



eaZyBI

MDX ABC

Ilze Leite-Apine



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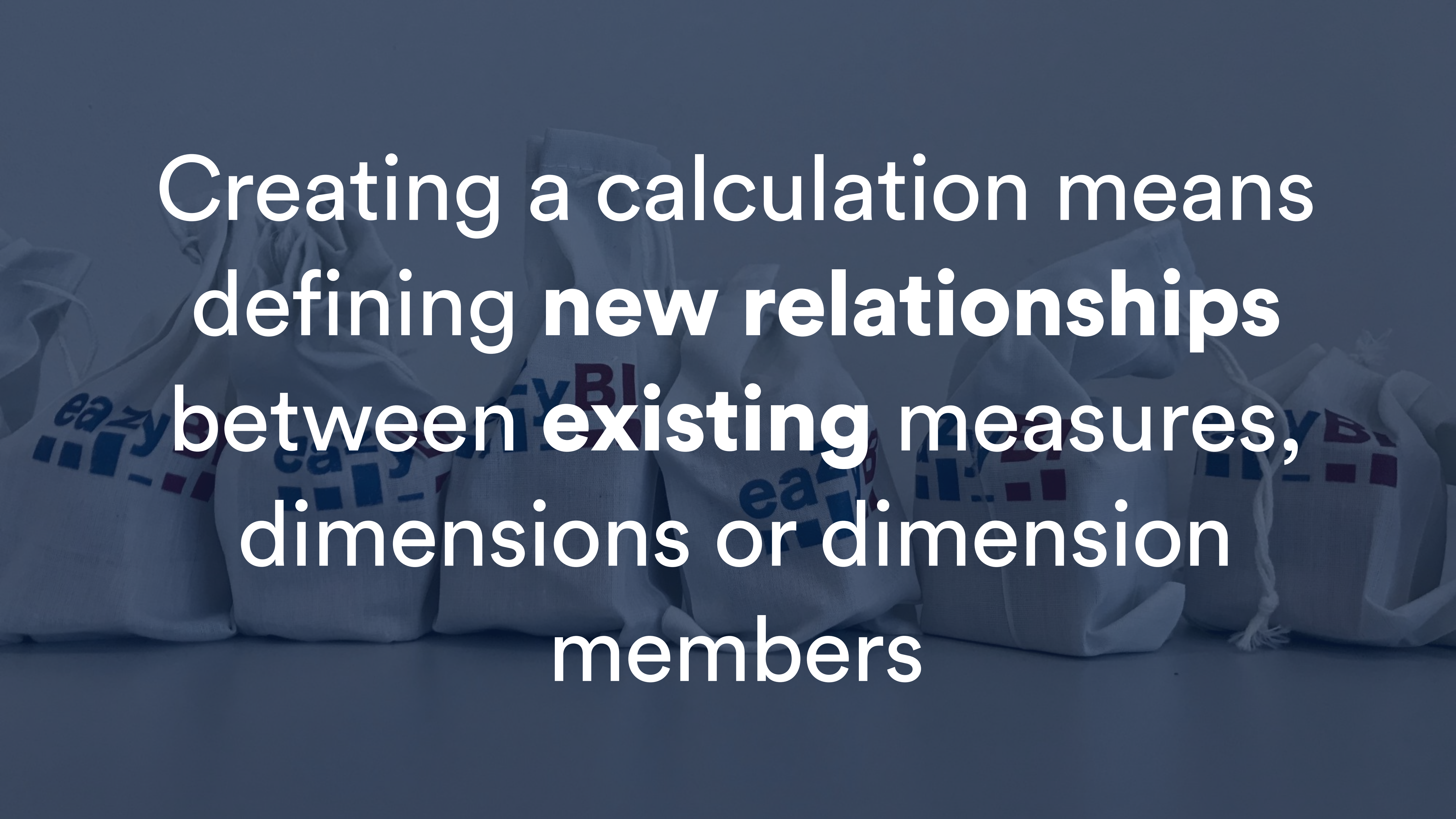


Community Days
May 16-17, 2019

**Multidimensional
data cube**

**Understanding
Measures &
Dimensions**

**How to put it
together?**



Creating a calculation means
defining **new relationships**
between **existing** measures,
dimensions or dimension
members



Concept

Understand multidimensional data
cube

How to build relationships

How to build relationships

Concept

Understand multidimensional data
cube

Measures & Dimensions

Know the building blocks you already
have

How to build relationships

Concept

Understand multidimensional data
cube

Measures & Dimensions

Know the building blocks you already
have

Put it together

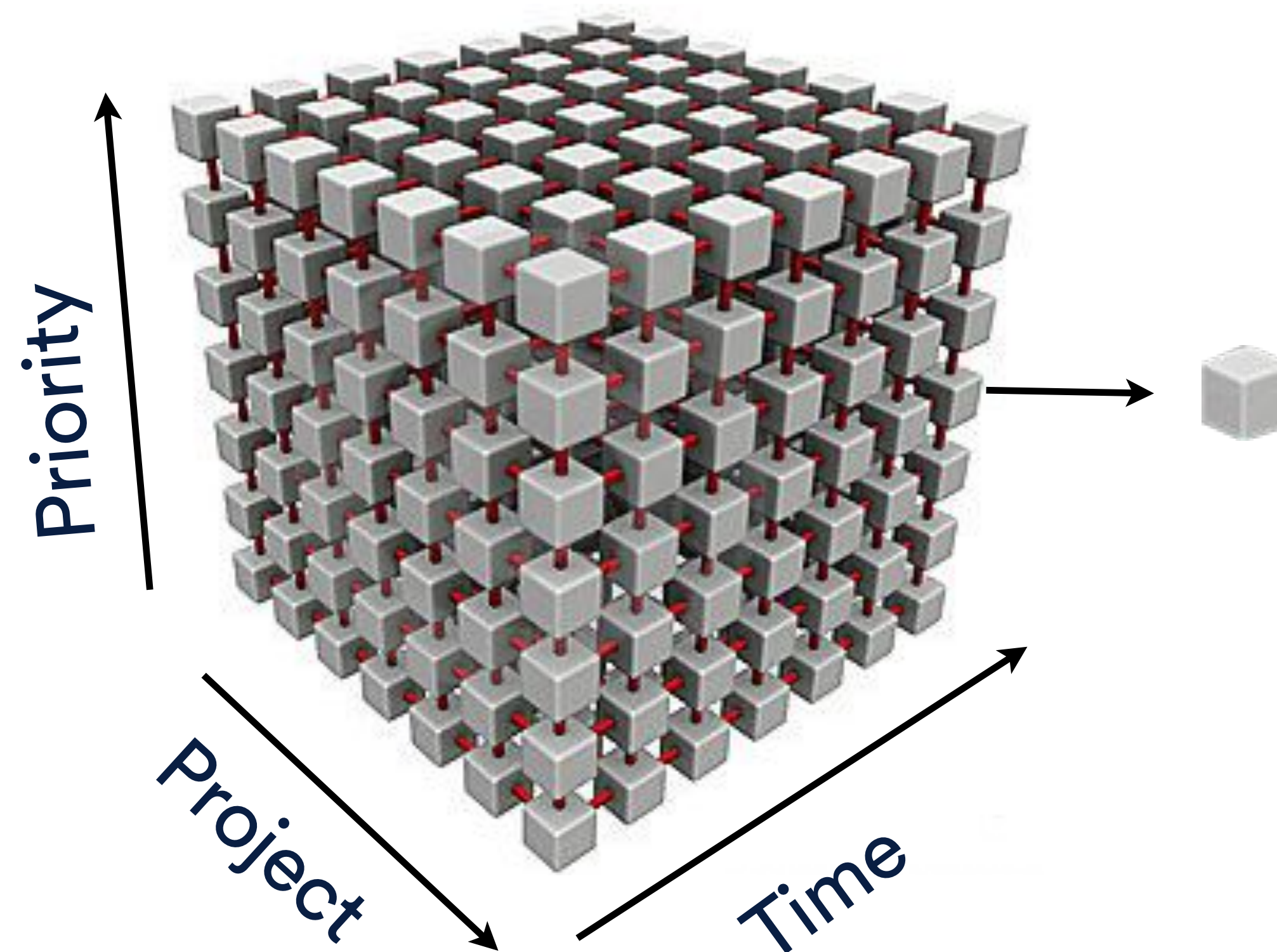
Functions, arguments, and expression
types

