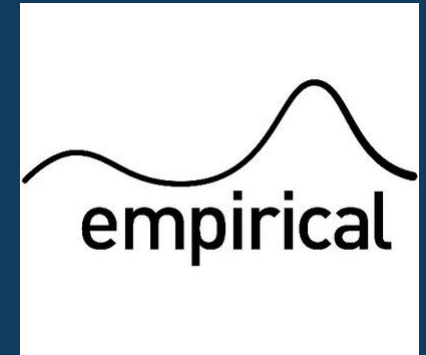
Cognitive / Deep
Learning / AI



RScript



TabPy





We help people see and understand data





Thank You