CONCEPT

Understand
multidimensional
data cube



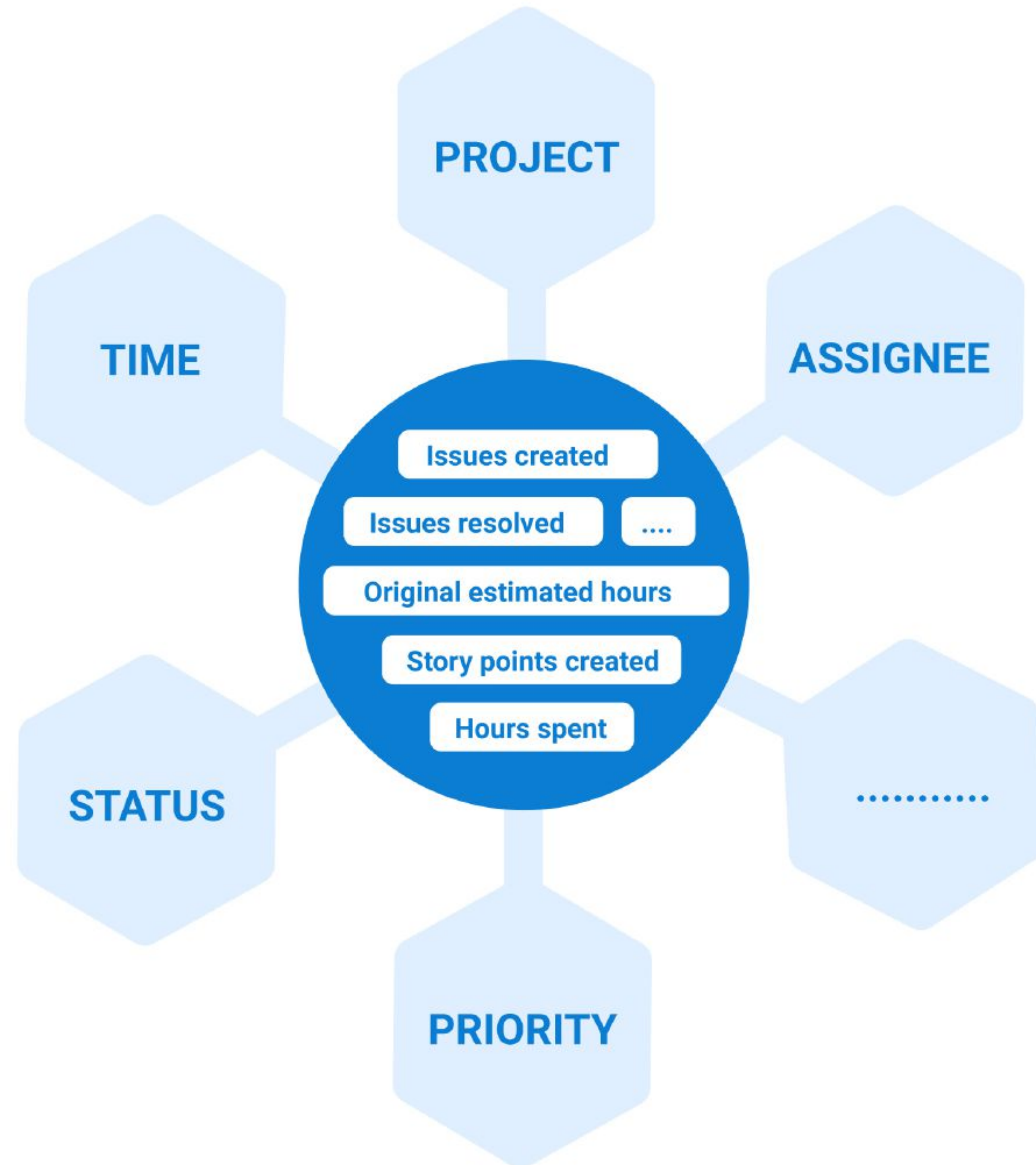
MULTIDIMENSIONAL CUBE



Measures

- Issues created
- Issues due
- Issues resolved

STAR SCHEMA



MEASURES & DIMENSIONS

**Know the
building blocks
you have**



Measures & dimensions

Building blocks

Behavior of measures

Naming patterns

Measures

Measures

Filter measures by name

Predefined

Issues created

Issues due

Issues resolved

Issues closed

Issues with due date

Issues last updated

Original estimated hours

Remaining estimated hours

Hours spent

Sub-tasks created

Sub-tasks due

Sub-tasks resolved

Sub-tasks closed

Transitions to status

Transitions from status

Days in transition status

Workdays in transition status

Remaining estimated hours change

Open issues = show

Average resolution days = show

Average resolution workdays = show

Average closing days = show

Average age days = show

Average age workdays = show

Original estimated hours with sub-tasks = show

Remaining estimated hours with sub-tasks = show

Hours spent with sub-tasks = show

Issues history = show

Average days in transition status = show

Average workdays in transition status = show

Transition to status first date = show

Transition to status last date = show

Transition from status first date = show

Transition from status last date = show

Transitions to assignee = show

Transitions from assignee = show

Remaining estimated hours history = show

Agile show 35 measures

Custom fields show 17 measures

Distinct issues count show 7 measures

Issue properties show 29 measures

Other properties show 7 measures

Tempo show 1 measure

User defined

Measures & dimensions

Building blocks

Behavior of measures

Naming patterns

Dimensions and their hierarchies

Pages

Drag here if needed

Rows

Nonempty

▼ Issue

▼ Select individual members

All Issues edit

Sub-task

All Issues with sub-tasks edit

Epic

All Issues by epics edit

Define new calculated member

Search and bookmark

► All hierarchy level members

► Drill into or expand

Pages

Columns

Measures

Table

Bar

Line

Pie

Scatter

Timeline

Map

✕

↶

↷

💬

⬇

Total ▼

Freeze header

	Hours spent	Issues resolved	Issue type
– All Issues by epics	1,339.02	304	
– D1	425.02	94	
– D1-12	38.00	10	Epic
– D1-10	13.00	4	Story
D1-13		1	Data task
D1-16	2.00	1	Test task
D1-19		1	Sub-task
D1-11	7.00	1	Story
D1-14	3.00	1	Bug
D1-15	7.00	1	Story
D1-17	2.00	1	Bug
D1-18	6.00	1	Story
+ D1-23	70.00	17	Epic
+ D1-34	140.00	32	Epic
+ D1-45	43.00	9	Epic
+ D1-102	37.00	8	Epic
+ D1-103	77.02	11	Epic
+ D2	419.00	99	

Measures & dimensions

Building blocks

Behavior of
measures

Naming
patterns

Measures & dimensions

Building blocks

Behavior of
measures

Naming
patterns

- There are **measures** and **properties**

Measures & dimensions

Building blocks

Behavior of
measures

Naming
patterns

- There are **measures** and **properties**
- Used with **Time dimension**, measures are counted by a specific issue date

Measures & dimensions

Building blocks

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patterns

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- Used with **Time dimension**, measures are counted by a specific issue date
- There are **actual** and **changelog** (historical) measures and dimensions

Measures & dimensions

Building blocks

Behavior of measures

Naming patterns

- There are **measures** and **properties**
- Used with **Time dimension**, measures are counted by a specific issue date
- There are **actual** and **changelog** (historical) measures and dimensions
- Some measures work with specific dimensions only. **Be aware** with Sprint scope, test management, Insight dimensions and measures

Measures & dimensions

Building blocks

Behavior of measures

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- There are **measures** and **properties**
- Used with **Time dimension**, measures are counted by a specific issue date
- There are **actual** and **changelog** (historical) measures and dimensions
- Some measures work with specific dimensions only. **Be aware** with Sprint scope, test management, Insight dimensions and measures

Measures in calculations would behave similarly as in reports!

Measures and properties

Story ▾	DEMO 003 ▾	To Do ▾	Sep 2017 ▾			
	Issues created	Issue status	Issue created date	Issue resolution date	Issue Planned analyze days ▾	Planned analyze days created
— D3	6					6.50
D3-100	1	To Do	Sep 02 2017		3.00	3.00
D3-14		Done	Mar 31 2017	Apr 24 2017	2.00	
D3-112	1	To Do	Sep 20 2017		2.00	2.00
D3-122		To Do	Oct 06 2017		2.00	
D3-125		To Do	Oct 11 2017		2.00	

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Measures and properties

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Measures with Time

D3-100 Experimenters Frankfurt's reimbursement examiners ... ▼

	Issues created	Planned analyze days created	Planned analyze days history	Planned analyze days change	Issues due
Sep 02 2017	1	3.00			
Oct 09 2018			2.00	2.00	
Nov 08 2018			4.00	2.00	
Nov 21 2018			3.00	-1.00	

Measures with Time

D3-100 Experimenters Frankfurt's reimbursement examiners ... ▼

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Measures & dimensions

Building blocks

Behavior of
measures

Naming
patterns

Measure name could help to:

Measures & dimensions

Building blocks

Behavior of
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Measure name could help to:

- distinct **measures** from **properties**

Measures & dimensions

Building blocks

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Story Points created vs Issue Story Points

Measures & dimensions

Building blocks

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Story Points created vs Issue Story Points

- distinct **actual** values from **historical** values

Measures & dimensions

Building blocks

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*Story Points **created** vs Issue Story Points*

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*Story Points **created** vs Story Points **history***

Measures & dimensions

Building blocks

Behavior of
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Measure name could help to:

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*Story Points **created** vs Issue Story Points*

- distinct **actual** values from **historical** values

*Story Points **created** vs Story Points **history***

- understand what **issue date** would be used to group issues on timeline

Measures & dimensions

Building blocks

Behavior of
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Measure name could help to:

- distinct **measures** from **properties**

*Story Points **created** vs Issue Story Points*

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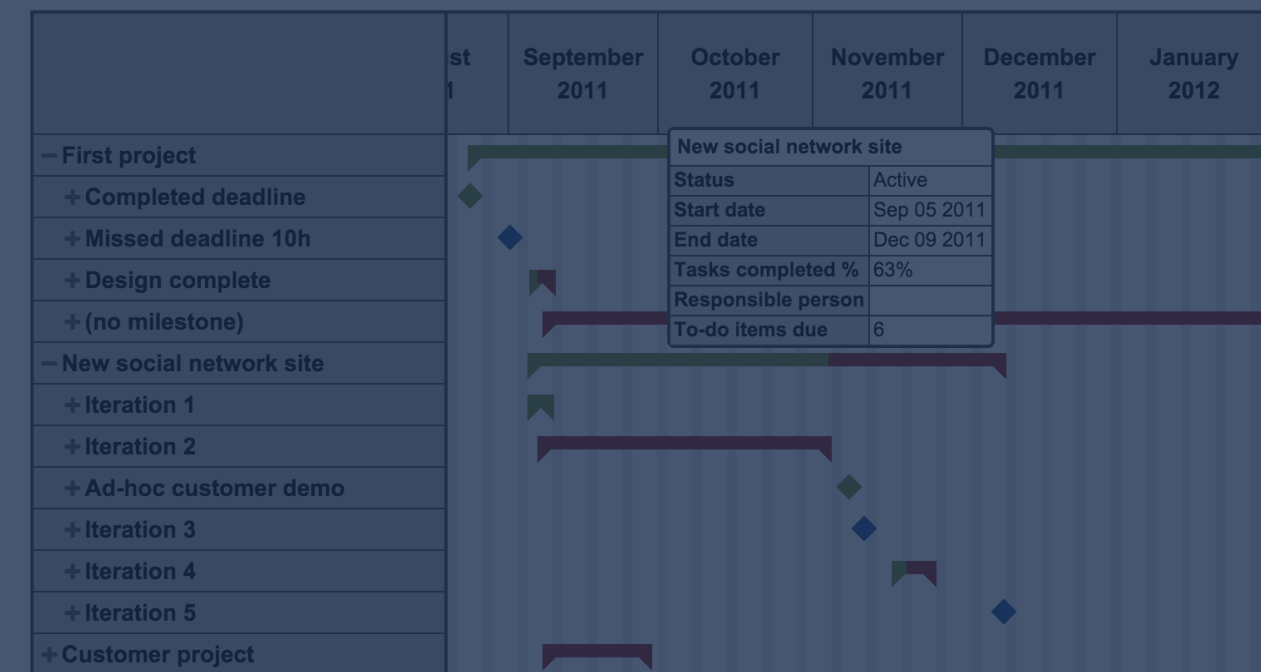
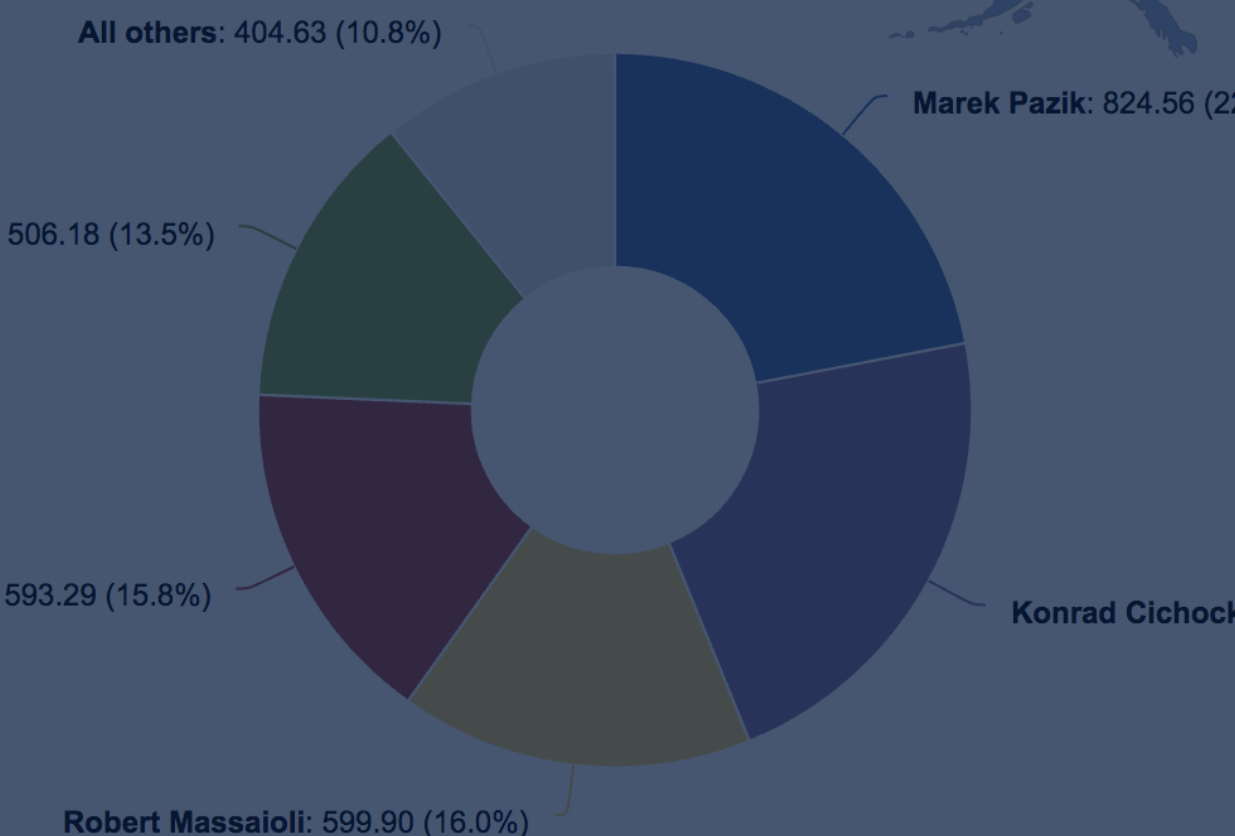
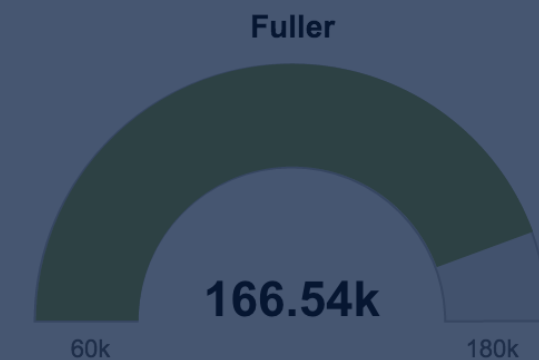
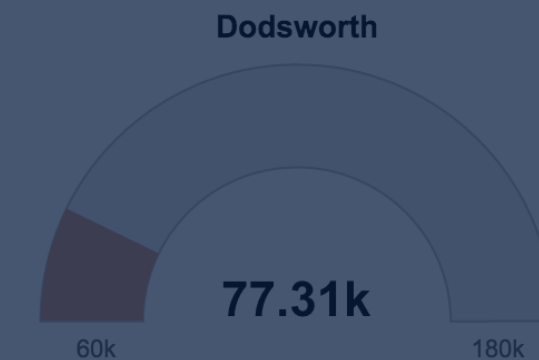
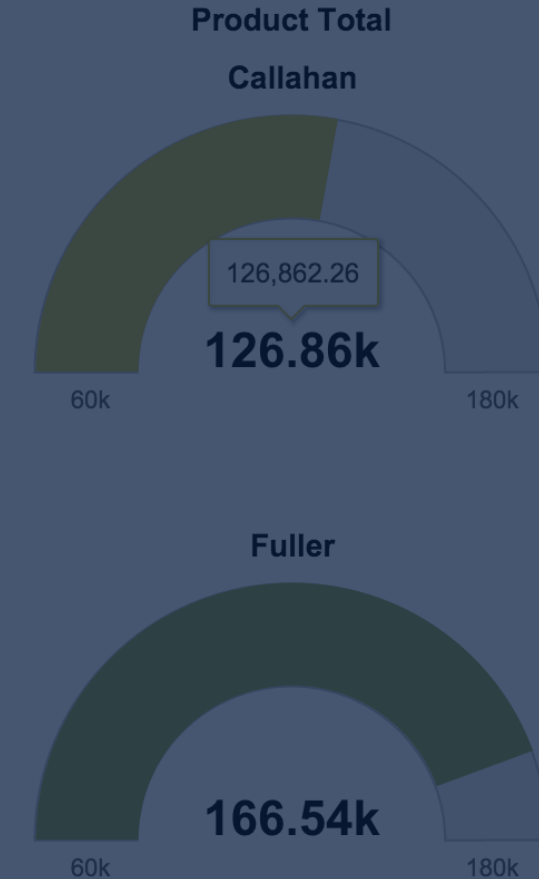
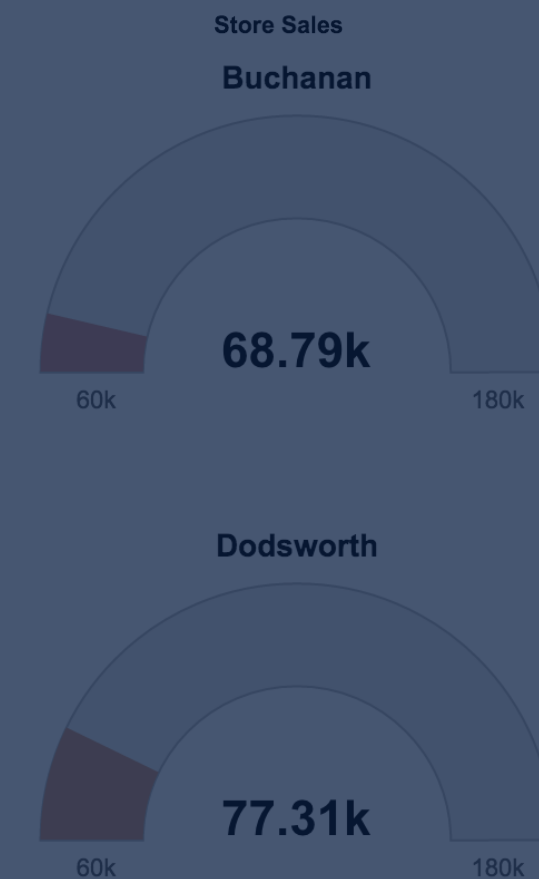
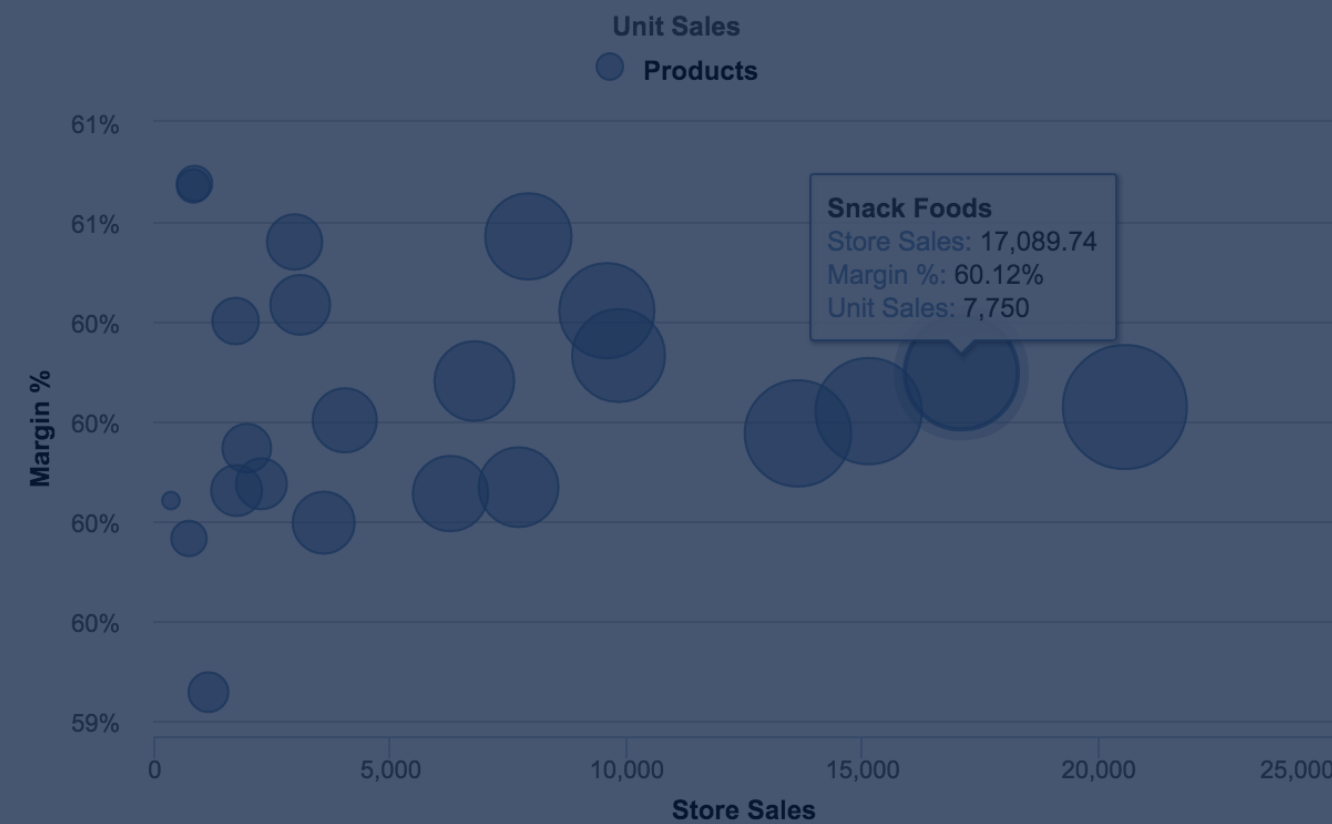
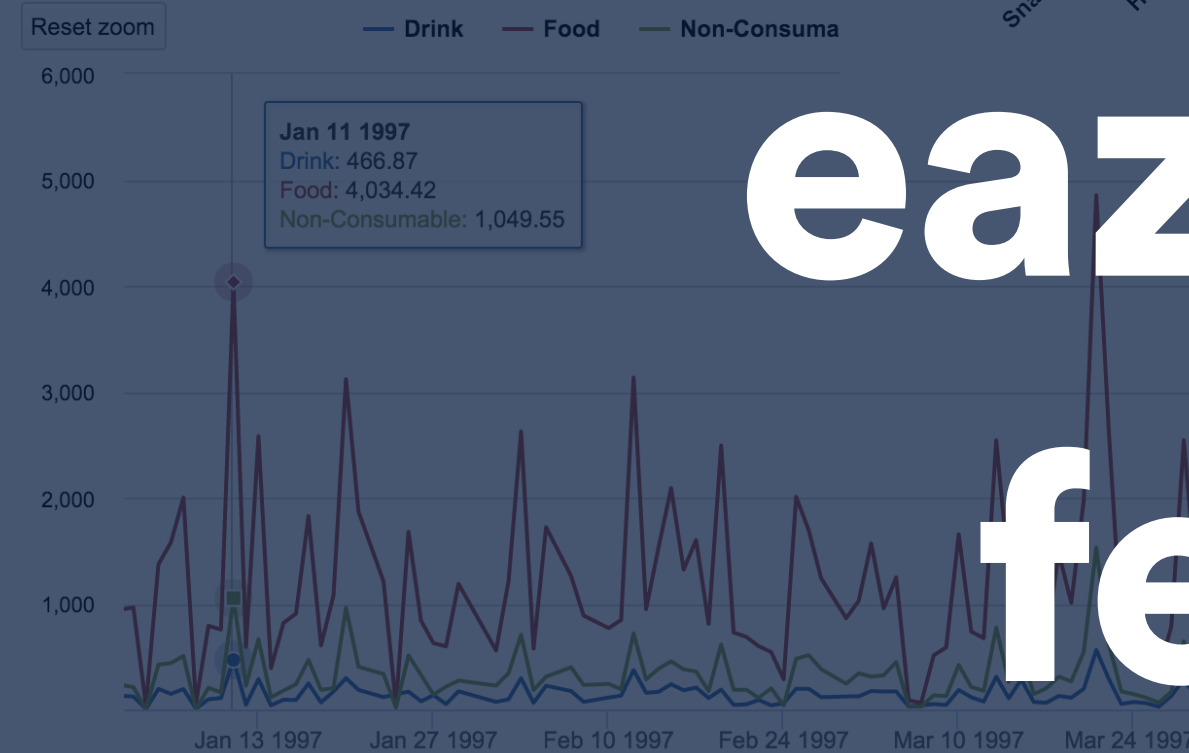
*Story Points **created** vs Story Points **history***

- understand what **issue date** would be used to group issues on timeline

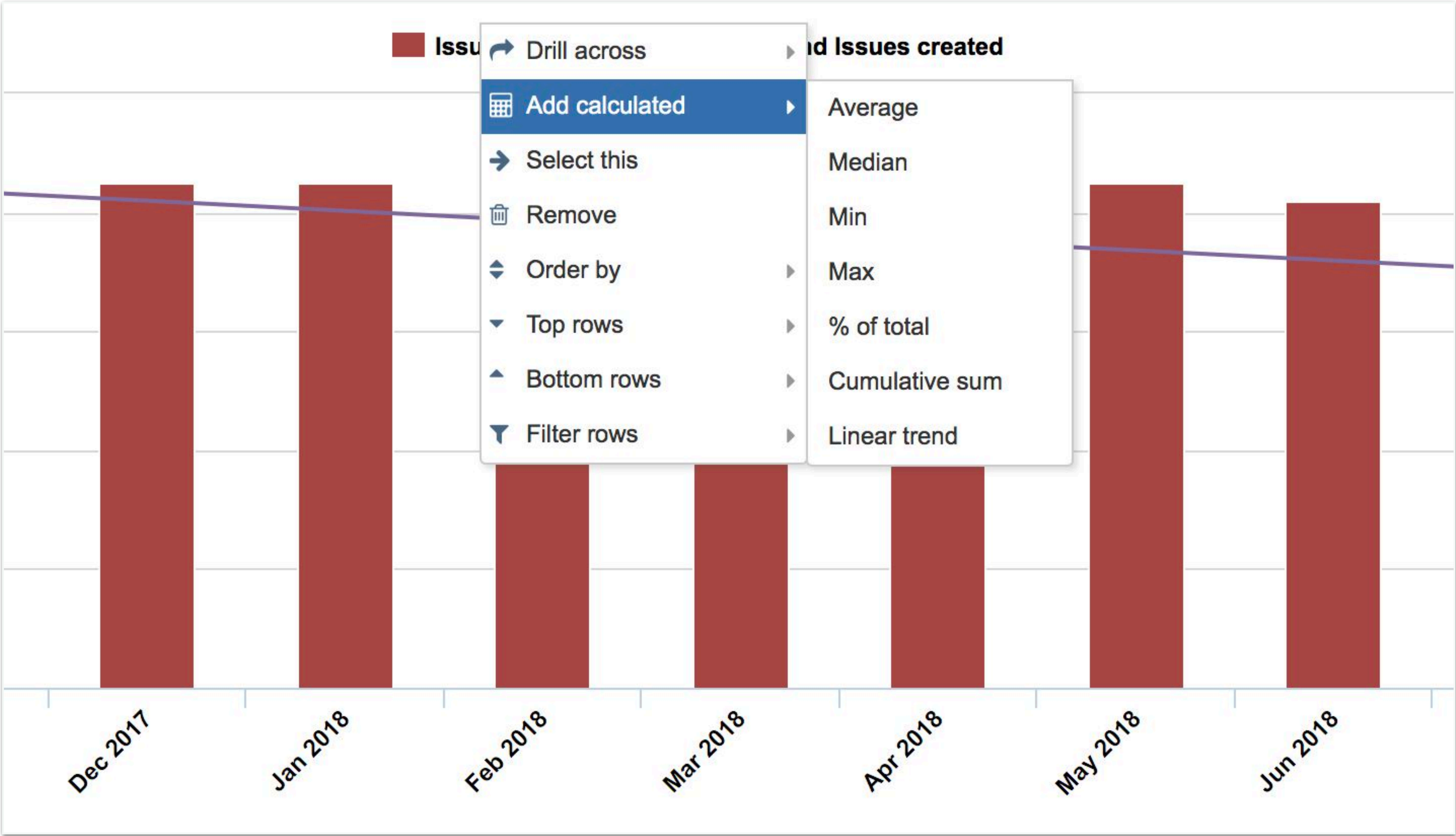
*Story Points **resolved** vs Story Points **with End date***

Have you tried using easyBI standard features yet?

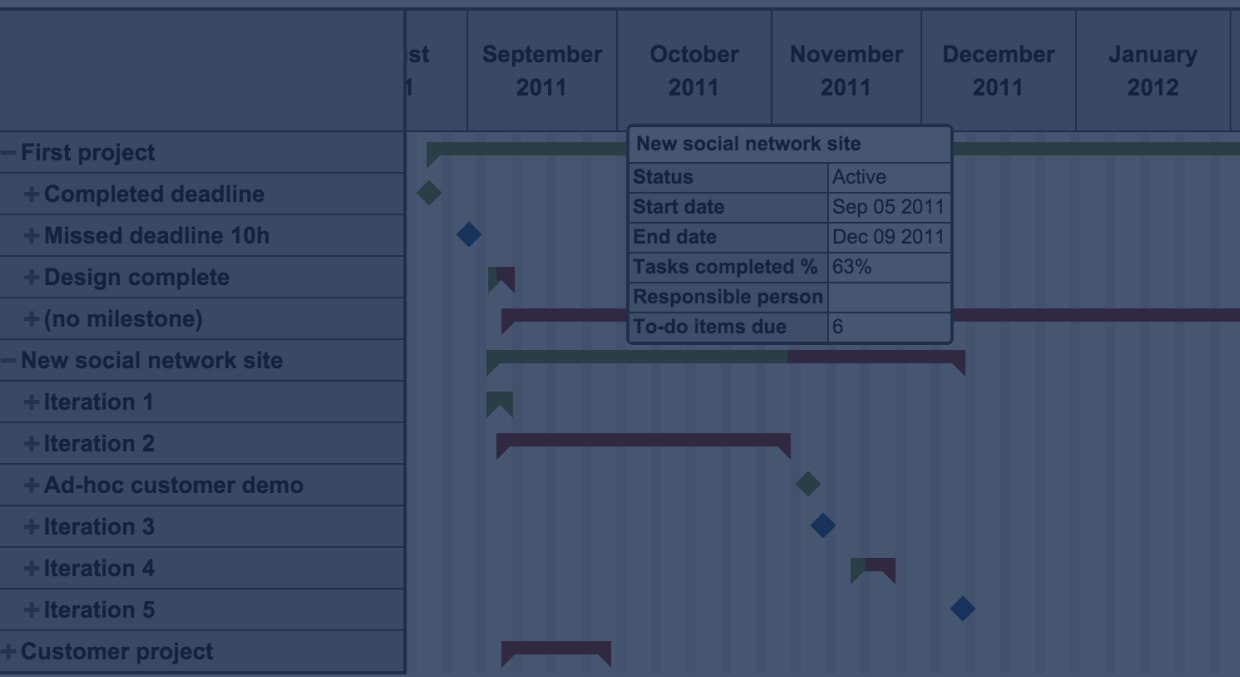
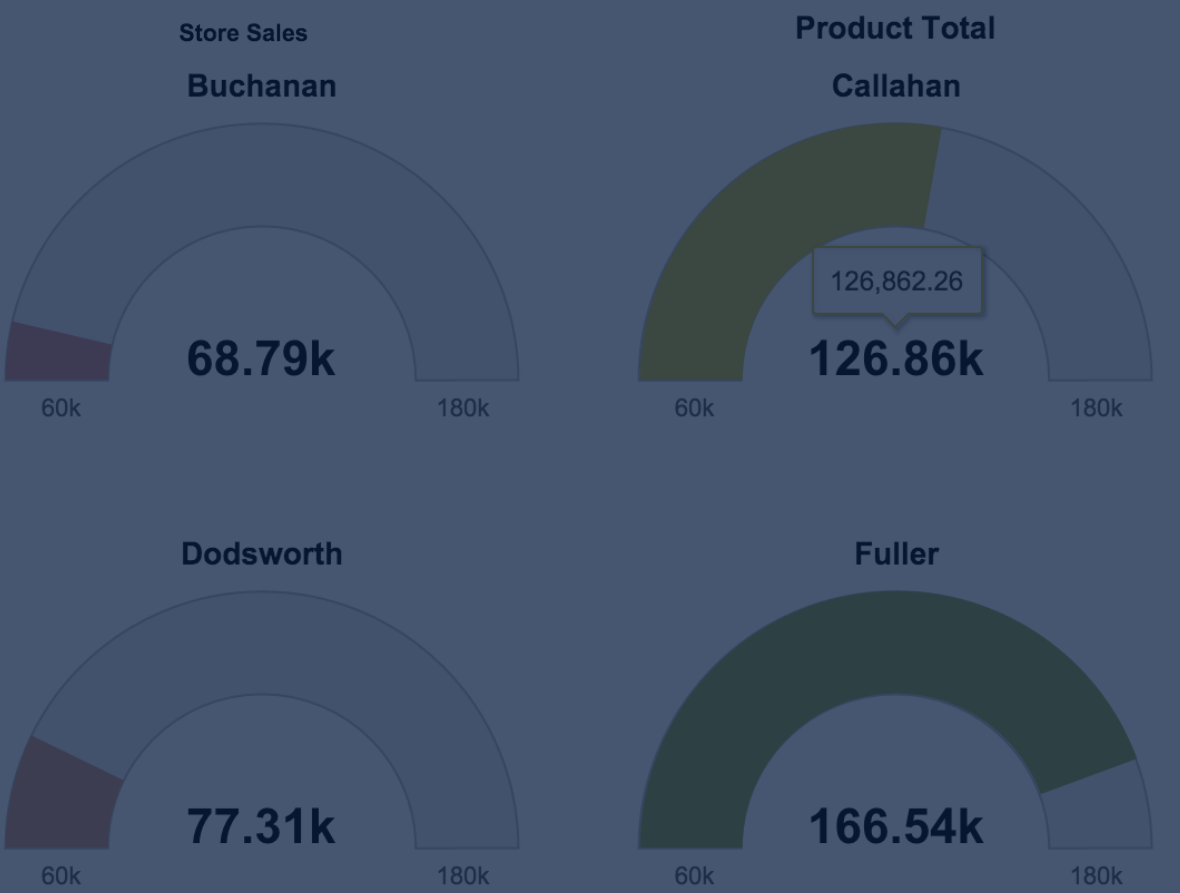
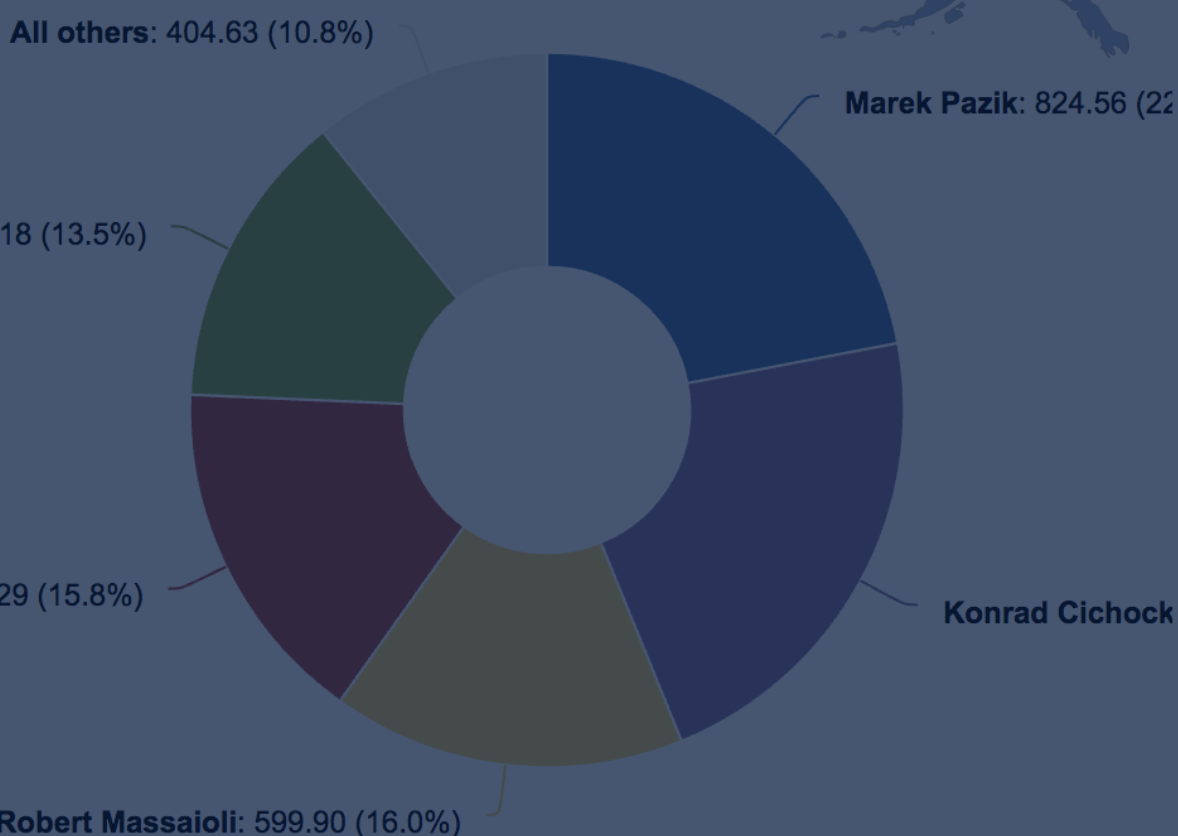
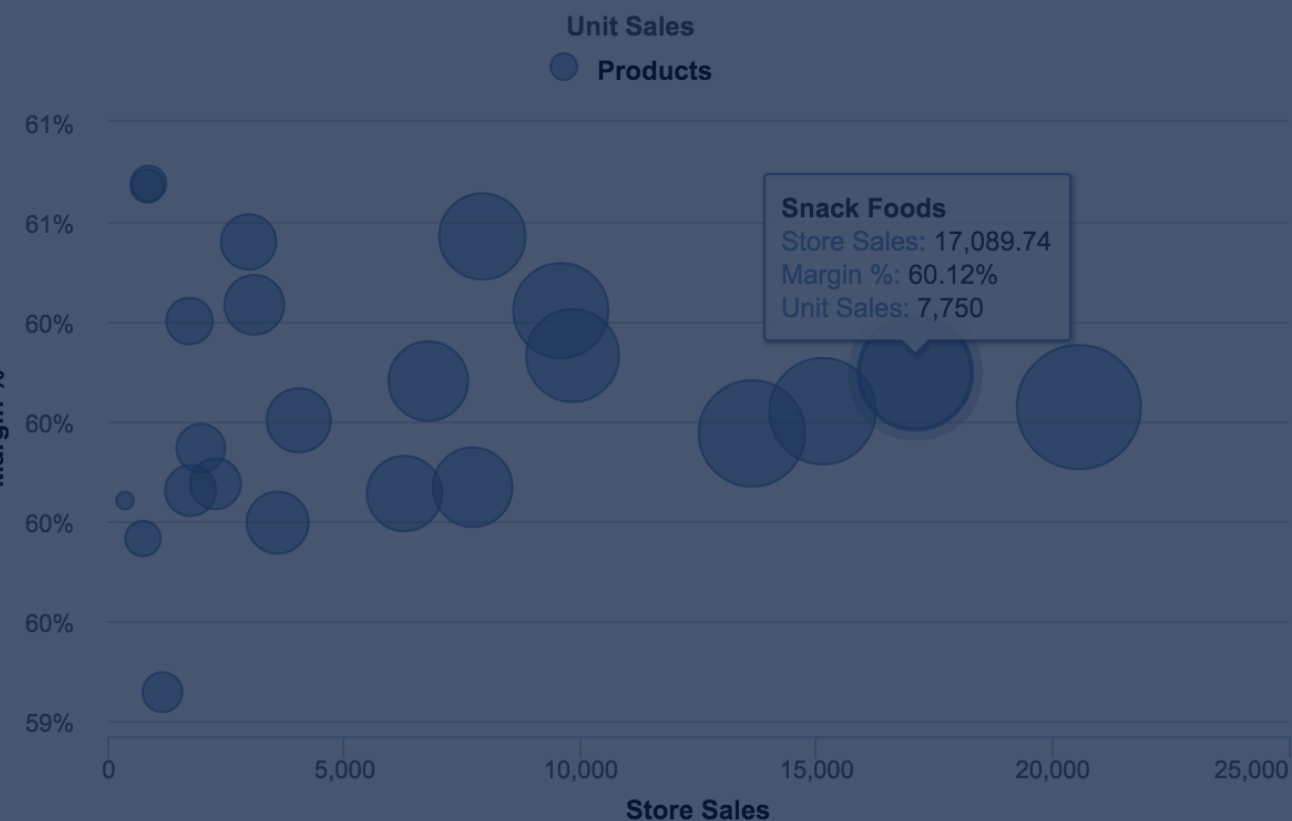
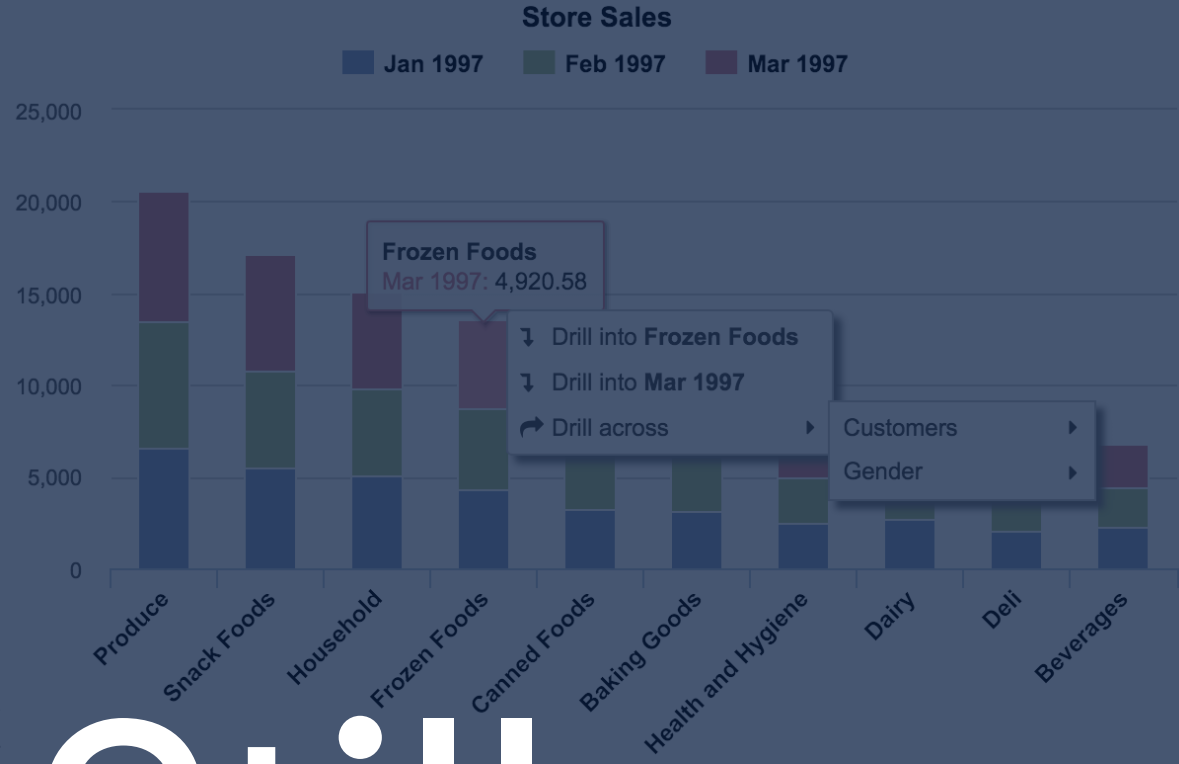
	Store Sales	Store Cost	Unit	Average
— All Customers	139,628.35	55,752.240	↗ Drill across	
— USA	139,628.35	55,752.240	→ Select this	
+ CA	36,175.20	14,431.085	↗ Remove	
— OR	40,170.29	16,081.073	↕ Top rows	
+ Albany	4,491.26	1,782.817	↕ Bottom rows	
+ Beaverton	2,407.97	950.359	↕ Filter rows	
+ Corvallis	5,695.13	2,281.248	⚙ Cell formatting	
+ Lake Oswego	2,262.56	907.6483		6.41
+ Lebanon	5,934.62	2,390.0872		6.49
+ Milwaukie	2,892.32	1,155.6925		6.92
+ Oregon City	2,324.62	929.6752		6.55
+ Portland	2,122.12	847.5187		6.65
+ Salem	4,251.81	1,697.9039		6.28
+ W. Linn	2,161.61	871.0418		6.59



Sneak peak of eazyBI 5.0.

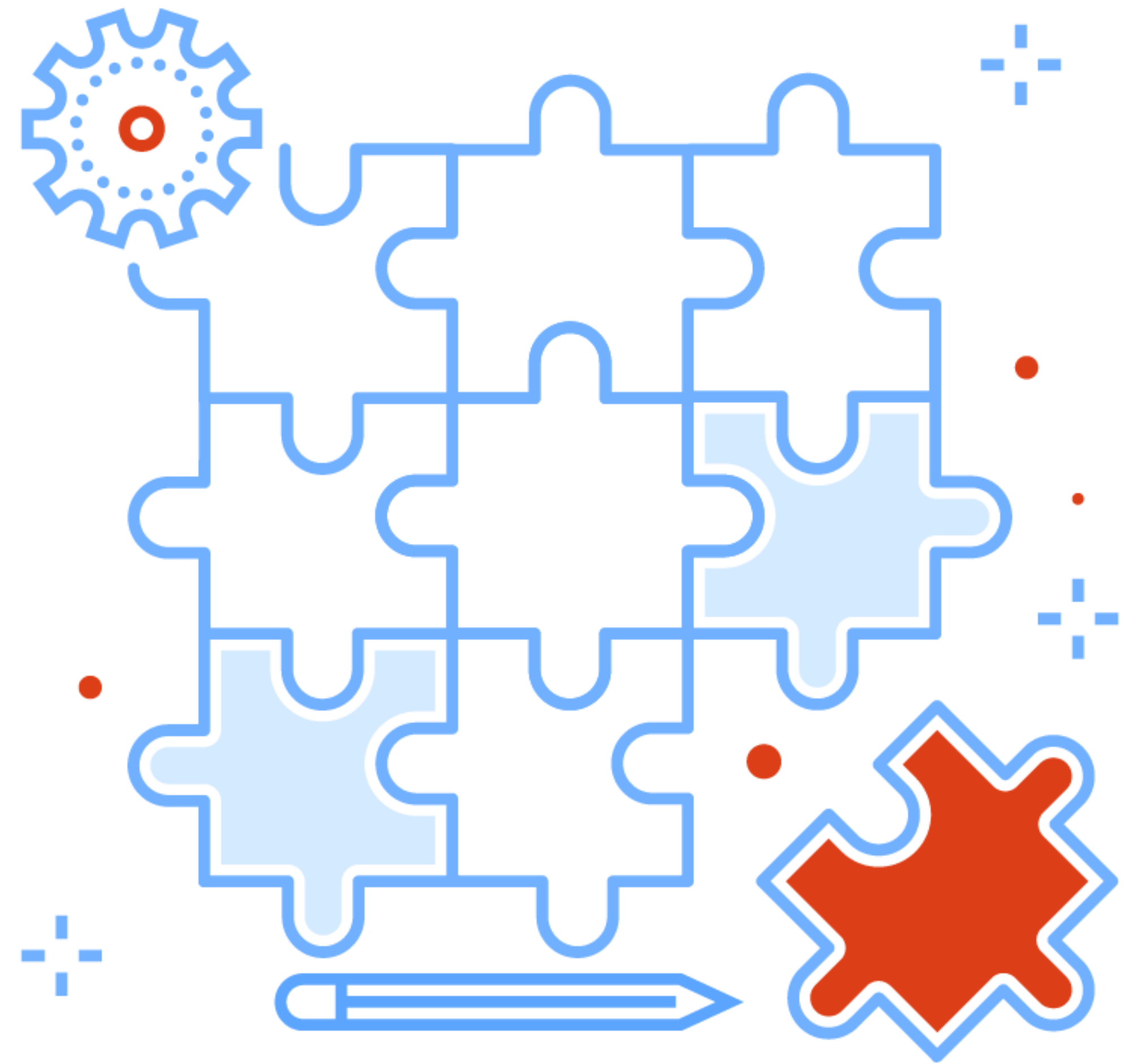


	Store Sales	Store Cost	Unit	Average
— All Customers	139,628.35	55,752.240	↗ Drill across	Gender
— USA	139,628.35	55,752.240	→ Select this	Products
+ CA	36,175.20	14,431.085	🗑 Remove	Time
— OR	40,170.29	16,081.073	↕ Order by	Year
+ Albany	4,491.26	1,782.817	⬆ Top rows	Quarter
+ Beaverton	2,407.97	950.359	⬆ Bottom rows	Month
+ Corvallis	5,695.13	2,281.248	🔍 Filter rows	Day
+ Lake Oswego	2,262.56	907.6483	🔧 Cell formatting	Weekly
+ Lebanon	5,934.62	2,390.0872		Year
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+ Portland	2,122.12	847.5187		Fiscal
+ Salem	4,251.81	1,697.9039		Year
+ W. Linn	2,161.61	871.0418		Quarter
				Month
				Day



PUT IT TOGETHER

**Know syntax,
use correct data
types, and
combine carefully**



Put it
together

Functions

Data type

Overview

Syntax

```
Sum( Set_Expression , Numeric_Expression )
```

Arguments

Set_Expression	MDX expression that returns a set.
Numeric_Expression	MDX expression that returns a number.

Put it
together

Functions

Data type

Overview

Syntax

```
Sum( Set_Expression , Numeric_Expression )
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Set_Expression	MDX expression that returns a set.
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- Follow the **syntax**!

Put it
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Functions

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Set_Expression	MDX expression that returns a set.
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- Follow the **syntax**!
- Use correct **data (expression) type** for function arguments

Put it
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Set_Expression	MDX expression that returns a set.
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- Know the **output** of the function

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Functions

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Set_Expression	MDX expression that returns a set.
Numeric_Expression	MDX expression that returns a number.

- Follow the **syntax**!
- Use correct **data (expression) type** for function arguments
- Know the **output** of the function
- Use **brackets, curly brackets, . (dots), commas** as prescribed

**Put it
together**

Functions

Data type

Overview

**Put it
together**

Functions

Data type

Overview

- **Member expression**

Put it together

Functions

Data type

Overview

- **Member expression**

```
[Time].CurrentMember
```

Put it together

Functions

Data type

Overview

- **Member expression**

`[Time].CurrentMember`

- **Date expression**

Put it together

Functions

Data type

Overview

- **Member expression**

```
[Time].CurrentMember
```

- **Date expression**

```
[Time].CurrentMember.StartDate
```

Put it together

Functions

Data type

Overview

- **Member expression**

`[Time].CurrentMember`

- **Date expression**

`[Time].CurrentMember.StartDate`

- **String expression**

Put it together

Functions

Data type

Overview

- **Member expression**

```
[Time].CurrentMember
```

- **Date expression**

```
[Time].CurrentMember.StartDate
```

- **String expression**

```
[Time].CurrentMember.Name
```


Put it together

Functions

Data type

Overview

- **Member expression**

`[Time].CurrentMember`

- **Date expression**

`[Time].CurrentMember.StartDate`

- **String expression**

`[Time].CurrentMember.Name`

- **Numeric expression**

Put it together

Functions

Data type

Overview

- **Member expression**

```
[Time].CurrentMember
```

- **Date expression**

```
[Time].CurrentMember.StartDate
```

- **String expression**

```
[Time].CurrentMember.Name
```

- **Numeric expression**

```
DateDiffDays(  
    [Time].CurrentMember.StartDate,  
    [Time].CurrentMember.NextStartDate)
```

Put it together

Functions

Data type

Overview

	Member	Date	String	Numeric
+ 2017	{[Time].[2017]}	Jan 01 2017	2017	365
+ 2018	{[Time].[2018]}	Jan 01 2018	2018	365
+ 2019	{[Time].[2019]}	Jan 01 2019	2019	365

Examples of expression types

Member	Set	Date	Numerical
[Status].[Done]	Any single member [Status].CurrentMember		1+1
[Time].CurrentHierarchyMember			Any quantitative measure
[Time].[Day]. CurrentDateMember. PrevMember	{[Status].[Done], [Status].[Closed], [Status].[Accepted]}	DateParse('2018-11-20')	
		[Time].[Day]. CurrentDateMember.StartDate	([Measures].[Issues created], [Status].[In Progress])
Aggregate({[Status].[Done], [Status].[Closed], [Status].[Accepted]})	[Status].[Status].Members, [Time]. [Year].CurrentDateMember. Children	[Measures].[Issues resolution date]	[Measures].[Issues resolved] + [Measures].[Issues due]
		[Issue].CurrentMember. getDate('Resolved at')	[Issue].CurrentMember.get('Story Points')
Order([Sprint].[Sprint].Members, [Sprint].CurrentMember('Start date')).Item(0)	Filter([Status].[Status].Member, [Status].CurrentMember.Name matches "D*")		DateDiffDays([Measures].[Issue creation date], [Measures].[Issue resolution date])

**Put it
together**

Functions

Data type

Overview

Put it together

Functions

Data type

Overview

- Use only **existing** measures, dimension members, and functions to create the new measure

Put it together

Functions

Data type

Overview

- Use only **existing** measures, dimension members, and functions to create the new measure
- Remember **basic mathematics**

Put it together

Functions

Data type

Overview

- Use only **existing** measures, dimension members, and functions to create the new measure
- Remember **basic mathematics**
- Get familiar with most popular **MDX functions and data types**

Put it together

Functions

Data type

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- Trust **AutoComplete!**

Put it together

Functions

Data type

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- Trust **AutoComplete!**
- **Start simple** and add complexity gradually

Put it together

Functions

Data type

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- Use measure **examples** from demo account and example reports with **understanding!**

Put it together

Functions

Data type

Overview

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- Remember **basic mathematics**
- Get familiar with most popular **MDX functions and data types**
- Trust **AutoComplete!**
- **Start simple** and add complexity gradually
- Use measure **examples** from demo account and example reports with **understanding!**
- **Test** each part of the calculation

date diff days = [edit](#)

Agile [show 1 measure](#)

Epic burn-down [show 7 measures](#)

Predicted [show 5 measures](#)

Predicted by issues [show 5 measures](#)

Prediction by epic [show 4 measures](#)

[Define new caclulated measure](#)

Table

Bar

Line

Pie

Scatter

Timeline

Map

Gantt

Gauge



Hide empty ▾

Total ▾

Freeze header

2017 ▾

	Issues resolved
+ Mar 2017	12
+ Apr 2017	45
+ May 2017	34
+ Jun 2017	36
+ Jul 2017	42
+ Aug 2017	42
+ Sep 2017	46
+ Oct 2017	26
+ Nov 2017	5
+ Dec 2017	

date diff days = [edit](#)

Agile [show 1 measure](#)

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Hide empty ▾

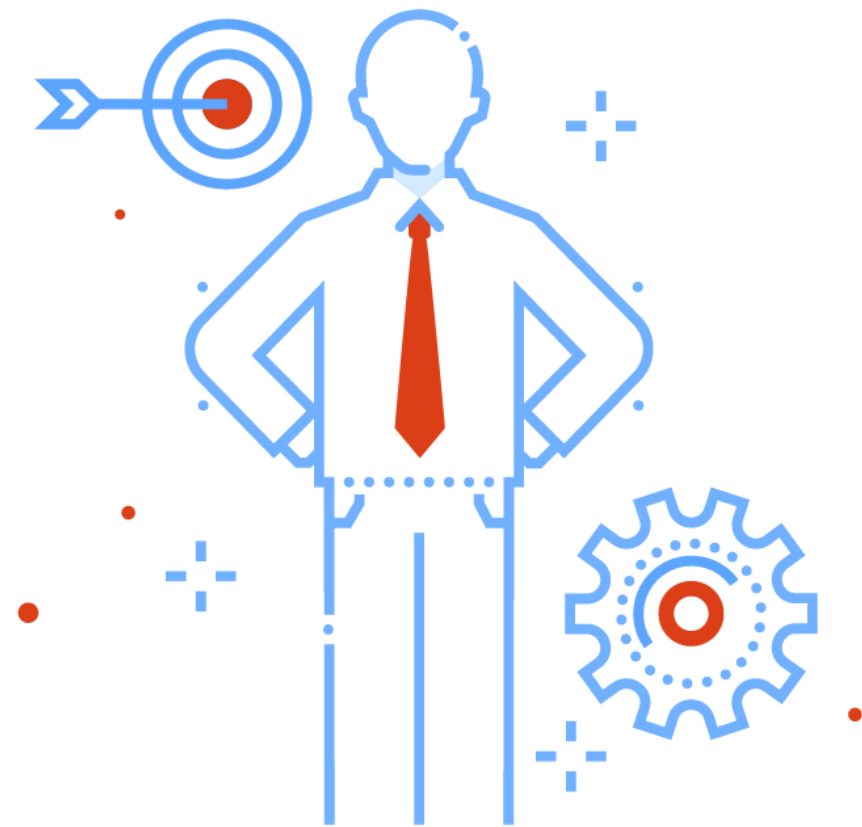
Total ▾

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+ Dec 2017	

RECAP



Concept



Measures & Dimensions



Functions





Questions?

community.eazybi.com

support@eazybi.com

An aerial photograph of a city at night, showing a dense grid of illuminated buildings and streets. The image is overlaid with a gradient that transitions from a deep red on the left side to a dark blue on the right side. The text "Thank you!" is centered in the middle of the image in a large, white, sans-serif font.

Thank you!